March 2023 Final



KENT COUNTY AIRPORT INVENTORY





The report reflects the views of the authors, who are responsible for the facts and accuracy of the research. The contents do not necessarily reflect the official view of FHWA, FTA, or DelDOT.

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The Dover/Kent County MPO is committed to Title VI compliance. Title VI states "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."

The MPO has produced a Title VI Plan to guide the assessment of projects for racial and related discrimination. The study will include a written assessment on whether the area of the project is considered an area covered by the Title VI Plan and whether the project will have a negative impact, a positive impact, or no impact.

Preface

Dover Kent MPO is pleased to provide this publication, *Kent County Airport Inventory*. Funded by FHWA, FTA, DelDOT and KEP, this resource is intended to examine the existing conditions of airports, helicopter pads, and other aviation facilities in Kent County, Delaware. These include amenities, ease of access, and any constraints such as zoning, built structures, or environmental factors. The study also includes an analysis of growth opportunities for these facilities, based on the overall findings and the constraints specific to the location. The appendices provide in-depth background on each facility.

Dover Kent MPO is responsible to ensure existing and future transportation projects are continuing, cooperative, and comprehensive and as such, appreciates continued support from FHWA, FTA, DelDOT, and our local MPO partners in order to ensure transportation policy information is shared. We are pleased to acknowledge the following collaborators on this project:

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Contents

Preface	1
Introduction	4
Study Background	4
History and Existing Conditions	4
Dover Air Force Base and Military Aviation	4
Delaware Airpark	6
Other Non-Military Aviation	6
Relevant Plans and Studies	8
Research Methods	12
Review of Available Data	12
Mapping	12
Fieldwork and Outreach	13
Results	14
General Findings	14
Opportunities for Growth and Development	14
Constraints	16
Hazards	17
Emergency Uses	18
Conclusion	19
Appendix A – Facility Descriptions	A-1
Public Airports	A-4
Smyrna Airport (Smyrna)	A-4
Chandelle Estates Airport (Dover)	A-7
Delaware Airpark (Cheswold)	A-10
Jenkins Airport (Wyoming)	A-12
Chorman Airport (Farmington)	A-16
Private Airports	A-19
Johnsons Airport (Magnolia)	A-19
Hrupsa Airport (Felton)	A-19
Doyles Airport (Felton)	A-20
Belfair Airport (Harrington)	A-20
Willaview Airport (Farmington)	A-20
Controlled Airports	A-21

Dover Air Force Base and Civil Air Terminal (Dover)	A-21
Defunct Airports	A-24
Flying C Airport (Hartly) [CLOSED]	A-24
Henderson Aviation Airport (Felton) [STATUS UNKNOWN]	A-25
Helipads	A-26
Dover Motor Speedway (Dover)	A-26
DelDOT Helistop (Dover)	A-28
Bayhealth Medical Center Heliport (Dover)	A-29
Delaware State Police Heliport (Dover)	A-30
Elliott Heliport (Magnolia)	A-31
Navigational Facilities	A-32
Smyrna VORTAC (Leipsic)	A-32
Other Navigational Facilities	A-34
Air Navigation Fixes	A-34
Appendix B – Considerations for Compatible Land Use	B-1
Effects of Airports on Adjacent Land	B-1
"Good Neighbor" Strategies for Airports	B-4
Effects of Adjacent Land on Airports	B-6
"Good Neighbor" Strategies for Adjacent Land	B-9
Planning and Zoning Strategies for Government	B-10

Introduction

Study Background

Kent County and the future of these facilities. To address this question, the Dover / Kent County MPO was asked to complete a study that examines each airport within the county. Data relevant to the topic (including acreage of parcels, existing hangars and other facilities, and current zoning of the airport and adjacent parcels) helped in creating a complete inventory of airports. Surrounding conditions such as residential neighborhoods, businesses, and topography are also factors that were considered. Maps of the airport locations and photographs of the facilities accompany the narrative. The study concludes by offering recommendations that may guide Kent Economic Partnership and airport owners and managers in how to address ongoing and future issues. This study provides data and context for consideration in determining the future potential for these airports, what challenges they are facing, and whether the facilities should be expanded for business generation.

History and Existing Conditions

The following section discusses the general history of aviation in Kent County, and it lists some of the uses of aircraft over the years. Both military and non-military aviation are discussed. Note that the list is not all-encompassing, and other uses may be present.

Dover Air Force Base and Military Aviation

The most noteworthy military aviation facility in Kent County is Dover Air Force Base (DAFB). The facility began as a municipal airport but was turned into a military airport in 1941, following the attack on Pearl Harbor. It was used to deploy anti-submarine patrols during World War II, as well as to train pilots for the 83rd Fighter Group. Dover Air Force Base continued to operate through the Korean War, the Vietnam War, and subsequent conflicts, acting as a vital location on the East Coast for the gathering and distribution of cargo, aircraft, and military personnel. Humanitarian efforts are also part of the facility's ongoing roles. ¹

This facility does not exist in isolation from the rest of Kent County; rather, it relies on the surrounding infrastructure to move goods, vehicles, and personnel between locations. A couple of examples of this are the county's road networks (which provide ground-level access to the air base), and the fuel pipelines and storage facility at Port Mahon (which are used to transport fuel between seagoing barges and the air base). The Dover/Kent County MPO regularly works with

¹ "Dover AFB History." Dover Air Force Base. https://www.dover.af.mil/About-Us/Fact-Sheets/Display/Article/228966/dover-afb-history/.

Dover Air Force Base in transportation planning, and publications such as the *Dover Air Cargo Freight Access Study* provide insight into existing conditions in the area as well as potential for growth and improvement.² A second Air Force Base-related study worth mentioning, the *Dover Air Force Base Compatible Use Study*, was started by the Delaware Department of Transportation (DelDOT) and partners in January of 2022. It is expected to be finalized by the summer of 2023.

In addition to military operations, Dover Air Force Base is also home to educational and entertainment opportunities. The Air Mobility Command Museum, housed in Hangar 1301, retains a collection of military aircraft, particularly those used for airlift and air refueling. Educational tours are offered by volunteers. For entertainment, Dover Air Force Base hosts an air show each year, which typically includes demonstrations by the USAF Thunderbirds and the US Navy Blue Angels.

Dover Air Force Base is the most significant military air facility in Kent County. Few other military facilities were discovered in the MPO's search. The Smyrna VORTAC facility in Leipsic, although not an airport, provides important navigational aid to both military and civilian aircraft. It is discussed further in Appendix A.



Delaware Public Archives

Figure 1: Pilots at Dover Air Force Base, 1944. Source: Delaware Public Archives (link).

² *Dover Air Force Base & the Delmarva Peninsula: Partners in One Community.* Dover Air Force Base, 2015. https://www.dover.af.mil/Portals/22/documents/Dover%20AFB%20Community%20ICEMAP.pdf.

Delaware Airpark

Delaware Airpark was one of the earliest facilities to open in Kent County, and it continues to operate to this day. It was opened in the 1950s by Floyd Durham, an aviator from Cheswold and a central figure in Kent County's aviation history. The airport began under the name "Little Acres", operating as a private facility with a turf airstrip. It started expanding in the 1960s when Dover Airfield was replaced with Dover Downs NASCAR Speedway; this expansion (which included a paved runway) allowed pilots in the area to continue to use their aircraft, despite the loss of Dover Airfield. Several more expansions took place over the years, and the added amenities have included a longer runway, new hangars, fuel storage tanks, a terminal building (which offers conference and lounge space), and runway lighting.³

Today Delaware Airpark is owned by the Delaware Department of Transportation (DelDOT), who purchased the facility from Floyd Durham in 2000. It is operated by the Delaware River and Bay Authority. It offers civilian pilots a place to store and maintain their aircraft, and its amenities provide them with an important gathering place. Delaware State University uses the facility as part of its Aviation Program, and the school keeps its fleet of aircraft at this location. According to the airport's 2008 business plan, it is the largest non-military, publicly owned air facility in central Delaware. Unlike most facilities in Kent County (which tend to be privately owned), it is a publicly owned facility that is also open to the public.

Other Non-Military Aviation

Aside from travel, non-military uses of aircraft over the years have been incredibly diverse. Uses have included freight transportation, surveying and aerial photography, aerial broadcasting, firefighting, law enforcement, air medical services, search-and-rescue, crop-dusting, mosquito-spraying, recreation (including sightseeing and skydiving), education, advertising, and entertainment in the form of air shows, among many others. The State of Delaware has historically been home to many of these uses in some form.

Air medical services are a major use for aircraft. This is an important means of transporting patients to regional medical facilities, especially when their injury or illness is severe and more extensive care is necessary. Facilities that employ these services in Kent County include Bayhealth Hospital and Dover Motor Speedway. Air medical services are discussed in the "Results" section of this study, as well as in Appendix A.

Crop-dusting is often done via aircraft known as aerial applicators or "crop-dusters". These aircraft apply pesticides, fertilizers, and cover crop seeds from overhead, ultimately reducing the time required for these tasks. Aerial applicators can be seen in Kent County throughout the year, especially over agricultural lands and at air facilities such as Chorman Airport.

³ *Public Interpretation Wayside Panels: Delaware River and Bay Authority*. Commonwealth Heritage Group, 2021. https://www.commonwealthheritagegroup.com/wp-content/uploads/2021/09/Delaware-Airport-Project.pdf.

Aerial applicators are also used by DNREC's Mosquito Control Section to manage the state's mosquito population. Airplanes and helicopters fly over woodland pools, where mosquito larvae tend to develop, and apply insecticides to precise locations. This method is shown to have minimal negative impacts towards humans and the environment, though it is most effective when done in tandem with other techniques such as Open Marsh Water Management (OMWM). Aircraft are also used to apply herbicides to invasive plant species.

Another use for aircraft is LiDAR technology. LiDAR, an acronym for "Light Detection and Ranging", employs airplanes to collect land cover data. The information is gathered by using lasers to cover the ground below the aircraft, and then detecting the light that is rebounded from surfaces. If done properly, it can be used to create accurate, three-dimensional maps of an area. One real-world example of this technology is the mapping of Delaware's coastline and wetland extent using LiDAR; the data can then help communities become better prepared for flooding and erosion.

There are many other non-military uses of aircraft that are not discussed in detail here. The previously mentioned uses are merely meant to serve as examples for how aircraft are utilized across Delaware and in Kent County.



Figure 2: Airplane in Milford field, 1911. Source: Delaware Public Archives (link).



Figure 3: Aerial application being conducted over wetlands in Delaware. Source: DNREC (link).

Relevant Plans and Studies

Delaware Airpark Business Plan (2008)

http://www.delawareairpark.com/pdf/dap_bp.pdf



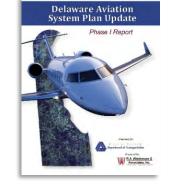
This 2008 document acts as a business plan for the Delaware Airpark facility. It lists the history of the airport, existing amenities, facility occupancy, revenue and expenses, and possibilities for improvement. Although much of the information is outdated by this time (in particular the forecasting of future activity), the background information and constraints to growth are still relevant for the purposes of the *Airport Inventory*. It has provided the MPO with a baseline for the more prominent ongoing issues at Delaware Airpark. This information in conjunction with input from facility managers provided a more comprehensive

understanding of the facility.

Delaware Aviation System Plan Update: Phase I Report (2011)

https://deldot.gov/Programs/aviation_svcs/pdfs/sys_plan/DelawareStateAviationSystemPlanPhase1
e1Report.pdf

This document builds upon the previous Aviation System Plan, updating the data and describing the growth that could take place at Delaware's air facilities. Within the system plan is a complete inventory of publicly accessible facilities, including information such as specific location, use type, runway length, and facility amenities. It also contains forecasting data which is displayed both in table and graph format; forecasted usage extends as far as 2030. This document was completed many years before, and as a result much of the information is no longer applicable. However, it is useful in that it



provides a template for how to analyze airport use and growth opportunities, especially in terms of attributes to examine.

Economic Impact Assessment of Delaware Airports: 2018 Technical Report (2018) https://deldot.gov/Programs/aviation_svcs/pdfs/sys_plan/DE-EI-2018-TechnicalReport.pdf



This document offers insights into the economic impacts of Delaware's air facilities. Unlike the previously mentioned plans, it features more recent information, making it one of the more relevant sources for the *Airport Inventory*. In addition to this, it also gives data specific to each of the operational facilities, including facility expenditures, gross economic impact, and constraints. Finally, this document lists many of the aviation activities found in Delaware (air cargo, tourism, training, aircraft salvage, etc.), along with the facilities that support each activity. Appendices contain survey work from across the state, which highlighted the number of aircraft at each facility and how often pilots visited the locations.

Delaware Aviation System Plan Update: Phase II Report (2020) https://deldot.gov/Programs/aviation_svcs/pdfs/2021/DE%20Aviation%20System%20Plan%20-%20Phase%202%20FINAL.pdf

This document is the second phase of the update to the Delaware Aviation System Plan. Expanding on the work from the first phase, it explores the status of aviation throughout the state, providing many valuable details such as the potential for expansion of various facilities. It is also recent enough to provide analysis on the impacts of COVID-19 on local aviation. The tables included in the document are useful for understanding the existing runway dimensions and the annual service volume. Anybody interested in additional specifications of Kent County's air facilities, such as economic details, hangar capacity, and schematics of the properties, should consult this source.

Department of Transportati

Phase II Report

DELAWARE AVIATION SYSTEM PLAN

Dover Air Cargo Freight Access Study: Planning and Environmental Linkage (PEL) Report (2021)

https://doverkentmpo.delaware.gov/files/2021/09/Dover-Air-Cargo-Freight-Study-PEL_final.pdf



This study, conducted by the Dover/Kent County MPO in collaboration with Century Engineering, examines possible transportation improvements on the east side of SR1 (primarily from Dover Air Force base to the north side of White Oak Road). Improvements would facilitate economic growth by improving access to the Garrison Oak Business and Technology Center and surrounding facilities such as the Civil Air Terminal. The outcome of this project was a series of recommendations that, if implemented, would improve transportation and economic connectivity. This study is relevant to the *Airport Inventory* because it lists existing conditions around Dover Air Force Base and the Civil Air Terminal, including land use and

environmental constraints, and it provides alternatives to address ongoing issues.

Delaware State Freight Plan Update (2022)

 $\frac{https://deldot.gov/Business/freight/pdfs/2022/2022\%20Delaware\%20State\%20Freight\%20Plan\%20Full.pdf?cache=1678199085910$

The 2022 Delaware State Freight Plan was recently completed by the Delaware Department of Transportation (DelDOT) in collaboration with the Dover/Kent County MPO and other partners. Its purpose is to list the existing freight conditions within the State of Delaware, which includes state airport operations. It also lists potential areas for improvement and expansion, specifically the Civil Air Terminal facility. Appendices for the plan list federal funding opportunities that are relevant to air facilities. The plan update was completed in 2022 and approved by the FHWA in January 2023.



Web Resources

Department of Defense: Readiness and Environmental Protection Integration (REPI) Program https://www.repi.mil/



This program under the Department of Defense (DoD) works to prevent conflicts with military training and other operations. REPI addresses issues of "encroachment" that could lead to interference of operations; these include residential and commercial lighting, overlapping radio frequencies, tall objects such as communication towers or wind turbines, and the encroachment of wildlife due to the loss of adjacent habitat. The program works to mitigate neighboring impacts on military operations, as well as the impacts of military on people and the environment. As a result, the land use conflicts addressed by REPI are highly relevant to the *Airport Inventory*.

Federal Aviation Administration: Visual Flight Rules (VFR) Sectional Charts and NOTAMS https://www.faa.gov/air_traffic/flight_info/aeronav/productcatalog/vfrcharts/



This resource from the Federal Aviation Administration (FAA) provides charts of the airspace above the United States, including the area surrounding the State of Delaware. The charts feature locations of air facilities, navigational aids, no-fly zones, flight paths, and other relevant information. Also available through this resource are Notices to Airmen (or NOTAMs), which are used by pilots to understand current flight restrictions and other important happenings. The sectional charts and NOTAMS were useful for the *Airport Inventory* because they provided an understanding of the airspace in the region.

Additional Resources

Additional web resources include the U.S. Code of Federal Regulations, the Delaware Code, the FAA Airport Data and Information Portal, the FAA Aviation Emissions and Air Quality Handbook, the U.S. Aviation Climate Action Plan, the FAA Advisory Circular for Airport Land Use Compatibility Planning, and the FAA/USDA National Wildlife Strike Database, as well as others. These resources can be found in Appendix B of the study.

Research Methods

Review of Available Data

MPO staff consulted a variety of sources to gather all available information on Kent County's air facilities. These sources included online databases (primarily FAA airport data), the webpages for Dover Air Force Base and Delaware Airpark, topographical and satellite maps, and VFR sectional charts of the region. Facility owners and managers were consulted whenever possible, especially when the status of a facility was unclear.

Something worth noting is the prevalence of inconsistencies in the available data, particularly in online databases. Some Kent County airports are listed as "active" when they have been inactive for several years (as is the case with Flying C Airport in Hartly). Others are listed under multiple names, which could be confusing to pilots seeking a place to land (for example, Smyrna Airport is sometimes referred to as Newburg Airport, and each name has a different corresponding FAA ID). The ambiguity surrounding these databases highlights the need for a consistent list of facilities with up-to-date information.

Mapping

Building off the available data, MPO staff assembled a map of all known air facilities. Data for this task was gathered primarily from the FAA and other online databases. In the case of runway lengths, satellite imagery and mapping tools were used to obtain accurate measurements. Attributes used in the mapping process include status, facility type, owner type, use type, FAA ID, runway surface, and runway length, in addition to other attributes.

The result was a map that depicts the location of each of the air facilities in Kent County, along with its use type and current status (see Figure 8). Also included with this map is an attribute table that lists the previously mentioned attributes (see Figure 9). This map can be viewed in Appendix A of the study. Smaller inset maps, included with each of the airports, depict the existing conditions around the facilities; these were generated using webmaps created by the MPO.

Fieldwork and Outreach

The background research was supplemented with fieldwork at the various air facilities across Kent County. MPO staff primarily visited each of the public airports, making note of the amenities and constraints, and taking photographs to include in the study. When it was possible, MPO staff also coordinated with facility owners and managers, who provided a more thorough understanding of each location. Visits to private air facilities were not possible in many cases, as the facilities are not open to the public, and the owners' contact information was not provided anywhere. The majority of fieldwork was conducted in the fall of 2022.

The results of this fieldwork are included in Appendix A of the study. These consist of observations surrounding each facility, as well as corresponding photographs that illustrate the existing conditions. Note that some facilities will contain limited background information, due to the challenge of contacting the property owners and the inability to conduct fieldwork.



Figure 4: The front entrance to the main building at Delaware Airpark. Photograph taken during the MPO's visit to the facility.

Results

General Findings

One of the most significant discoveries from this study was that there is very little land adjacent to Kent County's air facilities that could be used for growth or expansion. Most of this land consists of either built structures, roadways, wetlands, or cropland (much of which is protected under agricultural easements). The existing conditions would make outward growth challenging, though improvements within the properties are certainly possible. This will be discussed in greater detail in another section.

The airport map reveals the spatial distribution of air facilities throughout Kent County. Based on the facility locations, it is evident that most of the public airports are located in the northern part of the county (e.g., Smyrna Airport, Delaware Airpark, and Chanelle Estates Airport), whereas the private airports are mostly in the southern part (e.g., Hrupsa Airport, Belfair Airport, and Willaview Airport). The helicopter pads, both public and private, are all concentrated in the Dover area. Very few facilities exist in the easternmost part of the county, which consists largely of wetlands.

The wide variety of uses found at the air facilities is another valuable discovery. Across its facilities, Kent County is home to military aviation, law enforcement, air medical services, recreational flying, education and training, crop-dusting, aerial application, aircraft salvaging, and many other uses. These should be considered when looking for economic expansion, as the uses are already present, and it may be possible to expand upon them at specific locations.

Opportunities for Growth and Development

Through the course of the research and outreach process, it was determined by the MPO that most of the air facilities within Kent County are faced with many challenges in terms of constraints. This is primarily due to adjacent properties that contain built structures, roadways, wetlands, and agricultural easements; due to these combined constraints, there is very little available land alongside the air facilities' properties, even if these adjacent parcels were acquired. As a result, considerable effort and planning would be needed in order to make use of such locations. For example, in some cases, entire structures would need to be relocated or removed. Similarly, any property that contains wetlands would have numerous environmental challenges associated with it. In a general sense, the MPO found very few cases of available land at either end of a runway or adjacent to an air facility. The constraints specific to each location are discussed in greater detail in Appendix A of this study.

The more realistic improvements are those that can be carried out within the existing properties. For example, rather than expanding to adjacent properties, it would be more feasible to add a new hangar or turn a grass airstrip into a paved runway, when appropriate. Another feasible

change would be an expansion of site-specific activities, such as training opportunities, cropdusting, and aircraft salvaging. This will not always be the case (some facilities have no need for even small improvements), but given the constraints from adjacent properties, these sorts of changes are more likely to occur than a full property expansion.

Of all the currently operational facilities, Delaware Airpark and the Civil Air Terminal are most likely to be capable of development, due to the property size and available resources. According to Phase II of the Delaware Aviation System Plan, it would be beneficial to extend the runway at Delaware Airpark, so that civilian aircraft could be accommodated if the Civil Air Terminal were to become unavailable in the future. This plan recommends extending the runway from 4,201 feet to 5,500 feet. However, the subsequent impact on wetlands and residential areas would need to be considered, as both of these constraints are present around the runway.

The Civil Air Terminal also has potential for further development, either within the property or along nearby roads. Although its runway can already accommodate large aircraft, there are other opportunities that could be pursued. As explored in the *Dover Air Cargo Freight Access Study*, the improvement of roadways surrounding the facility would support economic growth and improve interconnectivity with nearby business centers. While the land outside of the Civil Air Terminal is largely undeveloped, it also consists primarily of wetlands, which would make external development (excluding roadways) more challenging.

Based on the MPO's findings, it is apparent that the smaller air facilities already carry out their purposes without significant need for expansion. This is not to say that changes are not needed within the properties. For example, the runway at Chandelle Estates Airport is in serious need of repaving, and grass airstrips such as the one found at Jenkins Airport lack adequate lighting. Each of the public airports could use better safety designations to prevent pedestrians from stepping onto runways, and the proximity of runways to cropland increases the risk of collision with wildlife. These are all challenges that can be addressed without acquiring adjacent properties. Areas in need of improvement are discussed in Appendix A of the study, and tools for compatible use are discussed in Appendix B.

Constraints

This section will discuss some of the common constraints to growth, and how these obstacles might affect the expansion of air facilities of Kent County. Examples of each constraint will be given based on background research, input from facility managers, and observations made by the MPO during fieldwork.

First, the built environment can lead to multiple types of constraints. For one, existing residential areas can restrict the expansion of an air facility, particularly the runway. This is the case at Chandelle Estates Airport, where the northern end of the runway is not far from existing houses. Similarly, at Jenkins Airport, a



Figure 5: Wetlands on the edge of the runway at Delaware Airpark.

new house has resulted in the disuse of one of the runways, as the structure is tall enough to be within the runway's airspace. This should be avoided if a facility is to continue to operate at full capacity, as incompatible development can hinder an airport's economic capabilities and reduce the total number of visiting aircraft.

Another common constraint is the presence of roadways alongside the airport property (as is the case at Chandelle Estate Airport and Chorman Airport). A runway cannot cross a major road, as this would present a hazard to both motorists and pilots. However, other facilities such as hangars could possibly be maintained on the opposite side of a low-traffic road, should the airport owners have access to both parcels; but this does not seem to be the case in any of Kent County's airports.

Wetlands are a major constraint for many of the air facilities. Smyrna Airport, Chandelle Estates Airport, Delaware Airpark, Jenkins Airport, and Chorman Airport are all adjacent to wetlands of varying sizes. This would likely prevent expansion in the direction of the wetlands, which are protected under state and federal law. Even if building permits were obtained and wetland mitigation were carried out to offset the impacts, construction on wetlands is challenging and expensive due to the environmental conditions (which could include loose earth, wet ground, and periodic flooding). Furthermore, the environmental consequences associated with growth (such as biodiversity loss and pollution of water sources) would need extensive consideration, and if the risk were too great, the changes could not be completed. For these reasons, wetlands should typically be considered off-limits to growth.

⁴ *Delaware Aviation System Plan Update: Phase II Report.* DelDOT (2020). https://deldot.gov/Programs/aviation_svcs/pdfs/2021/DE%20Aviation%20System%20Plan%20-%20Phase%202%20FINAL.pdf.

Agriculture can be either a benefit or a constraint to airports. Of the various land use types, the FAA has recognized agricultural lands and open spaces as some of the most compatible types when adjacent to an airport; this is due in part to the low population density, which means there is a reduced likelihood of conflict between uses. On the other hand, farmland can act as a constraint in the form of agricultural easements, which preserve the land and prevent the addition



Figure 6: One of the runways at Jenkins Airport, which is abutted by cropland. There is also a house built at the runway's northern end; this could be a hazard to pilots.

of conflicting uses. Chorman Airport, as an example, is abutted by agricultural easements to the north, east, and west, which means expansion in these directions is unlikely. Some of Kent County's private airports exist within easements (such as Hrupsa Airport and Willaview Airport), but the public airports are located adjacent to easements rather than within. It should be noted that even if adjacent agricultural land is not preserved under an easement, farmland as a whole is classified as Investment Level 4 according to the Delaware State Strategies for growth management. This means growth in these areas is not encouraged; this typically refers to housing and commercial

growth, but it could also be applied to air facility expansion or other land uses.

Finally, something airport owners need to be aware of is the possible presence of archaeological artifacts on their properties. Many of these artifacts have been traced back to the Lenape people of central Delaware, while others came from the farming communities first created by European settlers. Delaware Airpark is a prime example of how an airport can continue to develop its facility while still being respectful towards the local history. Over the years the owners have conducted archaeological excavations before expanding the facility's runway and hangars, ensuring nothing is accidentally lost. They have also provided educational resources in the form of signage and brochures; these resources teach people about the communities that have lived in the region throughout the years, as well as the Lenape community that continues to shape Kent County's ongoing story.

Hazards

Something property owners should be keenly aware of is the presence of hazards on their land. These are not constraints that explicitly prevent growth, but rather, they are objects or other environmental factors that increase the risk faced by pilots. Hazards near air facilities can include physical objects such as buildings (as is the case with Jenkins Airport), power lines, wind turbines, and tall trees; visual obstructions such as glare and smoke; electronic interference; and

wildlife hazards, most notably large birds and deer. Strategies for how property owners can deal with various hazards and mitigate their impact are included in Appendix B of this study.

Emergency Uses

Unless authorized, pilots are not allowed to land in areas outside of publicly accessible air facilities (e.g., private facilities, land, or bodies of water) under normal circumstances. However, in the event of an emergency, such a landing (sometimes known as a "forced landing") is permitted. Forced landings usually refer to on-board emergencies such as a fire, engine failure, or damage to the aircraft (e.g., a wildlife strike or contact with debris).

The following text is included under § 304 in Title 2, Chapter 3 of the Delaware Code:

"No person shall land an aircraft on the lands or waters of another, without the owner's consent, except in the case of a forced landing. For damages caused by a forced landing, however, the owner or lessee of the aircraft or the airperson shall be liable, as provided in § 305 of this title."

Kent County is widely covered in agricultural land that could serve as a place of landing in the event of an emergency. Although this would result in destroyed crops and economic loss, it would be greatly preferrable to the alternative of landing in a residential area or along a major roadway, where the likelihood of injury is much higher. Note that this should only be done if an immediate forced landing is unavoidable; otherwise, one of the county's publicly accessible air facilities should be sought out.

There are also some cases in which a medical emergency requires an aircraft to divert its course and land at the nearest available facility. Commercial airlines are often equipped to deal with various medical emergencies, but the supplies kept on board are not as advanced as those available on the ground. Smaller aircraft will have even fewer supplies than large, commercial aircraft. Medical emergencies could include allergic reactions, respiratory issues, nausea, and loss of consciousness, among others.

In terms of air medical services, the Bayhealth Medical Center heliport in Dover is the only aircraft-accessible medical facility in Kent County, and it is only capable of accommodating small helicopters. However, Dover Motor Speedway is equipped for medical treatment at its two major facilities (both the speedway and the Woodlands), should an emergency arise. The Speedway's many helicopter pads also allow helicopters to transport patients from the property if necessary. In the event of an emergency, the other Kent County air facilities could serve as a connection between the aircraft and the hospital: in other words, first an aircraft would need to land safely, and then the patient would need to be transferred to a proper medical facility.

Kent County Airport Inventory / March 2023 Dover Kent County MPO

⁵ "Title 2 Aeronautics, Chapter 3 Uniform State Aeronautics Law." The Delaware Code Online. https://delcode.delaware.gov/title2/c003/index.html.

Conclusion

Kent County has a long history with aviation, both military and civilian, which has contributed to various sectors of the local and regional economy. These are opportunities that should continue to be explored, as there is more potential in these industries. Based on the findings from literature reviews, mapping, and outreach activities, it is apparent that outward expansion of air facilities would be difficult, due to the existing constraints. However, by using the already-available land to improve aviation-centered industries, it is possible to foster economic development without relying on external parcels of land.

The appendices of this study provide further information on each of the air facilities in Kent County, as well as strategies for maintaining good relations between air facilities and their neighbors. These resources are available for airport owners and managers, municipalities, and other relevant stakeholders. It is the hope of the MPO that the study will help in future decision-making for these facilities and give stakeholders a variety of tools for solving common challenges.



Figure 7: Signage outside of Chandelle Estates Airport.

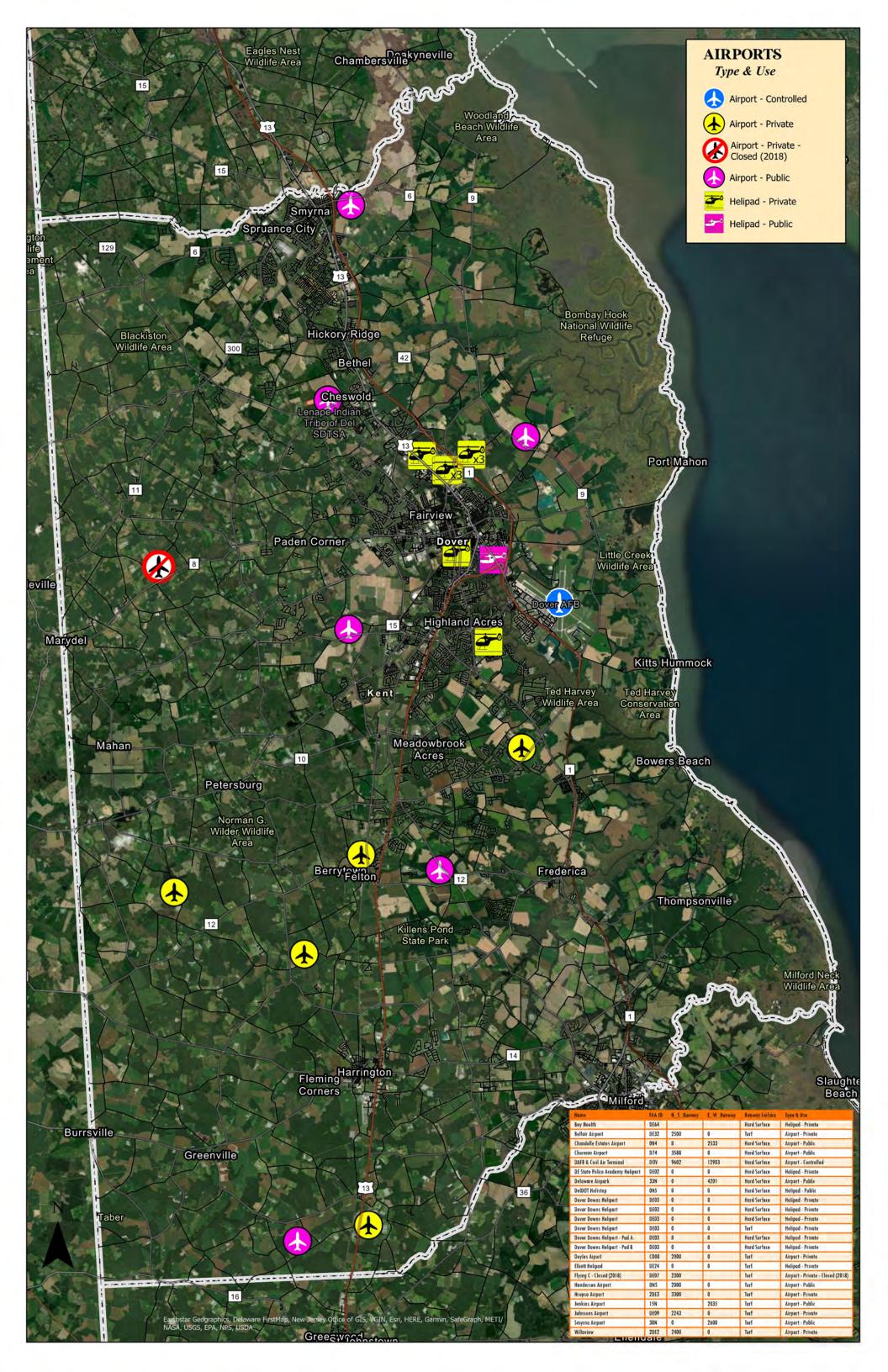
Appendix A – Facility Descriptions

The following is a list of airports and airstrips, helicopter pads, and navigational facilities located in Kent County. Included with each facility is a description of infrastructure such as runways and hangars, existing conditions such as surrounding houses and agricultural lands, and potential opportunities for expansion. Photographs of the sites, which were taken during the MPO's fieldwork throughout the county (or provided by facility managers or public affairs), will also be included. Each category lists the facilities from the northernmost to the southernmost location.

Note that the following list may not include a facility if it is seemingly defunct or if the airstrip could not be located. While there may be other facilities in existence, the MPO chose to focus on airports and helicopter pads that are clearly still in operation. Each facility's status was determined by reviewing the most recent FAA information, communicating with property owners and managers, and visiting the site if possible. It is also worth noting that some facilities will contain limited background information, due to the challenge of contacting the property managers and the inability to conduct fieldwork.

Inset maps depict the presence of built structures, wetlands, and agricultural easements around each of the airports. The maps are intended to give a general idea of nearby constraints rather than a complete picture. Other constraints that are not depicted in the maps might also be present, which is why additional resources should be consulted before considering expansion of a facility.

Figure 8 (next page): Map depicting the locations of each of the air facilities in Kent County, Delaware.



Name	FAA ID	N_S_Runway	E_W_Runway	Runway Surface	Type & Use
Bay Health	DE64			Hard Surface	Helipad - Private
Belfair Airport	DE32	2500	0	Turf	Airport - Private
Chandelle Estates Airport	ON4	0	2533	Hard Surface	Airport - Public
Chorman Airport	D74	3588	0	Hard Surface	Airport - Public
DAFB & Civil Air Terminal	DOV	9602	12903	Hard Surface	Airport - Controlled
DE State Police Academy Heliport	DE02	0	0	Hard Surface	Helipad - Private
Delaware Airpark	33N	0	4201	Hard Surface	Airport - Public
DelDOT Helistop	0N5	0	0	Hard Surface	Helipad - Public
Dover Downs Heliport	DE03	0	0	Hard Surface	Helipad - Private
Dover Downs Heliport	DE03	0	0	Hard Surface	Helipad - Private
Dover Downs Heliport	DE03	0	0	Hard Surface	Helipad - Private
Dover Downs Heliport	DE03	0	0	Turf	Helipad - Private
Dover Downs Heliport - Pad A	DE03	0	0	Hard Surface	Helipad - Private
Dover Downs Heliport - Pad B	DE03	0	0	Hard Surface	Helipad - Private
Doyles Aiport	CD00	2000	0	Turf	Airport - Private
Elliott Helipad	DE24	0	0	Turf	Helipad - Private
Flying C - Closed (2018)	DE07	2300		Turf	Airport - Private - Closed (2018)
Henderson Airport	DN5	2000	0	Turf	Airport - Public
Hrupsa Airport	2DE3	3300	0	Turf	Airport - Private
Jenkins Airport	15N		2035	Turf	Airport - Public
Johnsons Airport	DE09	2243	0	Turf	Airport - Private
Smyrna Airport	38N	0	2600	Turf	Airport - Public
Willaview	2DE2	2400	0	Turf	Airport - Private

Figure 9: An attribute table that corresponds with the airport map. Attributes include FAA ID, runway length, runway surface, type of facility, and usage.

Public Airports

Smyrna Airport (Smyrna)

FAA ID	38N
Ownership	Private
Use Type	Public
Runway Type	Grass
Runway Length	2,600 ft (E-W)

Smyrna Airport is a privately owned facility that is open to the public. It is located on the southern side of Woodland Beach Road, immediately to the east of Route 1, and about a mile to the east of downtown Smyrna. The east-west runway is made of grass and is about 2,600 feet in length. Several hangars and a small office space are found on the property. Fuel tanks are also located outside the hangars. Windsocks are present, and lighting is limited; aside from this, there are few other amenities. An obstruction of note is the cluster of



trees found about 1,020 feet from either end of the runway.

The property is largely used for crop production. Woodland Beach Road creates the northern boundary of the property, and Route 1 is found immediately to the west. Another property abuts the eastern boundary. Mill Creek (a tributary of the Smyrna River) creates the southern boundary; the creek and land alongside it are considered wetlands, which would restrict growth in this direction. It might be possible to extend the runway towards the west into the surrounding cropland, but there is little need for this, as the existing facilities (hangars, etc.) would still not be able to accommodate larger aircraft.

Note: Certain online inventories list this facility under the name "Newburg Airport." Given that they share nearly the same location, it was determined by the MPO that Newburg Airport is an old or inaccurate name for Smyrna Airport.





Figure 10 (l): Facing south down the taxiway of Smyrna Airport, towards the grass airstrip.

Figure 11 (r): Smyrna Airport hangar (a).





Figure 12 (l): Smyrna Airport hangar (b).

Figure 13 (r): Seating area outside one of the hangars at Smyrna Airport.





Figure 14 (1): Warning sign outside of taxiway at Smyrna Airport.

Figure 15 (r): Smyrna Airport hangar (c).





Figure 16 (l): Propeller airplane in hangar at Smyrna Airport.

Figure 17 (r): Office building at Smyrna Airport.

Chandelle Estates Airport (Dover)

FAA ID	0N4
Ownership	Private
Use Type	Public
Runway Type	Asphalt
Runway Length	2,533 ft (E-W)

Chandelle Estates Airport is a privately owned facility that is open to the public. The facility itself is located on Kruser Boulevard in Dover, while the runway extends towards the southwest, parallel to Silver Leaf Lane, until it reaches Bayside Drive. The runway has a paved surface and is 2,533 feet in length. The asphalt is noticeably cracked, and the FAA lists the runway as being in "poor" condition. Aside from the runway itself, the most prominent amenities at this facility are the large hangars that are used to



house and maintain aircraft. There is a cluster of trees about 264 feet from the northern end of the runway, and another cluster about 243 feet from the southern end.

Due to existing conditions, expansion does not seem likely. To the west of the airstrip are houses along Silver Leaf Lane; to the east is cropland belonging to another property. It does not appear possible to extend the airstrip in either direction, as the southern end is abutted by Bayside Drive, and the northern end is abutted by Kruser Boulevard. Houses and wetlands are found on the opposite side of Kruser Boulevard, which are significant constraints to expansion.





Figure 18 (l): Paved runway at Chandelle Estates Airport.

Figure 19 (r): Aircraft in hangar at Chandelle Estates Airport (a).





Figure 20 (l): Chandelle Estates Airport hangar (a).

Figure 21 (r): Chandelle Estates Airport hangar (b).





Figure 22 (l): Scrap aircraft at Chandelle Estates Airport.

Figure 23 (r): Aircraft parked at Chandelle Estates Airport.





Figure 24 (l): Aircraft in hangar at Chandelle Estates Airport (b).

Figure 25 (r): Aircraft in hangar at Chandelle Estates Airport (c).

Delaware Airpark (Cheswold)

FAA ID	33N
Ownership	Public
Use Type	Public
Runway Type	Asphalt
Runway Length	4,201 ft (E-W)

Delaware Airpark is the largest non-military, publicly owned air facility in central Delaware. It is located about a mile to the west of downtown Cheswold, conveniently close to Route 13 and the City of Dover. The recently expanded 4,201-foot paved runway is in excellent condition, and although it cannot accommodate large aircraft on the scale of Dover Air Force Base and the Civil Air Terminal, it is nonetheless one of the best-equipped air facilities in the state. The airport is home to a wide variety of uses, including recreational



aviation and training through Delaware State University. Its on-site amenities such as classrooms, conference rooms, and lounge space are unique among Kent County's airports. According to Phase II of the Delaware Aviation System Plan Update, Delaware Airpark receives an annual count of 23,600 aircraft operations, making it the busiest non-military facility in the county. Since upgrading its runway, the old runway has been turned into the designated taxiway.

The facility managers have discussed expanding the runway even further to improve access for larger aircraft; such improvements are discussed in Phase II of the Delaware Aviation System Plan. However, this might be challenging to accomplish. Wetlands are found at both the eastern and western ends of the runway, which would likely create constraints to future expansion. The archaeological significance of the area is also worth noting, as artifacts have been found in the past. (Delaware Airpark always works to preserve these artifacts before any expansion is carried out.) These factors would need to be considered if runway expansion were pursued. There are other changes that Delaware Airpark could undertake in place of runway expansion, such as adding additional hangars to increase the capacity of stored aircraft. This would also improve the recreational and educational opportunities that are already established at the airport.





Figure 26 (l): Paved runway at Delaware Airpark.

Figure 27 (r): Delaware State University aircraft parked at Delaware Airpark.





Figure 28. (1): Looking towards the wetlands behind the runway at Delaware Airpark.

Figure 29 (r): The front entrance to the main building at Delaware Airpark.





Figure 30 (l): The sign outside of the Delaware Airpark property.

Figure 31 (r): Various aircraft parked at Delaware Airpark.



Figure 32: Several small aircraft inside a hangar at Delaware Airpark. Source: Delaware River and Bay Authority (<u>link</u>).

Jenkins Airport (Wyoming)

FAA ID	15N
Ownership	Private
Use Type	Public
Runway Type	Grass
Runway Length	2,400 ft (N-S), 2,035 ft (E-W)

Jenkins Airport is a privately owned facility that is open to the public. It is located in the Town of Wyoming along Westville Road, to the west of Fifer Orchards. The property contains two grass airstrips that run perpendicular to one another. The north-south runway is 2,400 feet in length, and the east-west runway is 2,035 feet. There is a cluster of trees 255 feet from the end of the runway, which could present a potential obstacle to pilots. The runways include some lighting, but much of this is covered by vegetation.



One noteworthy feature is the high concentration of old aircraft, which are kept both inside and out of hangars. According to the facility's owner, aircraft are often flown to Jenkins via Manassas Regional Airport or another location; once arrived, they are kept until a specific part is needed for a different vehicle. Jenkins Airport is one of the few facilities in Kent County that conducts this sort of salvaging for aircraft. In addition to the parts stored on-site, operational aircraft are also kept at the facility.

The property is abutted to the west by Almshouse Branch, a tributary of Isaac Branch (which eventually becomes the St. Jones River). This body of water and the land along its banks are classified as wetlands. Westville Road makes up the property's southern boundary, and Allabands Mill Road makes up the northern boundary. To the east is cropland, much of which belongs to Fifer Orchards. There is a house at the end of the north-south runway, which, according to the Delaware Aviation System Plan Update, is the reason this runway is no longer used. At this time the owner of Jenkins Airport is not looking to expand the facility beyond its existing features.





Figure 33 (l): Jenkins Airport grass runway, with cropland to the west and a house at the opposite end.

Figure 34 (r): Hangar and scrap aircraft wings at Jenkins Airport.





Figure 35 (l): Jenkins Airport hangar.

Figure 36 (r): Scrap aircraft at Jenkins Airport (a).





Figure 37 (l): Scrap aircraft at Jenkins Airport (b).

Figure 38 (r): Aircraft parked outside hangars at Jenkins Airport.





Figure 39 (l): Scrap aircraft at Jenkins Airport (c).

Figure 40 (r): Scrap aircraft at Jenkins Airport (d).

Chorman Airport (Farmington)

FAA ID	D74
Ownership	Private
Use Type	Public
Runway Type	Asphalt
Runway Length	3,588 ft (N-S)

Chorman Airport is a privately owned facility that is open to the public. It is found along Nine Foot Road, about 2.5 miles to the southwest of Farmington and about 3 miles to the northwest of Greenwood. It is a large facility with many hangars positioned along the southern edge of the property. The runway is paved and measures about 3,588 feet in length; the asphalt is in good condition. Inside the hangars are both large and small aircraft that are used for a variety of purposes; for example, the Beechcraft Model 18 kept on the property is



currently used for mosquito spraying. The airport is home to Chorman Spraying, which offers aerial application services.

The southern part of Chorman Airport is abutted by Nine Foot Road. Cropland is found both east and west of the runway, as well as to the north, and agricultural easements have been given for these parcels. Tomahawk Branch is located to the west of the runway; this small body of water is a tributary of Marshyhope Creek, which eventually joins the Nanticoke River. The forested area at the northwestern end of the property is considered wetland. A drainage ditch also passes under the middle part of the runway. Due to the existing wetlands, agricultural easements, and other barriers in place, any future expansion would be heavily restricted. However, given the up-to-date condition of the runway and number of built hangars, the airport might not need expansion at this time.





Figure 41 (l): Chorman Airport paved runway.

Figure 42 (r): Beechcraft Model 18 in hangar at Chorman Airport (used for mosquito spraying).





Figure 43 (l): Hangars at Chorman Airport (a).

Figure~44~(r):~Chorman~Airport~directional~signage.





Figure 45 (l): Hangars at Chorman Airport (b).

Figure 46 (r): Hangars at Chorman Airport (c).





Figure~47~(l): Aircraft~in~hangar~at~Chorman~Airport.

Figure 48 (r): Chorman Airport safety signage.

Private Airports

The private air facilities of Kent County are not available for visitation without first contacting the owners; furthermore, in many cases, the facility's contact information is not available. For these reasons, the MPO was unable to visit the sites. In lieu of additional photographs or insights, this section will list any specifications that can be attributed to each facility, including the owner and use type, the runway type, and the runway length.

Johnsons Airport (Magnolia)

FAA ID	DE09
Ownership	Private
Use Type	Private
Runway Type	Grass
Runway Length	2,243 ft (N-S)

Hrupsa Airport (Felton)

FAA ID	2DE3
Ownership	Private
Use Type	Private
Runway Type	Asphalt
Runway Length	3,300 ft (N-S)



Figure 49: The sign outside Johnsons Airport in Magnolia.

Doyles Airport (Felton)

FAA ID	DE00
Ownership	Private
Use Type	Private
Runway Type	Grass
Runway Length	2,000 ft (N-S)

Belfair Airport (Harrington)

FAA ID	DE32
Ownership	Private
Use Type	Private
Runway Type	Grass
Runway Length	2,500 ft (N-S)

Willaview Airport (Farmington)

FAA ID	2DE2
Ownership	Private
Use Type	Private
Runway Type	Grass
Runway Length	2,400 ft (N-S)



Figure 50: A VFR sectional chart that shows the locations of public and private air facilities in the southern part of Kent County. Source: FAA.

Controlled Airports

FAA ID	DOV
Ownership	Military
Use Type	Controlled
Runway Type	Asphalt
Runway Length	9,602 ft (N-S), 12,903 ft (E-W)

Dover Air Force Base and Civil Air Terminal (Dover)

Dover Air Force Base is the largest and most heavily used air freight terminal under the United States
Department of Defense (DoD). Large aircraft such as the C-5M Super
Galaxy and C-17 Globemaster III are used to transport personnel and cargo throughout the country and around the world, making the facility a strategically vital location on the East Coast. In addition, the Air Force Mortuary Affairs Operations
(AFMAO) conducts dignified transfers from the facility, and aircraft maintenance and flight training are



carried out from here. Dover Air Force Base is a major employer in the region and contributes significantly to the economy of Kent County and the State of Delaware.

Dover Air Force Base regularly partners with the community to improve compatibility and foster mutually beneficial relationships. This is done through outreach efforts, transportation studies, and other measures. Facility personnel volunteer with groups such as the Special Olympics of Delaware and NASCAR events, and the base is involved in the planning for future challenges such as sea-level rise. The facility strives to remain a "good neighbor" and reduce impacts on the community such as noise pollution.

Also on the property of Dover Air Force Base is the Civil Air Terminal, a joint-use facility that is owned by the Delaware Department of Transportation and operated by the Delaware River and Bay Authority. As a result of the agreement with the United States Air Force, non-military aircraft are able to land at the Air Force Base's controlled runways, though this can only be done with permission from the proper authorities. The Civil Air Terminal is used by aircraft bringing in NASCAR drivers and performers for Dover Motor Speedway and Firefly Music Festival, in addition to other civilian, commercial, and chartered aircraft. The facility's proximity to the City of Dover and Kent County's event venues makes it an important economic hub.

The base is located to the southeast of the City of Dover. United States DoD property in the area includes Dover Air Force Base and the Civil Air Terminal, the Air Mobility Command Museum, and adjacent housing for personnel. The facility contains two major runways that can accommodate large aircraft. Much of the land surrounding the facility is comprised of wetlands, forests, agricultural land, and roadways (most notably, Route 1 to the west and Bayside Drive to the east). Existing conditions and potential for improved access are discussed in greater detail in the *Dover Air Cargo Freight Access Study*.





Figure 51 (1): A C-5M Super Galaxy on the runway at Dover Air Force Base. Source: Dover AFB Public Affairs.

Figure 52 (r): The entrance to Dover Air Force Base. Source: Dover AFB Public Affairs.





Figure 53 (1): Facility personnel handling cargo at Dover Air Force Base. Source: Dover AFB Public Affairs.

Figure 54 (r): Dover Air Force Base in a snowstorm. Source: Dover AFB Public Affairs.





Figure 55 (l): September 11th ceremony at Dover Air Force Base. Source: Dover AFB Public Affairs.

Figure 56 (r): Dignified transfer at Dover Air Force Base. Source: Dover AFB Public Affairs.





Figure 57 (1): Dover Air Force Base supporting the United States' ongoing partnership with Ukraine. Source: Dover AFB Public Affairs.

Figure 58 (r): Dover Air Force Base organizing humanitarian efforts following the February 2023 earthquake in Türkiye. Source: Dover AFB Public Affairs.



Figure 59: Several aircraft on the runway at the Civil Air Terminal. Source: Delaware River and Bay Authority (<u>link</u>).

Defunct Airports

Flying C Airport (Hartly) [CLOSED]

Flying C Airport, along Judith Road in Hartly, is no longer in operation. The MPO spoke with the property's current owners, and through this conversation, it was revealed that the airport has been closed since roughly 2018. Although the necessary steps had been completed to close the facility, including the filing of forms with the FAA, it is still listed as "operational" in certain online databases (though not on the FAA's website). As a result, pilots occasionally fly over the property expecting to find a place to land. In order to prevent accidental landings where the airstrip used to be, the status of the facility should be clarified within these databases.



Figure 60 (l): Flying C Airport displayed on a topographical map. Source: TopoZone.

Figure 61 (r): Satellite imagery depicting the former location of Flying C Airport. Source: Google Maps.

Henderson Aviation Airport (Felton) [STATUS UNKNOWN]

Henderson Aviation Airport (alternately known as Albanna Aviation Airport) is located along Canterbury Road, just north of the intersection with Midstate Road. It is about 2.5 miles east of downtown Felton. The facility has a long history of aviation in Kent County. According to the airport's former website, it was originally founded in 1972 by Roger Yorde; at the time it was known as Yorde Airport. It was purchased in 1986 by David O. Henderson, who used the facility for many years to restore Piper J-3 Cubs and other aircraft. Eventually the facility was sold to new owners.

The MPO attempted to communicate with the current owners of the facility, but these efforts were unsuccessful. Aside from its presence on the FAA website and other online databases (where it is listed as "operational"), there is no evidence that Henderson Airport is currently accessible to the public. As a result, its status remains unknown, and it was not included in the list of active facilities.



Figure 62 (1): Henderson Airport displayed on a topographical map. Source: TopoZone.

Figure 63 (r): Satellite imagery depicting the former location of Henderson Airport. Source: Google Maps.

Helipads

Dover Motor Speedway (Dover)

FAA ID	DE03
Ownership	Private
Use Type	Private
LZ Type	Grass and hard surface
Number of LZ's	7

Dover Motor Speedway manages both the speedway itself, which is used for NASCAR and other events, and the nearby Woodlands of Dover Motor Speedway, where Firefly Music Festival is held. To provide safety during these events, which attract a large number of attendees, helicopter landing zones are maintained in both of these locations.

Inside the speedway are several helicopter landing zones. Two of these, both unmarked, are patches of grass located on the southeastern side of the track. Not far from these, on the southern side of the track, are two landing zones marked on the pavement. Large circles (about 75 feet in diameter) with the letters "A" and "B" designate their location. The landing zones inside the speedway may be used to bring in NASCAR drivers or performers, or to evacuate patients in the event of a medical emergency.

The festival grounds have three permanent landing zones, located on the eastern side of the property along Persimmon Tree Lane. The concrete landing zones are numbered between "1" and "3". These may be used to evacuate patients suffering from a medical emergency (typically dehydration or a related ailment), though most care is administered on-site unless further treatment is necessary. In addition, there are several alternate landing zones scattered throughout the grounds.



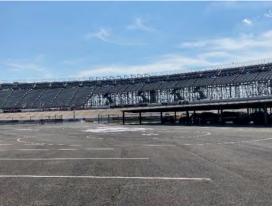


Figure 64 (l): Grass helicopter landing zone at Dover Motor Speedway.

Figure 65 (r): Paved helicopter landing zone at Dover Motor Speedway.





Figure 66 (l): One of the three hard-surface landing zones at the Woodlands of Dover Motor Speedway.

Figure 67 (r): One of the hard-surface landing zones at the Woodlands of Dover Motor Speedway, with the other two landing zones in the background.





Figure 68 (1): A Delaware State Trooper helicopter parked at Dover Motor Speedway. Source: Delaware State Police Aviation Section Facebook page (\underline{link}).

Figure 69 (r): A NASCAR event at Dover Motor Speedway. Source: Dover AFB Public Affairs.

DelDOT Helistop (Dover)

FAA ID	0N5
Ownership	Public
Use Type	Public
LZ Type	Concrete
Number of LZ's	1

The Delaware Department of Transportation (DelDOT) maintains a single concrete helicopter landing zone on its Danner Campus in Dover. This facility is located on the eastern side of the property, in between the parking area and South Bay Road. It is available for public use, and no reservation is needed to land or take off from this location, though it is recommended that the facility manager is contacted beforehand. There are few amenities at this facility, other than a windsock used for gauging the wind.





Figure 70 (l): A ground-level view of the Delaware Department of Transportation helistop.

Figure 71 (r): Satellite imagery depicting the DelDOT helistop from above. Source: Google Maps.

Bayhealth Medical Center Heliport (Dover)

FAA ID	64DE
Ownership	Private
Use Type	Private
LZ Type	Concrete
Number of LZ's	1

Bayhealth Medical Center in Dover contains one confirmed landing zone that is constructed on the hospital's roof. Located on the western side of the hospital, it is distinguished by a white cross and letter "H" inside of a red surface. It has a diameter of 50 feet. This landing zone is connected to a ramp that leads into the hospital. As should be expected from a hospital, the facility is primarily used to transport patients in need of emergency care. It is not accessible to the public and is not used for activities outside of medical transport.

At one time there was a second active landing zone on the building's southwestern corner, but currently it has no visible markings. This landing zone is suspected to be inactive.





Figure 72 (1): The helicopter pad on the roof of Bayhealth Medical Center in Dover, as seen from Governors Ave.

Figure 73 (r): Satellite imagery depicting the Bayhealth Medical Center from above. Source: Google Maps.

Delaware State Police Heliport (Dover)

FAA ID	DE02
Ownership	Public
Use Type	Private
LZ Type	Concrete
Number of LZ's	1

This heliport, used by the Delaware State Police, is located at the police headquarters along Route 13 in Dover. It is used primarily by the State Police Aviation Section for taking off from and landing at the facility in response to emergencies. It is also used for other law-enforcement purposes such as aerial security, photography, maritime rescues, and coordination with ground personnel, as well as pilot training. This facility is not available for public use.

Satellite views also show a helicopter pad at the police facility on Upper King Road, which was formerly used by Delaware State Police Troop 3. In 2015, Troop 3 moved into a new facility on S State Street in Camden, and the facility on Upper King Road has since been used by the Delaware Division of Communication.

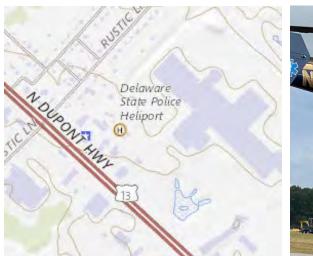




Figure 74 (1): Delaware State Police Heliport displayed on a topographical map. Source: TopoZone.

Figure 75 (r): One of the helicopters used by the Delaware State Police. Source: Delaware State Police Aviation Section Facebook page (link).

Elliott Heliport (Magnolia)

FAA ID	DE24
Ownership	Private
Use Type	Private
LZ Type	Grass
Number of LZ's	1

Elliott Heliport is a private facility located off Sorghum Mill Road in Magnolia, on the eastern bank of Tidbury Creek. Although it is listed as active, the landing zone is unmarked, which means it is difficult to determine the facility's status using satellite imagery. The MPO attempted to connect with Elliott Heliport, but these efforts were unsuccessful. Note that this facility is privately owned and cannot be accessed without permission from the owner.



Figure 76: Elliott Heliport displayed on a topographical map. Source: TopoZone.

Navigational Facilities

Smyrna VORTAC (Leipsic)

Navaid Identifier	ENO
Frequency	111.4
TACAN Channel	51
Morse ID	

This facility is located along Bayside Drive, about 0.5 miles south of Leipsic. Smyrna VORTAC provides two types of navigation for the region: VOR, or VHF Omnidirectional Range, is used for general navigation purposes; and TACAN, or Tactical Air Navigation System, is used exclusively for military purposes. Pilots use the facility to determine their course, first by tuning into its radio frequency, and then pinpointing the aircraft's position in relation to the facility.

In recent years satellite navigation systems such as the Global Positioning System (GPS) are becoming more frequently used than VOR facilities in the United States, and VOR is slowly being phased out by the FAA. However, because it is the only facility of its kind in Kent County, Smyrna VORTAC remains an integral part of local and regional air navigation. At the time of this study's completion, Smyrna VORTAC is not scheduled for discontinuance.

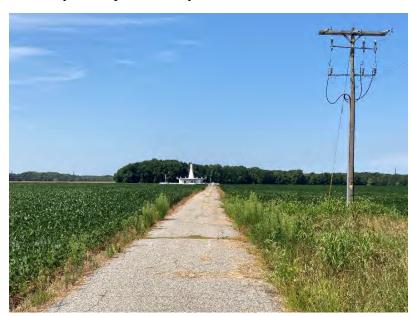


Figure 77: Smyrna VORTAC, viewed from Bayside Drive.

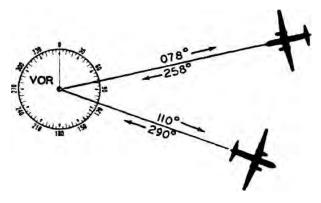


Figure 78: A basic diagram of how VOR technology is used for aerial navigation. Source: studfile.net.



Figure 79: Smyrna VORTAC, represented by a hexagon symbol on VFR sectional charts. Note the frequency, TACAN channel, and Morse ID of the facility are also listed. Source: FAA.

Other Navigational Facilities

Aside from Smyrna VORTAC, the nearest general-purpose navigation facilities are Dupont VORTAC in Wilmington, Delaware; Waterloo VOR/DME in Milton, Delaware; and Woodstown VORTAC in Woodstown, New Jersey. According to FAA statements, Woodstown VORTAC is included in the "Phase 2" list of facilities scheduled for discontinuance; this should take place between FY21 and FY25. There are also several NDB (or Non-Directional Beacon) facilities in the region, including Hadin NDB in Delaware City, Delaware; and Rainbow NDB in Millville, New Jersey.

The US Air Force maintains a TACAN facility at Dover Air Force Base. Unlike the general-purpose VOR facilities, it is exclusively for military use and is not available to the public.

VOR facilities may be used as backup navigation when GPS service is lost, which is why they are still useful in aerial navigation. Conversely, there are times when a navigational facility may be temporarily out of service; in this case, another form of navigation such as GPS or Distance Measuring Equipment (DME) may be used, if available. Pilots can stay updated on outages and other changing conditions by following the most recent Notices to Airmen (or NOTAMs).

Air Navigation Fixes

Air navigation fixes are not physical navigational facilities. Instead, they serve as waypoints along a given flight path, which means they create a route for pilots that is not visible from the ground. Their locations are determined through the intersection of VOR radials, and their fiveletter designations are created by local FAA staff. Approaches and departures are mapped using these fixes; the connections between them act as an aerial "highway" of sorts.

An example from Kent County is the navigation fix known as "CANNY". The coordinates place this navigation fix roughly six miles west of the Town of Woodside, on the north side of Route 10. (As mentioned previously, there is nothing to physically mark its location.) Another example is the navigation fix "DONIL", which is located in Delaware Bay, roughly five miles to the east of Bowers Beach. Dover Air Force Base uses these waypoints in coordinating aircraft departures.

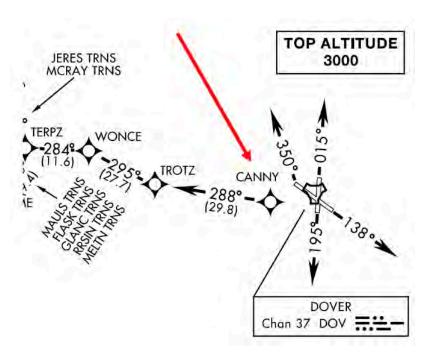


Figure 80: The beginning of the "CANNYI" departure route, with the navigation fix to the west of Dover Air Force Base. Chart is not to scale and does not show ground features. Source: FAA.

Appendix B – Considerations for Compatible Land Use

The following is a list of potential conflicts between airports and adjacent properties. The list will also include "good neighbor" strategies that could be used to reduce the frequency and impact of these conflicts. Finally, there will be some recommended planning and zoning strategies that government entities can undertake.

There is a great deal of existing literature on the subject of compatible land use surrounding air facilities, especially from municipal, state, and federal guidance. Some give a general overview of the topic, while others focus on specific aspects such as noise pollution or wildlife hazards. This appendix will provide relevant sources to aid facility and property owners in seeking more compatible use of their properties.

Effects of Airports on Adjacent Land

Noise Pollution

Noise is one of the most common concerns around air facilities. The sound of an aircraft starting its engines, taking off, and landing creates a great deal of noise, so much so that when at full volume, the noise from an aircraft has been classified as incompatible with certain land uses. (The sound of an Airbus A321 taking off is measured at roughly 140 decibels outside of the airplane; for reference, the FAA considers sound above 65 decibels to be incompatible with residential and other sensitive uses.)

Regular exposure to loud noises of this sort can contribute to hearing loss over time, which is why airport personnel wear protective earmuffs when working outside of an aircraft. Some research also points to increased stress due to loud noises, which can lead to other health effects such as increased risk of cardiovascular disease. However, health effects are ultimately determined by the volume of noise and the length and frequency of exposure. Other consequences of noise pollution include loss of sleep, distractions from daily activities, and interruptions to conversation.

In most cases in Kent County, the impact of noise pollution from small airports will be far less than that of larger facilities, due to the considerably smaller aircraft and the limited air traffic. (This does not apply to Dover Air Force Base and the Civil Air Terminal, which are known to see heavy traffic and house large aircraft.) However, the impact should still be considered by facility owners, and noise from aircraft should be mitigated whenever possible.

Air Pollution

Air facilities are known sources of air pollution, which comes in a variety of types. Pollutants emitted from aircraft engines include carbon monoxide (CO), particulate matter (PM_{2.5} and PM₁₀), sulfur dioxide (SO₂), and ozone (O₃), as well as others. These are classified as "criteria pollutants" by the EPA, which means they are hazardous to human health for various reasons and are regulated at a federal level. For example, CO affects the ability of hemoglobin to transport oxygen, which in turn can lead to dizziness, fatigue, and negative effects on the cardiovascular and central nervous systems. Short-term exposure to PM can cause shortness of breath, and long-term exposure can contribute to asthma and reduced lung function. Similarly, SO₂ exposure has been connected to asthma, bronchitis, and other respiratory diseases. In general, poor air quality can harm "sensitive" populations such as children and people with asthma. Some parts of the country experience air quality issues severe enough to keep people indoors for a length of time.

Ozone is unique in that it is the result of a reaction between several other types of pollutants. While aircraft do not directly emit O₃, they are sources of volatile organic compounds (VOC) and oxides of nitrogen (NOx), which create ground-level ozone when exposed to sunlight. Ozone increases during warmer months when this reaction takes place; conversely, the amount tends to decrease in colder months. Health effects of ozone include coughing, shortness of breath, and damage to cells and organs. DNREC and the EPA maintain several ozone-monitoring sites across Delaware; the site at Killens Pond State Park is the sole location in Kent County that measures ozone. Another site in Dover collects data on PM_{2.5} levels.

Greenhouse gases (GHGs) are another category of pollution; these are byproducts generated through the burning of fuel by combustion engines. In the aviation sector, GHGs mostly come in the form of carbon dioxide (CO₂), though other types are generated as well. While CO₂ may have less of a direct impact on human health than criteria pollutants, GHGs have broader implications that can lead to many negative downstream effects for both humans and the environment. The FAA is currently committed to reducing aviation pollutants so that US GHG emissions are net-zero by 2050. For more information on this goal, please refer to the United States 2021 Aviation Climate Action Plan.⁶

There are other air pollutants that come from the aviation sector, whether directly from aircraft engines or another source. Please refer to the FAA Aviation Emissions and Air Quality Handbook for further information on the various types of air pollutants.⁷

Kent County Airport Inventory / March 2023 Dover Kent County MPO

⁶ United States 2021 Aviation Climate Action Plan. FAA, 2021. https://www.faa.gov/sites/faa.gov/files/2021-11/Aviation Climate Action Plan.pdf.

⁷ Aviation Emissions and Air Quality Handbook: Version 3, Update 1. FAA, 2015. https://www.faa.gov/sites/faa.gov/files/regulations_policies/policy_guidance/envir_policy/airquality_handbook/Air_Quality_Handbook_Appendices.pdf.

Color	Level of Concern	Value	Description of Air Quality
Green	Good	0 to 50	Air quality is satisfactory, and air pollution poses little or no risk.
Yellow	Moderate	51 to 100	Air quality is acceptable. However, there may be a risk for some people, particularly those who are unusually sensitive to air pollution.
Orange	Unhealthy for Sensitive Groups	101 to 150	Members of sensitive groups may experience health effects. The general public is less likely to be affected.
Red	Unhealthy	151 to 200	Some members of the general public may experience health effects; members of sensitive groups may experience more serious health effects.
Purple	Very Unhealthy	201 to 300	Health alert: The risk of health effects is increased for everyone.
Maroon	Hazardous	301 and higher	Health warning of emergency conditions: everyone is more likely to be affected.

Figure 81: The Air Quality Index (AQI) scale used by the EPA to report on air quality. A higher value means air quality is less than satisfactory, and sensitive groups are at an elevated risk. Source: DNREC (<u>link</u>).

Safety Concerns

Access by the general public is an obvious risk for both pilots and pedestrians. If someone were to walk or drive onto a runway, that increases the risk of being struck by an aircraft during takeoff or landing. The taxiway, hangars, and other sections of an air facility are also frequented by aircraft, and the entire vicinity of an air facility is at risk of aircraft crashes and falling debris. This highlights the importance of safety beyond the runway itself.

Access by people and vehicles is more of an issue at publicly accessible airports. This is less so at private air facilities, as the latter facilities are not open to the public and have considerably less foot and vehicle traffic. However, trespassing may still occur in some cases, which is why proper safety measures are instrumental in preventing injury and loss of life at all facilities no matter the ownership.



Figure 82: Illuminated sign in front of the runway at Chorman Airport.

"Good Neighbor" Strategies for Airports

Reduction of Noise Pollution

There are multiple strategies that could be used to address noise pollution, each with its own range of costs and effectiveness. Trees and foliage are a less expensive noise barrier, but they are not as effective as other measures; conversely, walls and certain types of fencing are more expensive, but they are more effective in reducing noise. Topographic barriers such as earthen berms have proven to be another effective measure, though this is not always feasible, as it requires considerably more space than a wall or fence. Airports should work with municipalities and adjacent property owners to determine where noise barriers are most needed and how they can best be implemented.

Soundproofing, or sound insulation, is a similar noise reduction measure. This is important in noise-sensitive facilities such as residences, schools, libraries, and hospitals, where increased noise pollution would be especially disruptive or harmful. Although it is not the responsibility of airport owners to enact these changes in adjacent facilities, they should still coordinate with the municipality and neighbors to determine which direction most aircraft will be traveling; with this information available, the proper soundproofing measures can then be undertaken in critical areas.

Outside of physical changes to the property and structures, pilots can make changes to their aircraft or flight patterns to reduce noise. An example of this is repairing or adjusting the aircraft so that its engines do not generate as much noise. (Safety must also be considered if this is done, as humans and wildlife will be less likely to notice a quieter aircraft when it is taxiing across a facility.) Another strategy is to change the angle of approach, which can make for a quieter landing. This is beneficial in reducing overall noise from the air facility, as landing is one of the loudest moments in an aircraft's journey.

There are general FAA noise standards that aircraft must follow. Noise limits and measurement processes depend on the stage of aircraft; small, propeller-driven craft (referred to as "nonstage") have their own regulations. Please refer to the Code of Federal Regulations for further information on federal noise standards.⁸

Reduction of Air Pollution

The severity of air pollution surrounding an air facility is dependent on many factors, including the type and size of aircraft, the volume of air traffic, the surrounding topography, and the typical wind direction and weather conditions. Not all of these factors are within the control of the facility; however, several steps can be taken to mitigate the impact of pollutants. For one, facility

⁸ "Title 14, Chapter I, Subchapter C, Part 36." Code of Federal Regulations, 2022. https://www.ecfr.gov/current/title-14/chapter-I/subchapter-C/part-36?toc=1.

managers can ensure their aircraft engines are properly maintained so that they are not emitting excess air pollutants. There is also a push by the FAA to remove lead (another criteria pollutant) from aviation fuel by 2030, which will benefit both humans and the environment surrounding air facilities; once this becomes widely available, pilots and facility managers will be encouraged to use this cleaner type of fuel.

Local air facilities should regularly consult the most recent data from DNREC and the EPA when learning about air quality in the area. The Dover monitoring site provides $PM_{2.5}$ data, and the Killens Pond site provides $PM_{2.5}$ and ozone data. Unfortunately, outdoor air-quality monitoring technology is not always readily available to air facilities, as it can be expensive to implement and maintain. In addition, handheld ozone detectors are suitable for indoor use but cannot be used to detect O_3 levels on runways or other outdoor spaces. At this time, site-specific measurements are not commonplace at local air facilities, which is why the broader, regional measurements are the next best option.

One more recommendation is that air facilities closely follow EPA and FAA guidance on air quality in the aviation sector. This will ensure they are in compliance with federal regulations and are releasing as few pollutants as possible; this will help avoid negative impacts on the air quality of nearby communities.

Improving Safety

Airport owners can take a number of measures to keep the public safe around air facilities. Fencing is one way to keep pedestrians from wandering onto the runway, as is often the case at larger airports. This fence should be maintained so that it is difficult to climb through or over the structure. Security cameras, gates, and security personnel are also commonly seen at larger facilities; these are useful in discouraging trespassing but are not as applicable to small airports. Signage, especially when conspicuously placed or properly illuminated, can warn people of the dangers of entering an air facility. However, too many signs can be more distracting than informative. Finally, public outreach and education might be necessary so that the community is aware of the dangers; this could be done in the form of public meetings, PSAs, and ongoing updates from the facility.

Effects of Adjacent Land on Airports

Airspace Obstacles

Natural and manmade features at the end of a runway can present obstacles to pilots that are taking off and landing, as these features might obstruct their approach or reduce visibility. These features can also interfere with military training and other operations. Obstacles could include houses and other buildings; billboards or tall signage; radio towers and antennas; energy infrastructure such as power lines and wind turbines; cranes and other construction equipment; tall trees; and natural terrain. This is not an all-encompassing list, and there are many other features not mentioned that may similarly obstruct the airspace surrounding an air facility.

In Delaware, property owners are required to notify state and local officials of any changes to their property, such as a new building, that will obstruct the airspace of an adjacent air facility. This is explained in the state's Airport Obstruction Regulation under Title 2 of the Delaware Code. Property owners must obtain a building permit from their county or municipality if they are erecting a building, tree, radio tower, silo, or other features within the navigable airspace. Please refer to the Delaware Code for further information on state requirements regarding airspace obstructions.⁹

At the federal level, according to Part 77 under Title 14 of the Code of Federal Regulations, anyone carrying out construction or alterations within an airspace (both on and adjacent to an airport property) must notify the FAA. Changes to airspace may include buildings, power lines, radio towers, antennas, and cranes, as well as other objects. Airspace is determined by the slope of approach and the distance from a runway. Please refer to the Code of Federal Regulations for further information on FAA notices and airspace measurements.¹⁰

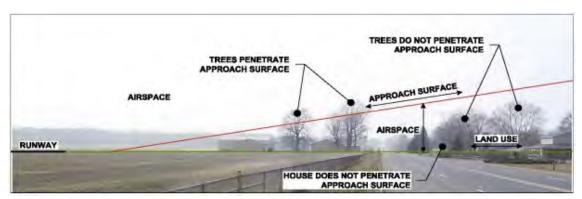


Figure 83: Example of how tall trees can obstruct the approach of an airplane and present a hazard to pilots. Source: FAA, Advisory Circular, p. 2-7 (<u>link</u>).

⁹ "Title 2 Transportation, 2152 Delaware Airport Obstruction Regulation." Delaware Code. https://regulations.delaware.gov/AdminCode/title2/2000/2150/2152.shtml.

¹⁰ "Title 14, Chapter I, Subchapter E, Part 77, Subpart B." Code of Federal Regulations, 2022. https://www.ecfr.gov/current/title-14/chapter-I/subchapter-E/part-77/subpart-B.

One type of airspace obstacle not permanently fixed in place is the Unmanned Aircraft System (UAS), or drone. These remote-controlled devices pose a serious threat to the safety of pilots. At a minimum they can interfere with the ongoing operations of an air facility, which is especially harmful to commercial, military, and public safety aircraft. In the worst-case scenario, drones can damage an aircraft and put the pilots at risk of injury or death. Drone use is typically restricted in controlled airspaces (e.g., the airspace above and around commercial airports), though the same risks are posed towards smaller air facilities, even if there is no such restriction in place. The major UAS restriction in Kent County is the area above and around Dover Air Force Base; authorization is required to fly a drone in this space. For a visual representation of airspaces with UAS restrictions, please refer to the available UAS Facility Maps from the FAA. (Note this should not be used as the sole guidance on UAS restrictions, and anyone operating a drone should consult local and regional regulations before use.)

Visual Obstructions

Impairments to a pilot's vision can emerge from both natural and manmade sources. According to the FAA, visual obstructions may include dust from construction, smoke or smog from industry, glare from bodies of water or solar panels, bright lights from sources such as billboards or amusement parks, and laser lights. As mentioned previously, tall trees and other features are another type of obstruction; they can block a pilot's line of sight on a runway and make landings more challenging. Property owners should make efforts to minimize obstructions if any are present.

Electronic Interference

Interference with electronic navigation can negatively impact a pilot's ability to fly safely and coordinate with ground communications. This sort of hazard is placed into two categories: direct interference (such as using radio equipment at a frequency close to that of a Navaid); and indirect interference (such as erecting structures that physically block the signal of aircraft and navigational facilities). Interference is a serious concern near military facilities such as Dover Air Force Base, which are home to training exercises, freight transport, and other activities that rely on effective communication. In general, property owners should be aware of their proximity to air facilities, especially navigational facilities such as VOR, so that they do not interfere with proper navigation and compromise pilot safety.

It is also possible that energy infrastructure such as wind turbines can lead to direct interference with radar and other navigational technology. According to Dover Air Force Base's *Partners in One Community* publication: "Wind farms and individual wind turbines can interfere with the radar capabilities of the base and, as a result, diminish the base's ability to manage air traffic,

¹¹ "UAS Facility Maps." FAA, 2022. https://www.faa.gov/uas/commercial operators/uas facility maps.

monitor weather, and perform security surveillance. Furthermore, wind turbines and associated infrastructure have the potential to impose tall structure flight restrictions on pilots and limit their ability to perform low-flight operations and training." While the specific implications of wind turbines on navigation are still being studied, their potential for negative impacts should be kept in mind.

Wildlife Hazards

According to FAA findings, the number of annual wildlife strikes by aircraft has increased dramatically between 1990 (about 1,800 strikes) and 2018 (about 16,000 strikes). The overwhelming majority are caused by birds, which accounted for over 95% of 2020 strikes. (Mourning doves, killdeer, and barn swallows are the most frequently struck bird species according to 30-year data, but Canada geese are the most frequently struck large bird species and one of the costliest to aircraft.) Reasons for the rise in strikes have included increasing populations of large birds, increasing airport use at many facilities, and quieter jet engines that make it difficult for birds to detect the aircraft, in addition to other factors. (Note: Most of the FAA-reported strikes involved commercial aircraft, rather than small, private aircraft.) Delaware is located along the Atlantic Flyway, which makes it an important stop for migratory birds. This significantly increases the likelihood of bird strikes during annual migrations. For the full statistics on wildlife strikes by aircraft, please refer to the 2021 report by the FAA and the USDA. ¹²

Farms can often increase the risk of wildlife strikes around airports. Crops such as oats, alfalfa, corn, and apples are known attractants, as they are sometimes used as a source of food for deer and other wildlife. Feedlots can often attract flocks of small birds such as starlings. Waste from landfills or accumulated food waste can attract gulls, vultures, and other scavenging birds. Farms might attract wildlife for other reasons; for example, the cover provided by crop fields are desirable to small mammals, which in turn attracts predatory mammals and birds. Open fields are also desirable to migrating Canada geese and other large birds, and they may be used by killdeer as nesting grounds. This increases the likelihood of wildlife strikes by aircraft, either on the runway or in the air. For these reasons, it is recommended by the FAA that common attractant crops not be grown near airports.

¹² Wildlife Strikes to Civil Aircraft in the United States, 1990-2020. FAA, 2021. https://nbaa.org/wp-content/uploads/aircraft-operations/safety/in-flight-safety/wildlife-strike-response/Wildlife-Strikes-to-Civil-Aircraft-1990-2020.pdf.





Figure 84 (1): Snow geese migrate to Delaware in great numbers each winter. These waterfowl present a significant risk to aircraft in Kent County due to the large numbers of birds found in each flock. Source: delaware.gov (link).

Figure 85 (r): Deer are one of the most common wildlife hazards for aircraft, particularly on runways. Due to their size, they have the potential to severely damage approaching aircraft, and even result in injury and loss of life. As such, they are a serious concern for pilots. Source: delaware.gov (link).

"Good Neighbor" Strategies for Adjacent Land

Airspace Management

Several steps can be taken by property owners to reduce obstructions in an air facility's navigable airspace. As mentioned previously, property owners must ensure that officials are aware of any changes to their property that will create obstructions. In addition, obstacles should be removed or adjusted so that the safety of pilots is not compromised. An example of this is cutting down or trimming trees that extend into the airspace. (Following FAA guidance on airspace obstructions is essential when determining impacts from neighboring properties.) Tools such as vegetation inventories are available for understanding the extent of obstructions and how these features can be properly managed. Finally, the use of UAS should be restricted or closely monitored on the properties surrounding air facilities. The role of zoning will be discussed in a later part of this appendix.

Visual and Electronic Strategies

Visual obstructions come in a variety of forms, and so it can be difficult to determine impairments on a given property. As mentioned previously, obstructions could include ponds, bright lights, industrial smoke, or other sources. Property owners should coordinate with the nearby air facility to decide if there are any existing visual obstructions coming from their property, and if something can be done to mitigate their negative impacts.

Electronic interference can also be mitigated. If broadcasting equipment is used near an air facility or Navaid, users should refrain from broadcasting at a frequency that will interfere with necessary communications. Other electronic equipment also has the potential to cause interference, but this depends on the type and location of the equipment. Indirect interference can be avoided by refraining from building new structures (especially tall buildings) that would block communication signals.

Wildlife and Habitat Management

The airports of Kent County are often built adjacent to cropland, which means it is not possible to completely remove attractants from the vicinity. However, several steps can be taken by neighboring property owners to deter the presence of wildlife and reduce attractants. Most importantly, if a property is being used to produce crops, property owners should be mindful of the impact their land has on the presence of wildlife. Fences may be set up in between the airport and the cropland, which reduces access by deer and other terrestrial mammals. The draining or covering of ponds can reduce the number of ducks, geese, and other waterfowl. If wetland mitigation must be carried out, establishing new wetlands outside of the airport's vicinity will benefit both pilots and wildlife, as it draws the wildlife to a safer location. Covering or removing landfill waste (especially food waste) will deter the presence of scavengers. Finally, the monitoring of species and populations can provide a greater understanding of which measures are needed in specific circumstances.

These are a few of the wildlife management measures property owners can take to benefit neighboring air facilities. For further information on these measures, please refer to the wildlife hazard management manual by the FAA. ¹³

Planning and Zoning Strategies for Government

Government entities are another stakeholder group involved in the aviation sector. These include local governments, elected officials, planning and zoning offices, MPOs, and others. The following strategies are not always applicable, but in many cases, they can help improve compatible use for air facilities.¹⁴

Local and Regional Plans

A comprehensive plan is one type of document that should take air facilities into consideration. Focused on local-level planning, this document can build on existing airport master plans to

¹³ Wildlife Hazard Management at Airports: A Manual for Airport Personnel. FAA, 2005.
https://www.faa.gov/sites/faa.gov/files/airports/environmental/policy_guidance/2005_FAA_Manual_complete.pdf.
¹⁴ Advisory Circular: Airport Land Use Compatibility Planning. FAA, 2021.
https://www.faa.gov/documentLibrary/media/Advisory_Circular/draft-150-5190-4B.pdf.

describe the current state of air facilities and highlight the community's vision for its airports. A second document relevant to air facilities is the long-range transportation plan (or LRTP), which looks ahead as far as 20 years for a state or region. State DOTs, MPOs, and other involved parties should use this document as an opportunity to study the networks of transportation in the area and determine what is needed to improve conditions. These are a couple examples of planning documents that are connected to aviation.

Zoning Techniques

There are different types of zoning that can be applied to air facilities and the land surrounding them. The first type is compatible use zoning, which can help in limiting incompatible uses around an air facility. Although this is a common strategy, it is not intended to remove all hazards from the area. Overlay zoning, another type, complements the existing zoning and adds specific regulations for noise level, building height, and other relevant factors. It can also be used to limit hazards such as smoke or water vapor, which can obstruct a pilot's vision. A third strategy is extraterritorial zoning, which extends well beyond the air facility and creates a common zoning throughout the area. This is difficult to implement due to the wide range of stakeholders and varying needs, which is why it should only be pursued under specific circumstances. Finally, a municipality might choose to enact building codes, which can be useful for requiring soundproofing on adjacent buildings. The level of soundproofing is based on a goal known as a noise level reduction (NLR) goal, which varies depending on the needs of the area and the noise generated by an air facility.

Coordination

One of the most important tools for local and regional government is coordination between parties. These efforts include the establishing of zoning regulations, the production of local and regional plans, and the opportunity for stakeholders to voice their thoughts. MPOs are a suitable connection between stakeholders, as they operate at a regional level and are frequently in contact with the state DOT and municipalities. Continued engagement is crucial, and no stakeholder should be left out of the process, especially those most affected by the changes taking place.

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