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DRAFT
ENVIRONMENTAL ASSESSMENT
FOR THE PURCHASE OF 100 ACRES OF
PRIVATELY-OWNED LAND
DOVER AFB, DELAWARE



PREPARED FOR:
Department of the Air Force

May 2018

1 **FINDING OF NO SIGNIFICAN IMPACT**
2 **FINDING OF NO PRACTICABLE ALTERNATIVE**
3 **Environmental Assessment**
4 **for the Purchase of 100-acres of Privately Owned Land**
5 **Dover Air Force Base, Delaware**
6

7 Pursuant to the provisions of the National Environmental Policy Act (NEPA), Title 42 United
8 States Code (U.S.C.) Sections 4321 to 4347, implemented by Council of Environmental Quality
9 (CEQ) regulations, Title 40, *Code of Federal Regulations (CFR)* 1500-1508 (CEQ 2005) and 32
10 *CFR* 989 *Environmental Impact Analysis Process (EIAP)*, the Dover Air Force Base (AFB) has
11 prepared this Environmental Assessment (EA) to evaluate the potential environmental
12 consequences associated with purchasing approximately 100 acres of private property located
13 adjacent to the Dover AFB fenceline.

14 The purpose of the Proposed Action is to reduce security risks associated with the need to escort
15 civilian property owners through Dover AFB for access to their property. The purchase of
16 approximately 100 acres of privately-owned land would reduce security risks by eliminating the
17 need to escort civilian property owners. Purchase of the property would also increase the Dover
18 AFB buffer zone, which would also increase security at the base.

19 The EA, incorporated by reference into the finding, considers all potential impacts of the Proposed
20 Action including the No Action Alternative. The EA also considers cumulative environmental
21 impacts with other projects at Dover AFB.

22 The determination of environmental resource areas to be analyzed versus those not carried forward
23 for detailed analysis were identified through a preliminary screening process. The Proposed
24 Action and alternatives including the No Action Alternative, would have minimal or no impacts
25 on several resource areas. These include air quality, airspace, hazardous materials and waste
26 management, infrastructure, noise, and socioeconomics and environmental justice. Therefore,
27 these resource areas were not carried forward for detailed analysis in the EA.

28 A preliminary analysis on environmental effects determined that the Proposed Action and
29 alternatives may have greater than negligible effects on several resource areas including aesthetics
30 and visual resources, biological resources, cultural resources, geological resources, health and
31 safety, land use, and water resources.

32 **Proposed Action – Purchase Approximately 100 Acres of Privately-Owned Land by Dover**
33 **AFB**

34 Under the Proposed Action Dover AFB would purchase five parcels of privately-owned land
35 totaling approximately 100 acres located west of the existing fenceline between Dover AFB and
36 the St. Jones River. The Proposed Action does not involve any construction or demolition
37 activities. Dover AFB has no intention to develop the private property, however, any activities
38 related to the development of the private property will be addressed under separate NEPA
39 documentation. The Proposed Action and the Alternative Action would meet the established
40 purpose and need for action. However, the Proposed Action would provide greater benefit to
41 security procedures as it would allow Dover AFB to maintain ownership and control over the
42 property. This alternative is the preferred alternative.

43 The State of Delaware Department of Transportation (DelDOT) recently removed a pedestrian
44 bridge, eliminating all other access to the private property except through Dover AFB. The
45 pedestrian bridge was located in a rural area east of Sorghum Mill Road over the St. Jones River.

1 The bridge's substructure was experiencing undermining, settlement, and general deterioration and
2 had been closed since 2012 before its removal. In keeping with DelDOT's mission to provide a
3 safe transportation network and because there are no plans to allow public use of the property on
4 the side of the river adjacent to the Dover AFB, DelDOT proposed the removal of the bridge in its
5 entirety with no plans to replace it. Removal was completed in the fall of 2016 (DelDOT 2017).
6 As a result, owners must be escorted by Security Forces personnel through Dover AFB in order to
7 access their property. This situation increases security risks at Dover AFB by requiring Security
8 Forces to escort un-cleared civilians and their vehicles, which takes resources away from the
9 primary mission of maintaining security at the base. Purchase of the property by Dover AFB
10 would eliminate the need to escort these property owners. Purchase of the property would also
11 increase the Dover AFB buffer zone, would also increase security at the base.

12 **Alternative Action – Purchase of Privately-Owned Land through the U.S. Department of**
13 **Defense's Readiness Environmental Protection Initiative Program**

14 Under this Alternative Action, Dover AFB would pursue a third-party purchase of the property
15 through the U.S. Department of Defense (DoD)'s Readiness Environmental Protection Initiative
16 (REPI) Program. The REPI Program protects military missions by helping remove or avoid land
17 use conflicts near installations. Under this alternative, Dover AFB would coordinate with a third
18 party that may include a federal or state agency to purchase the parcels of property with the
19 agreement that the property would not be developed.

20 **No Action Alternative**

21 Under the No Action Alternative, Dover AFB would not purchase the privately-owned property
22 and owners would continue to be escorted by Security Forces personnel to access their properties.
23 This situation increases security risks at Dover AFB by requiring Security Forces to escort un-
24 cleared civilians and their vehicles, which takes resources away from the primary mission of
25 maintaining security at the base.

26 **Environmental Effects**

27 The Proposed Action does not include any construction, ground disturbance, or other activities
28 that may impact resources carried forward for analysis. Transfer of the parcels to federal
29 ownership would result in a beneficial effect to the site, as it would be subject to jurisdiction under
30 federal laws and regulations that protect cultural resources and consider impacts from undertakings
31 to eligible archaeological properties. The Proposed Action would reduce safety risks because there
32 would no longer be a need to escort landowners through Dover AFB property, thus allowing
33 Security Forces to focus on their primary mission of maintaining security at the base.

34 ***Aesthetics and Visual Resources***

35 Under the Proposed Action, no demolition or construction would occur; therefore, there would be
36 no impacts to aesthetics and visual resources.

37 ***Biological Resources***

38 No federally threatened and endangered species are known to exist on the private property. Under
39 the Proposed Action, no demolition or construction would occur; therefore, there would be no
40 impacts to vegetation, wildlife, or threatened and endangered species.

41 ***Cultural Resources***

42 Because no development or construction is planned within the region of influence once Dover
43 AFB has acquired the parcels, no impacts to site 7K-D-1's physical integrity, location, or setting

1 would occur under the Proposed Action. This would also be the case for any potentially buried
2 archaeological deposits.

3 Dover AFB has determined that the Proposed Action would have no impact on historic properties
4 under Section 106 of the NHPA. Dover AFB has consulted with the Delaware SHPO on this
5 determination and the Delaware SHPO indicated that should the private property be purchased,
6 additional information would be required before any ground disturbing activity may take place, or
7 any determination of effect may be issued (Appendix A). In addition, tribal consultation was
8 initiated by Dover AFB with the Delaware Nation and Delaware Tribe of Indians (Lenape) to
9 determine the presence of tribally-significant resources within the ROI. Delaware Nation
10 concurred with Dover AFB's proposed plan (Appendix A).

11 ***Geological Resources***

12 Under the Proposed Action, no demolition or construction would occur; therefore, there would be
13 no impacts to geological resources.

14 ***Health and Safety***

15 The Proposed Action would reduce safety risks because there would no longer be a need to escort
16 landowners through Dover AFB property, thus allowing Security Forces to focus on their primary
17 mission of maintaining security at the base.

18 ***Land Use***

19 Under the Proposed Action the current zoning would likely be changed from an Agricultural
20 Conservation Residential District to Military Conservation Lands.

21 ***Water Resources***

22 Under the Proposed Action, no demolition or construction would occur and there would be no
23 impacts to surface water, groundwater, wetlands, or floodplains. Dover AFB submitted a negative
24 consistency determination to Delaware Department of Natural Resources and Environmental
25 Control (DNREC) to satisfy the federal coastal zone consistency requirement. DNREC concurred
26 with the determination (Appendix B).

27 **FINDING OF NO SIGNIFICANT IMPACT**

28 Based upon my review of the facts and analyses contained in the attached EA, conducted under
29 the provisions of NEPA, CEQ Regulations and 32 CFR Part 989, I conclude that implementing
30 the preferred alternative to purchase of approximately 100 acres of privately-owned land by Dover
31 AFB, will not have a significant environmental impact, either directly or cumulatively in
32 conjunction with other projects at Dover AFB. Accordingly, an Environmental Impact Statement
33 is not required. The signing of this Finding of No Significant Impact completes the environmental
34 impact analysis process.

35

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37

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TBD
Commander, 436th Mission Support Group

Date

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1 **ACRONYMS AND ABBREVIATIONS**

2	ACHP	Advisory Council on Historic Preservation
3	AICUZ	Air Installation Compatible Use Zone
4	AIRFA	<i>American Indian Religious Freedom Act</i>
5	AFB	Air Force Base
6	AFI	Air Force Instruction
7	AFMAN	Air Force Manual
8	ATFP	anti-terrorism and force protection
9	CAA	<i>Clean Air Act</i>
10	CEQ	Council on Environmental Quality
11	CFR	<i>Code of Federal Regulations</i>
12	CWA	<i>Clean Water Act</i>
13	CZMA	Coastal Zone Management Act
14	DoD	U.S. Department of Defense
15	DoDI	Department of Defense Instruction
16	DelDOT	State of Delaware Department of Transportation
17	EA	Environmental Assessment
18	ECSI	Environmental Consulting Services, Inc.
19	EIAP	Environmental Impact Analysis Process
20	EM	Engineer Manual
21	EO	Executive Order
22	ERP	Environmental Restoration Program
23	ESA	Endangered Species Act
24	FAA	Federal Aviation Administration
25	FONSI	Finding of No Significant Impact
26	FR	<i>Federal Register</i>
27	ICRMP	Integrated Cultural Resources Management Plan
28	IICEP	Intergovernmental Coordination for Environmental Planning
29	IPaC	Information for Planning and Consultation
30	MBTA	<i>Migratory Bird Treaty Act</i>
31	NEPA	<i>National Environmental Policy Act</i>
32	NHPA	<i>National Historic Preservation Act</i>
33	NPDES	National Pollutant Discharge Elimination System
34	RCRA	<i>Resource Conservation Recovery Act</i>
35	REPI	Readiness Environmental Protection Initiative
36	ROI	region of influence
37	SARA	Superfund Amendments and Reauthorization Act
38	SHPO	State Historic Preservation Officer
39	TMDL	total maximum daily load
40	USAF	United States Air Force
41	U.S.C.	United States Code
42	USACE	U.S. Army Corps of Engineers
43	USEPA	U.S. Environmental Protection Agency
44	USFWS	U.S. Fish and Wildlife Service
45	WRA	Wetlands Research Associates, Inc.
46		

1 **1.0 PURPOSE AND NEED FOR ACTION**

2 **1.1 INTRODUCTION**

3 Pursuant to the provisions of the National Environmental Policy Act (NEPA), Title 42 United
4 States Code (U.S.C.) Sections 4321 to 4347, implemented by Council of Environmental Quality
5 (CEQ) regulations, Title 40, *Code of Federal Regulations (CFR)* 1500-1508 (CEQ 2005) and 32
6 *CFR* 989 *Environmental Impact Analysis Process (EIAP)*, the Dover Air Force Base (AFB) has
7 prepared this Environmental Assessment (EA) to evaluate the potential environmental
8 consequences associated with purchasing approximately 100 acres of private property located
9 adjacent to the Dover AFB fenceline.

10 Dover AFB is comprised of approximately 3,900 on-base acres located within the city limits of
11 Dover in Kent County, Delaware (Figure 1.1-1). Other land under Dover AFB jurisdiction includes
12 three off-base facilities: (1) the Port Mahon Petroleum, Oil, Lubricants Annex; (2) a small parcel
13 that accommodates a Next Generation Radar site; and (3) the Eagle Creek Golf Club.

14 **1.2 PURPOSE OF THE PROPOSED ACTION**

15 The purpose of the Proposed Action is to reduce security risks associated with the need to escort
16 civilian property owners through Dover AFB for access to their property.

17 **1.3 NEED FOR THE PROPOSED ACTION**

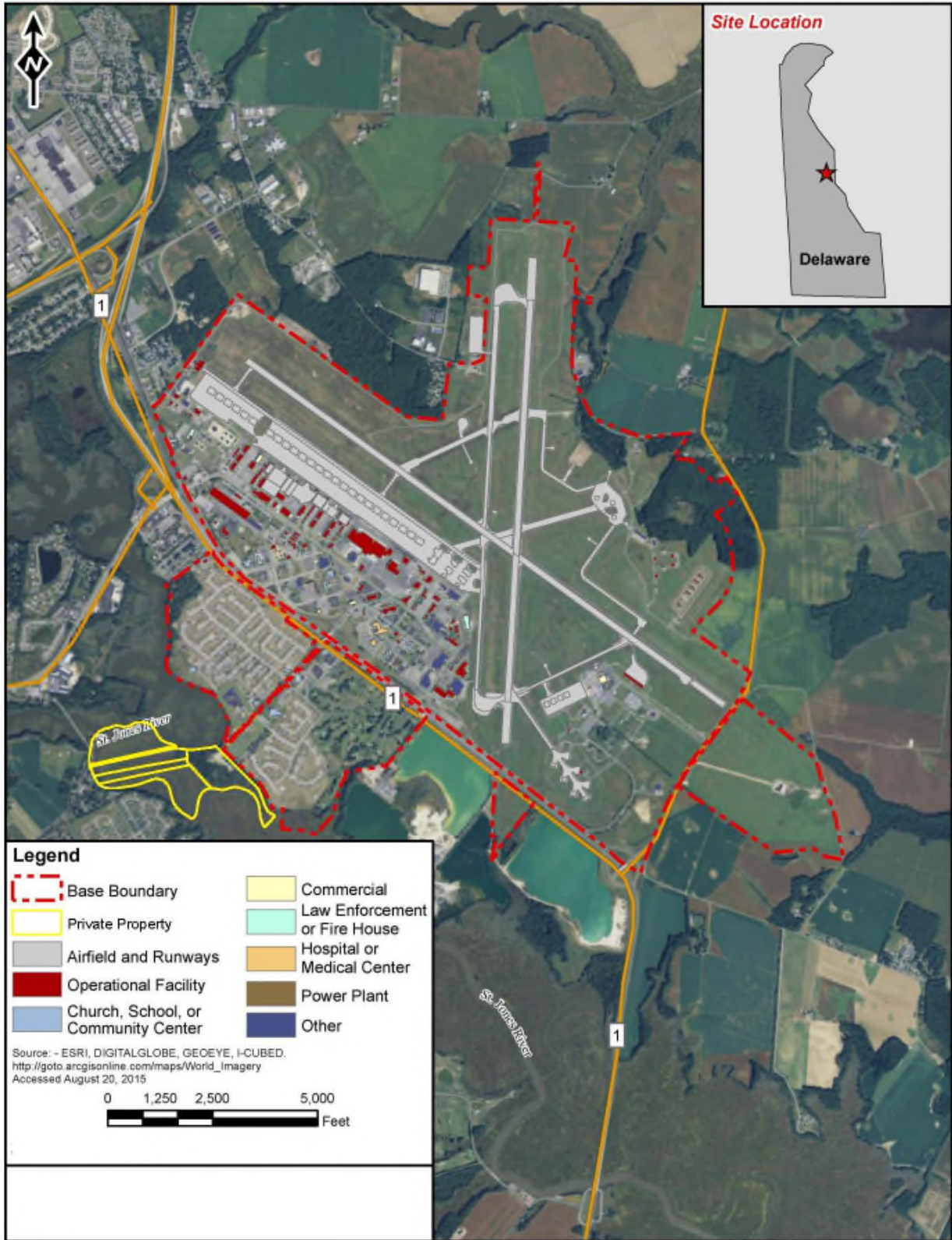
18 The State of Delaware Department of Transportation (DelDOT) recently removed a pedestrian
19 bridge, eliminating all other access to the private property except through Dover AFB. The
20 pedestrian bridge was located in a rural area east of Sorghum Mill Road over the St. Jones River.
21 The bridge's substructure was experiencing undermining, settlement, and general deterioration and
22 had been closed since 2012 before its removal. In keeping with DelDOT's mission to provide a
23 safe transportation network and because there are no plans to allow public use of the property on
24 the side of the river adjacent to the Dover AFB, DelDOT proposed the removal of the bridge in its
25 entirety with no plans to replace it. Removal was completed in the fall of 2016 (DelDOT 2017).

26 The Proposed Action is needed because the only access to the privately-owned land is through
27 Dover AFB boundaries which poses a security risk. Security Forces personnel must escort un-
28 cleared civilians and their vehicles through Dover AFB, which takes resources away from the
29 primary mission of maintaining security at the base.

30 **1.4 DECISION TO BE MADE**

31 Based on the analysis in the EA, the USAF will make one of three decisions regarding the Proposed
32 Action:

- 33 • Choose the alternative that best meets the purpose and need and sign a Finding of No
34 Significant Impact (FONSI), allowing implementation of the selected alternative;
- 35 • Initiate preparation of an environmental impact statement (EIS) if it is determined that
36 significant impacts would occur with implementation of the Proposed Action; or
- 37 • Select the No Action Alternative, whereby the Proposed Action would not be
38 implemented.



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Figure 1.1-1. Regional Map of Dover AFB

1 **1.5 SUMMARY OF KEY ENVIRONMENTAL REQUIREMENTS**

2 **1.5.1 National Environmental Policy Act**

3 NEPA requires federal agencies to consider the potential environmental consequences of proposed
4 actions in their decision-making process. The intent of NEPA is to protect, restore, and enhance
5 the environment through well-informed federal decisions. The CEQ was established under NEPA
6 to implement and oversee federal policy in this process. The CEQ subsequently issued regulations
7 for implementing the procedural provisions of NEPA (40 CFR 1500-1508).

8 The activities proposed in this document constitute a new federal action and must therefore be
9 evaluated in accordance with NEPA. To comply with NEPA, as well as other pertinent
10 environmental requirements, the decision-making process for this action includes the development
11 of documentation to address environmental impacts related to the proposed activities. Each federal
12 agency has its own procedures for implementing NEPA. The United States Air Force (USAF)
13 implementing procedures are contained in Air Force Instruction (AFI) 32-7061, *The*
14 *Environmental Impact Analysis Process* which incorporates 32 CFR 989 et seq.

15 **1.5.2 Additional Environmental Statutes and Regulations**

16 Prior to implementing the actions described in this document, permitting and compliance with
17 applicable statutes and regulations would occur. The following is a list of AFIs, Executive Orders
18 (EOs), Acts, Air Force Manual (AFMAN), Engineer Manuals (EMs), *CFRs*, Department of
19 Defense Instructions (DoDIs), and Technical Orders applicable to the Proposed Action:

- 20 • 42 U.S.C. 4321 et seq., NEPA;
- 21 • 33 U.S.C., 1251 et seq., *Clean Water Act (CWA)*;
- 22 • 42 U.S.C., 7401 et seq., *Clean Air Act (CAA)* (1963, amended in 1990);
- 23 • 7 U.S.C. 136, 16 U.S.C. 1531 et seq., *Endangered Species Act (ESA)*;
- 24 • 16 U.S.C. 703 et seq., *Migratory Bird Treaty Act (MBTA)*;
- 25 • 42 U.S.C. 6901 et seq., *Resource Conservation Recovery Act (RCRA)*;
- 26 • 29 CFR, *Occupational Safety and Health Standards*;
- 27 • 32 CFR 989, *Environmental Impact Analysis Process*;
- 28 • 40 CFR 93.153, *Air Conformity Determination*;
- 29 • 40 CFR 1500 through 1508, CEQ NEPA regulations;
- 30 • 54 U.S.C. 300101 et seq., *National Historic Preservation Act (NHPA)*;
- 31 • EOs 11988 and 11990, *Floodplain Management and Protection of Wetlands*;
- 32 • EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and*
33 *Low-Income Populations*;
- 34 • EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*;
- 35 • EO 13423, *Strengthening Federal Environmental, Energy, and Transportation Management*;
- 36 • EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*;
- 37 • EO 13175, *Consultation and Coordination with Indian Tribal Governments*;

- 1 • AFI 11-202, *General Flight Rules*;
- 2 • AFI 13-201, *Airspace Management*;
- 3 • AFI 13-212, *Range Planning and Operations*;
- 4 • AFI 32-7062, *Air Force Comprehensive Planning*;
- 5 • AFI 32-7064, *Natural Resources Management*;
- 6 • AFI 32-7065, *Cultural Resources Management*;
- 7 • DoDI 4165.57 and AFI 32-7063, Air Installation Compatible Use Zone (AICUZ)
- 8 Programs; and
- 9 • U.S. Army Corps of Engineers (USACE) EM 385-1-1, *General Safety Requirements*.

10 **1.6 INTERAGENCY AND INTERGOVERNMENTAL COORDINATION AND**
11 **CONSULTATIONS**

12 Federal, state, and local agencies with jurisdiction that could be affected by implementation of the
13 Proposed Action were notified and consulted during the development of this EA (Appendix A).

14 Dover AFB provides opportunities for the public to participate in the NEPA process to promote
15 open communication and improve their decision-making process. All persons and organizations
16 identified as having potential interest in the Proposed Action and alternatives are encouraged to
17 participate in the process.

18 EO 12372, *Intergovernmental Review of Federal Programs*, requires intergovernmental
19 notifications prior to making any detailed statement of environmental effects. Through the process
20 of Interagency and Intergovernmental Coordination for Environmental Planning (IICEP), the
21 proponent must notify concerned federal, state, and local agencies and allow them sufficient time
22 to evaluate potential environmental effects of a Proposed Action.

23 NEPA (40 CFR 1500-1508) and 32 CFR Part 989 require public review of the EA before approval
24 of the FONSI and implementation of the Proposed Action. A Notice of Availability for public
25 review of the Draft EA was published in the *Delaware State News*. The Draft EA was made
26 available for public review at the Kent County Public Library and the Dover Public Library.
27 Through the IICEP process, Dover AFB notified relevant federal, state, and local agencies and
28 allowed them 30 days to make known their environmental concerns specific to the Proposed
29 Action. Appendix A of the EA contains the list of agencies consulted during this analysis and
30 copies of correspondence, responses, and concurrences (as applicable).

1 **2.0 DESCRIPTION OF PROPOSED ACTION AND ALTERNATIVES**

2 **2.1 OVERVIEW**

3 USAF regulations (32 CFR 989) implementing NEPA require rigorous exploration and objective
4 evaluation of all reasonable alternatives for a federal action. Each alternative must be feasible,
5 reasonable, and meet the stated purpose and need. The following section details: (1) the elements
6 of the Proposed Action; (2) identifies alternatives that meet the purpose and need; and, (3) in
7 accordance with CEQ regulations (40 CFR 1502.14[d]), includes a No Action Alternative that
8 serves as a baseline against which environmental impacts of the Proposed Action and alternatives
9 are measured.

10 NEPA and the CEQ regulations mandate the consideration of reasonable alternatives to the
11 Proposed Action. “Reasonable alternatives” are those that also could be utilized to meet the
12 purpose of and need for the Proposed Action. Per the requirements of 32 CFR 989, the USAF
13 EIAP regulations, selection standards are used to identify alternatives for meeting the purpose and
14 need for the USAF action.

15 The Proposed Action must meet the following selection standards:

- 16 • The alternative must reduce security risks and eliminate the need to escort civilian
17 personnel through Dover AFB.
- 18 • The alternative must make as much use as possible of existing land and facilities, avoid
19 creating or maintaining redundant space or infrastructure, and avoid or minimize
20 operational inefficiencies.
- 21 • The alternative must be consistent with known man-made and natural development
22 constraints (e.g., explosive quantity-safety distances, imaginary surfaces associated with
23 the installation’s runways, or wetlands; the relevant constraints may vary depending on
24 the project).

25 **2.2 PROPOSED ACTION**

26 Under the Proposed Action Dover AFB would purchase five parcels of privately-owned land totaling
27 approximately 100 acres located west of the existing fenceline between Dover AFB and the St. Jones
28 River (Figure 2.2-1). The Proposed Action does not involve any construction or demolition
29 activities. Dover AFB has no intention to develop the private property, however, any activities
30 related to the development of the private property will be addressed under separate NEPA
31 documentation. The Proposed Action and the Alternative Action would meet the established
32 purpose and need for action. However, the Proposed Action would provide greater benefit to
33 security procedures as it would allow Dover AFB to maintain ownership and control over the
34 property. This alternative is the preferred alternative. A summary of the various parcels within the
35 Proposed Action is provided in Table 2.2-1.



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Figure 2.2-1. Land Purchase Parcels

Table 2.2-1. Proposed Land Parcels for Purchase

Parcel	Current Owner	Property Location	Acres
1	Private Owner	North and south of Old Lebanon Rd. to Little Creek	35.0
2	Private Owner	South Lebanon Rd.	7.5
3	Private Owner	West side of fenceline and adjacent to outer loop of Dover AFB	19.3
4	State of Delaware	Roadway/Bike Path on the east side of St. Jones River	14.9
5	Private Owner	South of Old Lebanon Rd. and north of St. Jones River	23.3

Source: Kent County 2017.

The Proposed Action and alternatives are designed to address the purpose identified in Section 1.2 and the need described in Section 1.3.

2.3 ALTERNATIVE ACTION

Under this Alternative Action, Dover AFB would pursue a third-party purchase of the property through the U.S. Department of Defense (DoD)’s Readiness Environmental Protection Initiative (REPI) Program. The REPI Program protects military missions by helping remove or avoid land use conflicts near installations. Under this alternative, Dover AFB would coordinate with a third party that may include a federal or state agency to purchase the parcels of property with the agreement that the property would not be developed.

2.4 NO ACTION ALTERNATIVE

Under the No Action Alternative, Dover AFB would not purchase the privately-owned property and owners would continue to be escorted by Security Forces personnel to access their properties. Under this alternative, the security issues described in Sections 1.2 and 1.3 would not be resolved.

2.5 ALTERNATIVES ELIMINATED FROM FURTHER CONSIDERATION

Alternatives that do not meet the purpose and need and/or selection standards were eliminated from further consideration. Such alternatives are described below.

Purchase of Certain Parcels. Under this alternative Dover AFB would not purchase all five parcels, but would only purchase certain parcels. While this alternative may reduce the number of civilian personnel accessing the private property and the frequency the private property is accessed, it would not eliminate the security risks as remaining property owners would still need access to their property.

2.6 RESOURCES NOT CARRIED FORWARD FOR DETAILED ANALYSIS

Based on the scope of the Proposed Action, issues with minimal or no impacts were identified through a preliminary screening process. The following describes those resource areas not carried forward for detailed analysis, along with the rationale for their elimination. Regardless of the alternative selected, the following resources would not be affected by the Proposed Action and are not discussed in detail in this EA.

2.6.1 Air Quality

Air quality is determined by the type and concentration of pollutants in the atmosphere, the size and topography of the air basin and the prevailing meteorological conditions. The significance of

1 a pollutant concentration in a region or geographical area is determined by comparing it to federal
2 and/or state ambient air quality standards (USAF 2014c). The Proposed Action does not include
3 any new sources of air emission.

4 Dover AFB is located in Kent County. Kent County is designated as an attainment area for all
5 other criteria pollutants. The Proposed Action would not result in a net change in emissions;
6 therefore, air quality was not carried forward for detailed analysis in this EA.

7 **2.6.2 Airspace**

8 Airspace management is defined as the direction, control, and handling of flight operations in the
9 “navigable airspace” that overlies the geopolitical borders of the United States and its territories.
10 “Navigable airspace” is airspace above the minimum altitudes of flight prescribed by regulations
11 under U.S.C Title 49, Subtitle VII, Part A, and includes airspace needed to ensure safety in the
12 take-off and landing of aircraft (49 U.S.C. § 40102).

13 The Proposed Action would not include the creation of any new Federal Aviation Administration
14 (FAA)-designated controlled airspace or the re-designation of any existing airspace. All FAA-
15 designated controlled airspace would remain unchanged when compared to existing conditions.
16 There would be no changes in flight operations that would conflict with existing civilian,
17 commercial, or military use of the regional airspace. Current airspace-management procedures
18 would continue. Therefore, airspace was not carried forward for detailed analysis in this EA.

19 **2.6.3 Hazardous Materials and Waste**

20 The terms “hazardous materials” and “hazardous waste” refer to substances that, because of their
21 quantity, concentration, or physical, chemical, or infectious characteristic, may present substantial
22 danger to public health or the environment when released into the environment.

23 Products containing hazardous materials that may result in the generation of hazardous waste
24 include aviation fuel, adhesives, sealants, conversion coatings, corrosion preventative compounds,
25 hydraulic fluids, lubricants, oils, paints, polishes, thinners, and cleaners.

26 The management of hazardous materials and hazardous waste is governed by specific
27 environmental statutes. Key statutes include the Comprehensive Environmental Response,
28 Compensation, and Liability Act of 1980 (42 USC 9601-9675) as amended by the Superfund
29 Amendments and Reauthorization Act of 1986. These statutes regulate the prevention, control,
30 and compensation of environmental pollution.

31 Issues at Dover AFB associated with hazardous material and waste typically center around waste
32 streams, underground storage tanks, aboveground storage tanks, and the storage, transport, use,
33 and disposal of fuels, lubricants, and other industrial substances. When such materials are
34 improperly used in any way, they can threaten the health and well-being of wildlife species,
35 habitats, and soil and water systems, as well as humans.

36 Implementation of the Proposed Action would not produce hazardous materials or waste and
37 would result in no changes to hazardous materials and waste management, release potential, or the
38 Environmental Restoration Program (ERP). The types and quantities of hazardous materials
39 utilized and the hazardous waste generated at the installation would not change due to the
40 implementation of the Proposed Action. There are no sites on the Superfund National Priorities
41 List located on the private property (USEPA 2018). ERP sites located on the installation would
42 not be affected by the Proposed Action. The installation would continue to comply with federal

1 and state hazardous materials and waste regulations. Therefore, hazardous materials and waste
2 analysis was not carried forward for more detailed analysis.

3 **2.6.4 Infrastructure**

4 Infrastructure consists of the systems and physical structures or utilities that enable the population
5 of an AFB to function. These utilities include water supply and distribution, sanitary sewer and
6 wastewater systems, stormwater drainage, electrical system, natural gas, solid waste, and
7 transportation. Effects on infrastructure are based on the potential for disruption or improvement
8 of existing levels of service and additional needs for water, energy and natural gas consumption,
9 wastewater and stormwater drainage systems, transportation resources, and solid waste system
10 availability. Changes in population and development are not part of the Proposed Action.
11 Therefore, the Proposed Action would not impact infrastructure. Infrastructure analysis was not
12 carried forward for more detailed analysis.

13 **2.6.5 Noise**

14 Noise is considered unwanted sound that interferes with normal activities or otherwise diminishes
15 the quality of the environment. Responses to noise vary widely according to the characteristics of
16 the sound source, the time of day, the distance between the noise source and the person hearing
17 the sound, and the sensitivity and expectations of the person hearing the sound.

18 The Proposed Action would not create new permanent sources of noise. Therefore, no long-term
19 changes in the noise environment would be expected. Therefore, noise was not carried forward for
20 detailed analysis in this EA.

21 **2.6.6 Socioeconomics**

22 Socioeconomic factors are defined as the basic attributes and resources associated with the human
23 environment and may include population and housing, economic activity, and public services.

24 The Proposed Action does not include any activities that contribute to a change in population or
25 housing, that could influence significant economic activity, or change the use or requirements for
26 public services. There is no construction or demolition activities associated with the Proposed
27 Action so no impacts to the economy would result through the purchasing of labor or supplies.
28 Therefore, there would be no adverse impacts to socioeconomic resources as a result of the
29 Proposed Action. Socioeconomic resources are not carried forward for more detailed analysis.

30 **2.6.7 Environmental Justice**

31 Environmental Justice is defined by the U.S. Environmental Protection Agency (USEPA) as the
32 fair treatment of all people regardless of race, color, national origin, or income with respect to the
33 development, implementation, and enforcement of environmental laws, regulations, and policies
34 (USEPA 1998; USAF 2014b). Concern that certain disadvantaged communities may bear a
35 disproportionate share (overburdened populations) of adverse health and environmental effects
36 compared to the general population led to the 1994 enactment of EO 12898, *Federal Actions to*
37 *Address Environmental Justice in Minority Populations and Low-Income Populations*. This EO
38 directs federal agencies to address disproportionate environmental and human health effects in
39 minority and low-income communities. EO 13045, *Protection of Children from Environmental*
40 *Health Risks and Safety Risks*, was enacted in 1997, directing federal agencies to identify and
41 assess environmental health and safety risks to children, coordinate research priorities on
42 children's health, and ensure that their standards take into account special risks to children.

1 Subsequently in September 2011, the USEPA issued Plan Environmental Justice 2014, outlining
2 processes and procedures to help Environmental Justice communities and other sensitive
3 populations more efficiently and effectively engage agencies as they make decisions (USAF
4 2014b).

5 Under the Proposed Action, no demolition or construction would occur, therefore there would be
6 no increase in exposure of children to environmental health or safety risks. No on or off-base
7 human communities (minority, low-income, or otherwise) would be adversely impacted by the
8 Proposed Action. Therefore, no adverse impact to environmental justice would be expected to
9 occur as a result of the Proposed Action. Environmental justice issues are not carried forward for
10 a more detailed analysis.

11 **2.7 SUMMARY COMPARISON OF ENVIRONMENTAL CONSEQUENCES**

12 Table 2.6-1 summarizes the potential environmental consequences anticipated to result from
13 implementation of each of the three alternatives.

1

Table 2.6-1. Summary Comparison of Environmental Consequence by Resource and Alternative

Environmental Resource	Proposed Action	Alternative Action	No Action
<i>Aesthetics and Visual Resources</i>	The Proposed Action does not include any construction or demolition activities that may affect aesthetics and visual resources; therefore, there would be no significant adverse impacts.	Potential impacts to aesthetics and visual resources resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action.	No significant adverse impacts.
<i>Biological Resources</i>	The Proposed Action does not include any construction, ground disturbance, or other impacts affecting vegetation, sensitive habitats, or wetlands; therefore, there would be no significant adverse impacts.	Potential impacts to biological resources resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action.	No significant adverse impacts.
<i>Cultural Resources</i>	Because no development or construction is planned within the region of influence (ROI) once Dover AFB has acquired the parcels, no impacts to site 7K-D-1's physical integrity, location, or setting would occur under the Proposed Action. This would also be the case for any potentially buried archaeological deposits. Transfer of the parcels to federal ownership would result in a beneficial effect to the site.	Potential impacts to cultural resources resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action. Under the Alternative Action, the parcels would not be subject to federal laws and regulations that protect and consider such resources, and the resources would not be proactively managed under the purview of the Integrated Cultural Resources Management Plan (ICRMP).	Under the No Action alternative, the private land parcels would remain in private ownership. While there would be no direct impact to the resources from the No Action, there would be no protections for site 7K-D-1 or buried archaeological deposits from potential impacts to physical integrity, location, or setting from future landowner activities.
<i>Geological Resources</i>	The Proposed Action does not include any construction, ground disturbance, or other impacts affecting geologic features, hazards, or soil limitations; therefore, there would be no significant adverse impacts.	Potential impacts to geological resources resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action.	No significant adverse impacts.
<i>Land Use</i>	Implementation of the Proposed Action would likely change the current zoning from Agricultural Conservation Residential District to Military Conservation Lands. There would be no significant adverse impacts.	Potential impacts to land use resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action.	No significant adverse impacts.
<i>Water Resources</i>	The Proposed Action does not include any construction, ground disturbance, or other impacts affecting water quality or unique hydrologic characteristics; therefore, there would be no significant adverse impacts.	Potential impacts water resources resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action.	No significant adverse impacts.

Environmental Resource	Proposed Action	Alternative Action	No Action
<i>Health and Safety</i>	Implementation of the Proposed Action would reduce safety risks because there would no longer be a need to escort landowners through Dover AFB property, thus allowing Security Forces to focus on their primary mission of maintaining security at the base.	Potential impacts to safety risks resulting from implementation of the Alternative Action would be the same as those described for the Proposed Action.	Security Forces would continue escorting landowners through Dover AFB to access the private property increasing security risks at Dover AFB by requiring Security Forces to escort un-cleared civilians.
<i>Cumulative Effects</i>	No adverse cumulative impacts	No adverse cumulative impacts	No adverse cumulative impacts

1

1 **3.0 AFFECTED ENVIRONMENT**

2 In accordance with guidelines established by the NEPA, CEQ regulations, and 32 CFR §989 EIAP,
3 the description of the affected environments and the associated impact analyses in this EA focus
4 on only those aspects of the environment potentially subject to impacts.

5 After preliminary analyses of potential environmental issues, the following resource areas were
6 carried forward for further analysis in the EA due to the potential for direct, indirect, or cumulative
7 effects:

- 8 • **Aesthetics and Visual Resources** – The analysis evaluates the potential effects on the
9 visual quality in the area.
- 10 • **Biological Resources** – The analysis evaluates the potential effects on the distribution or
11 viability of species or habitats of concern.
- 12 • **Cultural Resources** – The analysis evaluates the potential effects on cultural and historical
13 resources from the proposed activities.
- 14 • **Geological Resources** – The analysis evaluates the potential effects on geological
15 resources from the proposed activities.
- 16 • **Health and Safety** – The analysis evaluates the potential effects on health and safety from
17 the proposed activities.
- 18 • **Land Use** – The analysis evaluates the potential effects on existing land uses within the
19 proposed project area.
- 20 • **Water Resources** – The analysis evaluates the potential effects from storm-water runoff
21 and for potential effects to wetlands or floodplains within the proposed project area.

22 **3.1 AESTHETICS AND VISUAL RESOURCES**

23 **3.1.1 Definition of the Resource**

24 The visual resources of an area include the natural and man-made features that give a landscape
25 its visually aesthetic qualities and form the overall “visual character” of an area. Visual character
26 is studied as a point of reference to assess whether a proposed action would appear compatible
27 with the established features of the setting or would contrast noticeably and unfavorably with them.
28 Visual resources have a social setting, or “visual sensitivity” that includes public expectations,
29 values, goals, awareness, and concern regarding the visual quality of an area (BLM 2008).

30 **3.1.2 Existing Conditions**

31 The ROI for potential impacts to aesthetics and visual resources includes five privately-owned
32 parcels totaling approximately 100 acres that would be acquired either by Dover AFB or a third
33 party.

34 The private property is not developed and is made up of saltmarsh and upland forest. The visual
35 environment of the private property and Dover AFB is characterized by the relatively flat terrain
36 associated with the lowlands that border the Atlantic Ocean in the Coastal Plain Plateau Province.
37 The Coastal Plain Plateau Province is generally flat, seaward sloping lowland with some
38 moderately steep local relief.

1 There are no predominant visual characteristics associated with the private property. The
2 predominant visual characteristics associated with the Dover AFB are industrial and administrative
3 in nature. Developed areas include the runways and associated taxiways and parking aprons,
4 administrative buildings, industrial facilities, community centers, housing, recreational facilities,
5 and open space. Visual characteristics associated with the surrounding land include agriculture
6 lands broken by forested areas interspersed with municipal and residential areas. East of the base
7 the visual environment consists of Delaware Bay.

8 **3.2 BIOLOGICAL RESOURCES**

9 **3.2.1 Definition of the Resource**

10 Biological resources include living, native, or naturalized plant and animal species and the habitats
11 within which they occur.

12 *Vegetation types* include all existing terrestrial plant communities as well as their individual
13 component species. The affected environment for vegetation includes only the areas potentially
14 subject to ground disturbance or removal of trees.

15 *Wildlife* generally includes all fish, amphibian, reptile, bird, mammal, and invertebrate species
16 with the exception of those identified as special status species, which are treated separately.
17 Wildlife also includes those bird species protected under the *Federal Migratory Bird Treaty Act*
18 and the *Bald and Golden Eagle Protection Act*. Assessment of a project's effect on migratory birds
19 places an emphasis on "species of concern" as defined by EO 13186, *Responsibilities of Federal*
20 *Agencies to Protect Migratory Birds*.

21 *Special status species* are defined as those plant and animal species listed as endangered or
22 threatened, and species proposed for listing by the U.S. Fish and Wildlife Service (USFWS) and
23 protected under the ESA as well as state-listed species.

24 **3.2.2 Existing Conditions**

25 The private property is located to the west of Dover AFB's existing fenceline between Dover AFB
26 property and the St. Jones River and is made up of five parcels totaling approximately 100 acres.
27 Because this land is private property no formal assessment of the existing conditions was made.

28 ***Vegetation***

29 Vegetation on the private property likely consists of mainly saltmarsh cordgrass (*Spartina*
30 *alterniflora*), marsh shrub, and common reed (*Phragmites australis*) within the western portion of
31 the private property. The marsh shrub areas likely includes groundselbush (*Baccharis halimifolia*),
32 marsh elder (*Iva frutescens*), and red cedar (*Juniperus virginiana*). The eastern portion along the
33 fenceline is made up primarily by upland forest. The upland forested community likely includes
34 tulip tree (*Liriodendron tulipifera*), black cherry (*Prunus serotina*), American beech (*Fagus*
35 *grandifolia*), white oak (*Quercus alba*), southern red oak (*Quercus falcata*), hickory (*Carya* spp.),
36 American holly (*Ilex opaca*), sassafras (*Sassafras albidum*), and black haw (*Viburnum*
37 *prunifolium*) (DNREC 1999). Figures 3.3-1 and 3.3-2 show the existing vegetation present on the
38 private property. Additional photographs and the corresponding photo reference map are provided
39 in Appendix B.

1

Figure 3.3-1. Existing Vegetation – Location 5



2

3

4

Figure 3.2.2-2. Existing Vegetation – Location 9



5

1 **Wildlife**

2 Mammal species that can be found with the wetland areas of the private property includes muskrats
 3 (*Ondatra zibethicus*) and to a lesser extent river otter (*Lutra canadensis*) and mink (*Mustela vison*).
 4 Mammal species likely to occur within the forested areas of the private property includes
 5 whitetailed deer (*Odocoileus virginianus*), gray squirrel (*Sciurus carolinensis*), raccoon (*Procyon*
 6 *lotor*), red and gray foxes (*Vulpes* and *Urocyon cinereoargenteus*), opossum (*Didelphis*
 7 *marsupialis*), woodchuck (*Marmota monax*), striped skunk (*Mephitis mephitis*), long-tail weasel
 8 (*Mustela frenata*), cottontail rabbit (*Sylvilagus floridanus*), and various shrews, voles, mice and
 9 bats (DNREC 1999).

10 The private property is located in the Atlantic Flyway. During spring and fall, migrating birds
 11 forage and rest in the marshes and wetlands in the St. Jones River floodplain and nearby wildlife
 12 refuges. The most common bird species observed in the St. Jones River floodplain likely to be
 13 present within the proposed property purchase site are listed in Table 3.3-1.

14 **Table 3.3-1. Bird Species with Potential to Occur in the Private Property**

Common Name	Scientific Name	Common Name	Scientific Name
glossy ibis	<i>Plegadis falcinellus</i>	brown-headed cowbird	<i>Molothrus ater</i>
great blue heron	<i>Ardea herodias</i>	northern oriole	<i>Icterus galbula</i>
great egret	<i>Casmerodius albus</i>	American goldfinch	<i>Carduelis tristis</i>
green-backed heron	<i>Butorides virescens</i>	bobolink	<i>Dolichonyx oryzivorus</i>
snowy egret	<i>Egretta thula</i>	cedar waxwing	<i>Bombycilla cedrorum</i>
clapper rail	<i>Rallus longirostris</i>	northern cardinal	<i>Cardinalis</i>
king rail	<i>Rallus elegans</i>	indigo bunting	<i>Passerina cyanea</i>
Virginia rail	<i>Rallus limicola</i>	yellow warbler	<i>Dendroica petechia</i>
willet	<i>Catoptrophorus semipalmatus</i>	prairie warbler	<i>Dendroica discolor</i>
laughing gull	<i>Larus atricilla</i>	Yellow-breasted chat	<i>Icteria virens</i>
Forster's tern	<i>Sterna forsteri</i>	blue grosbeak	<i>Guiraca caerulea</i>
marsh wren	<i>Cistothorus palustris</i>	northern junco	<i>Junco hyemalis</i>
red-winged blackbird	<i>Agelaius phoeniceus</i>	sparrows	<i>Passer spp.</i>
boat-tailed grackle	<i>Quiscalus major</i>	downy woodpecker	<i>Picoides pubescens</i>
common yellowthroat	<i>Geothlypis trichas</i>	red-bellied woodpecker	<i>Melanerpes carolinus</i>
seaside sparrow	<i>Ammospiza maritima</i>	eastern pewee	<i>Contopus virens</i>
sharp-tailed sparrow	<i>Ammospiza caudacuta</i>	blue jay	<i>Cyanocitta cristata</i>
red-tailed hawks	<i>Buteo jamaicensis</i>	Carolina chickadee	<i>Parus carolinensis</i>
American kestrel	<i>Falco sparverius</i>	tufted titmouse	<i>Parus bicolor</i>
northern bobwhite	<i>Colinus virginianus</i>	nuthatches	<i>Sitta spp.</i>
ring-necked pheasant	<i>Phasianus colchicus</i>	brown creeper	<i>Certhia americana</i>
mourning dove	<i>Zenaida macroura</i>	kinglets	<i>Regulus spp.</i>
northern flicker	<i>Colaptes auratus</i>	blue-gray gnatcatcher	<i>Poliptila caerulea</i>
Eastern phoebe	<i>Sayornis phoebe</i>	gray catbird	<i>Dumetella carolinensis</i>
eastern kingbird	<i>Tyrannus</i>	wood thrush	<i>Hylocichla mustelina</i>
house wren	<i>Troglodytes aedon</i>	red-eyed vireo	<i>Vireo olivaceus</i>
barn swallow	<i>Hirundo rustica</i>	white-eyed vireo	<i>Vireo griseus</i>
tree swallow	<i>Tachycineta bicolor</i>	yellow-rumped warbler	<i>Dendroica coronata</i>
American crow	<i>Corvus brachyrhynchos</i>	black-throated blue warbler	<i>Dendroica caerulescens</i>
brown thrasher	<i>Toxostoma rufum</i>	Kentucky warbler	<i>Oporornis formosus</i>
northern mockingbird	<i>Mimus polyglottos</i>	American redstart	<i>Setophaga ruticilla</i>
eastern bluebird	<i>Sialia sialis</i>	ovenbird	<i>Seiurus aurocapillus</i>
American robin	<i>Turdus migratorius</i>	scarlet tanager	<i>Piranga olivacea</i>

Common Name	Scientific Name	Common Name	Scientific Name
eastern meadowlark	<i>Sturnella magna</i>	rufous-sided towhee	<i>Pipilo erythrophthalmus</i>
common grackle	<i>Quiscalus quiscula</i>	fox sparrow	<i>Passerella iliaca</i>
European starling	<i>Sturnus vulgaris</i>	white-throated sparrow	<i>Zonotrichia albicollis</i>

Source: DNREC 1999.

Comprehensive fish surveys of Delaware Bay tributaries were conducted in 1986 by the Delaware Fish and Wildlife Service. The St. Jones River was sampled at both tidal and freshwater stations where 22 species of freshwater fish and 23 species of tidal water fish were found (DAFB 2012). A similar study conducted in 1995 by Wetlands Research Associates, Inc. (WRA) and Environmental Consulting Services, Inc. (ECSI) who found 25 different species within the lower St. Jones River where only six species comprised over 94 percent of the total catch. In order of decreasing abundance, the most dominant species were Atlantic silverside (*Menidia menidia*), mummichog (*Fundulus heteroclitus*), spot (*Leiostomus xanthurus*), sheepshead minnow (*Cyprinodon variegatus*), white perch (*Morone americana*), and bay anchovy (*Anchoa mitchilli*). These are typical estuarine species, able to tolerate a wide range of salinities (WRA and ECSI 1995).

ECSI also conducted a marsh surface aquatic macroinvertebrate survey of the Lower St. Jones River in 1997 (ECSI 1998). Invertebrates of interest included fiddler crabs (*Uca* spp.), saltmarsh snails (*Melampus bidentatus*), marsh crabs (*Sesarma reticulatum*), grass shrimp (*Palaemonetes* spp.), Atlantic ribbed mussels (*Geukensia demissa*), amphipods (*Orchestia grillus* and *Gammarus* spp.), isopods (*Edotea triloba*), mud snails (*Ilyanassa obsoletus*), and blue crabs (*Callinectes sapidus*).

Threatened and Endangered Species

The USFWS’s Information for Planning and Consultation (IPaC) system report (Appendix B) for Kent County states that the county falls within the habitat range of the federally threatened red knot (*Calidris canutus rufa*), small-whorled pogonia (*Isotria medeoloides*), and swamp pink (*Helonias bullata*).

The USFWS Environmental Conservation Online System Species Report (Appendix B) lists five federally threatened and endangered species with the potential to occur in Kent County (Table 3.3-2). No federally threatened and endangered species are known to exist on the private property.

Table 3.3-2. Federally Listed Threatened and Endangered Species with Potential to Occur in Kent County

Group	Common Name	Scientific Name	Status
Birds	Red knot	<i>Calidris canutus rufa</i>	Threatened
Flowering Plants	Seaside alder	<i>Alnus maritima</i>	Under Review
	Small-whorled pogonia	<i>Isotria medeoloides</i>	Threatened
	Swamp pink	<i>Helonias bullata</i>	Threatened
	Canby’s dropwort	<i>Oxypolis</i>	Endangered

Source: USFWS 2017a.

Delaware's Administrative Code includes State regulations to protect endangered species of animals (DNREC 2017). Currently, the State endangered animals list includes 21 birds (seven include breeding populations only), 8 reptiles, 3 amphibians, 9 mammals, 7 fish, 7 mollusks, and 31 insects (DNREC 2013a). Plant species are assigned a conservation status (DNREC 2013b), but are not protected by State regulation; the current list includes 572 plants (McAvoy 2013).

1 **3.3 CULTURAL RESOURCES**

2 **3.3.1 Definition of the Resource**

3 Cultural resources are physical manifestations of culture, specifically archaeological sites,
4 architectural properties, ethnographic resources, and other historical resources relating to human
5 activities, society, and cultural institutions that define communities and link them to their
6 surroundings. They include expressions of human culture and history in the physical environment,
7 such as prehistoric and historic archaeological sites, buildings, structures, objects, and districts,
8 which are considered important to a culture or community. Cultural resources also include
9 locations of important historic events and aspects of the natural environment, such as natural
10 features of the land or biota, which are part of traditional lifeways and practices.

11 The National Register of Historic Places (NRHP) is a listing maintained by the federal government
12 of prehistoric, historic, and ethnographic buildings, structures, sites, districts, and objects that are
13 considered significant at a national, state, or local level. Listed resources can have significance in
14 the areas of history, archaeology, architecture, engineering, or culture. Cultural resources listed on
15 the NRHP, or determined eligible for listing, have been documented and evaluated according to
16 uniform standards, found in 36 CFR 60.4, and have been found to meet criteria of significance and
17 integrity. Cultural resources that meet the criteria for listing on the NRHP, regardless of age, are
18 called *historic properties*. Resources that have undetermined eligibility are treated as historic
19 properties until a determination otherwise is made.

20 A number of federal laws, regulations, and EOs address cultural resources and federal
21 responsibilities regarding them. Foremost among these statutory provisions, and most relevant to
22 the current analysis, is the NHPA (54 U.S.C. 300101 et seq.). Section 106 of the NHPA requires
23 federal agencies to take into account the effect of their undertakings on historic properties. The
24 Advisory Council on Historic Preservation (ACHP) regulations that implement Section 106 (36
25 CFR 800) describe the process for identifying and evaluating historic properties; assessing effects
26 of federal actions on historic properties; and consulting to avoid, minimize, or mitigate any adverse
27 effects. The NHPA does not mandate preservation of historic properties, but it does ensure that
28 federal agency decisions concerning the treatment of these properties result from meaningful
29 consideration of cultural and historical values, and identification of options available to protect the
30 properties.

31 As a federal agency, DoD has a trust responsibility to American Indian tribes (Tribes) to protect
32 tribal cultural resources and to consult with Tribes on a government-to-government basis regarding
33 those resources. Section 101(d)(6) of the NHPA mandates that Federal agencies consult with
34 Tribes and other Native American groups who either historically occupied the project area or may
35 attach religious or cultural significance to historic properties in the region. The NEPA
36 implementing regulations link to the NHPA, as well as to *the American Indian Religious Freedom*
37 *Act* (AIRFA) (42 U.S.C. 1996), EO 13007 Indian Sacred Sites (61 *Federal Register* [FR] 26771),
38 EO 13175 Consultation and Coordination with Indian Tribal Governments (65 FR 67249), and the
39 Executive Memorandum on Government-to-Government Relations with Native American Tribal
40 Governments (59 FR 22951). These requirements call on agencies to consult with American Indian
41 tribal leaders and others knowledgeable about cultural resources important to them. On November
42 27, 1999, the DoD promulgated its Annotated American Indian and Alaska Native Policy, which
43 emphasizes the importance of respecting and consulting with tribal governments on a government-
44 to-government basis. This policy requires an assessment, through consultation, of proposed DoD

1 actions that may have the potential to significantly affect protected tribal resources, tribal rights,
2 and Indian lands before decisions are made by the respective services.

3 The DoD and USAF have multiple policies and procedures regarding the management of cultural
4 resources under their jurisdiction, most relevant here being AFI 32-7065, Cultural Resources
5 Management. Dover AFB approved an installation-wide ICRMP in September 2017 that integrates
6 the implementation of the DoD and USAF policies and procedures into the programming and
7 planning undertaken for the installation. It was developed in consultation with the Delaware State
8 Historic Preservation Officer (SHPO) and tribes that have historical connections with the land and
9 resources managed by Dover AFB. It is a comprehensive plan that defines the responsibilities,
10 requirements, and methods for managing cultural resources located on DoD-administered lands at
11 Dover AFB, and provides standard operating procedures for preservation of the cultural resources
12 of the installation within the context of the mission (DAFB 2017a).

13 **3.3.2 Existing Conditions**

14 The ROI for potential impacts to cultural resources from the Proposed Action or the Alternative
15 Action includes five parcels of privately-owned land totaling approximately 100 acres that would
16 be acquired either by Dover AFB or a third party.

17 These parcels have not undergone systematic cultural resource survey to identify cultural resources
18 and evaluate their potential as historic properties. However, one archaeological site is known to
19 occur within the ROI. Site 7K-D-1, named the St Jones Adena site, was first recorded in 1960. In
20 addition to prehistoric artifacts and features, approximately 50 Native American burials and
21 associated burial items were identified within this site on private land. While the mortuary complex
22 likely dates to 380 B.C., placing it within the Woodland I period, 3,000 B.C. to A.D. 1000, other
23 areas of the site indicate use of the site well before and after this time period (DAFB 2017a).
24 Archaeological investigations on Dover AFB across the installation boundary from site 7K-D-1
25 identified site 7K-D-2. Dating to the same Woodland I and II periods, it was initially surmised that
26 7K-D-1 and 7K-D-2 might be part of the same site. Further investigations of both 7K-D-1 and 7K-
27 D-2 in the 1990s identified additional prehistoric and historic artifacts and features, as well as
28 portions of both sites that had been significantly disturbed (Thomas and Payne 1996). Although
29 determined in this 1996 study that the sites were not one, the findings suggested that the sites were
30 related. In 2014, it was confirmed that sites 7K-D-1 and 7K-D-2 were the same site and that the
31 site boundary differences had been based solely on property lines (Koziarski et al. 2014; DAFB
32 2016a). The Delaware SHPO concurred and site 7K-D-2 is now subsumed within 7K-D-1. Site
33 7K-D-1 was determined eligible for inclusion in the NRHP. Of the portion of the site located in
34 the ROI, on the private land parcels, much of the defined site and adjacent areas with high potential
35 to include additional artifacts and features appear to be intact. However, a large area within the
36 designated site boundaries has been previously disturbed from development of a gravel quarry.

37 Other areas of the ROI have not undergone archaeological investigations. Regional studies and
38 predictive modeling indicate that there is potential for buried archaeological resources in these
39 unsurveyed areas due to their proximity to estuarine resources, which have been determined to be
40 of importance in prehistoric land use patterns (DAFB 2017a). While these other areas demonstrate
41 at least some level of disturbance to the upper levels of soil through agricultural use of the land,
42 this does not remove the potential for intact archaeological deposits in lower soil horizons.

43 Given the previous identification of Native American prehistoric resources within and adjacent to
44 the ROI, tribal consultation was initiated by Dover AFB with the Delaware Nation and Delaware

1 Tribe of Indians (Lenape) to determine the presence of tribally-significant resources within the
2 ROI.

3 **3.4 GEOLOGICAL RESOURCES**

4 **3.4.1 Definition of the Resource**

5 Geological resources include the geologic and soil conditions within the project area. The geology
6 of an area includes bedrock materials and mineral deposits. The principal geologic factors
7 influencing the stability of structures are soil stability, bedrock depth, and seismic properties. Soil
8 refers to unconsolidated earthen materials overlying bedrock or other parent material. Soil
9 structure, elasticity, strength, shrink-swell potential, liquefaction potential, and its potential to
10 erode, all determine the ability of the ground to support structures and facilities.

11 **3.4.2 Existing Conditions**

12 The ROI for geological resources includes five parcels of privately-owned land totaling
13 approximately 100 acres that would be acquired either by Dover AFB or a third party.

14 Kent County, Delaware is characterized by nearly flat to gently sloping topography with some
15 moderately steep local relief. Throughout the area, elevations are less than 60 feet, local relief is
16 less than 35 feet, and streams are often tidally influenced and have low gradients (USEPA 1999).
17 This coastal plain is generally underlain by semi-consolidated to unconsolidated sediments
18 consisting of silt, clay, and sand with some gravel. The soil type within the proposed project area
19 is classified as transquaking and mispillion soils and udorthents (Figure 3.5-1) (USDA NRCS
20 2017).

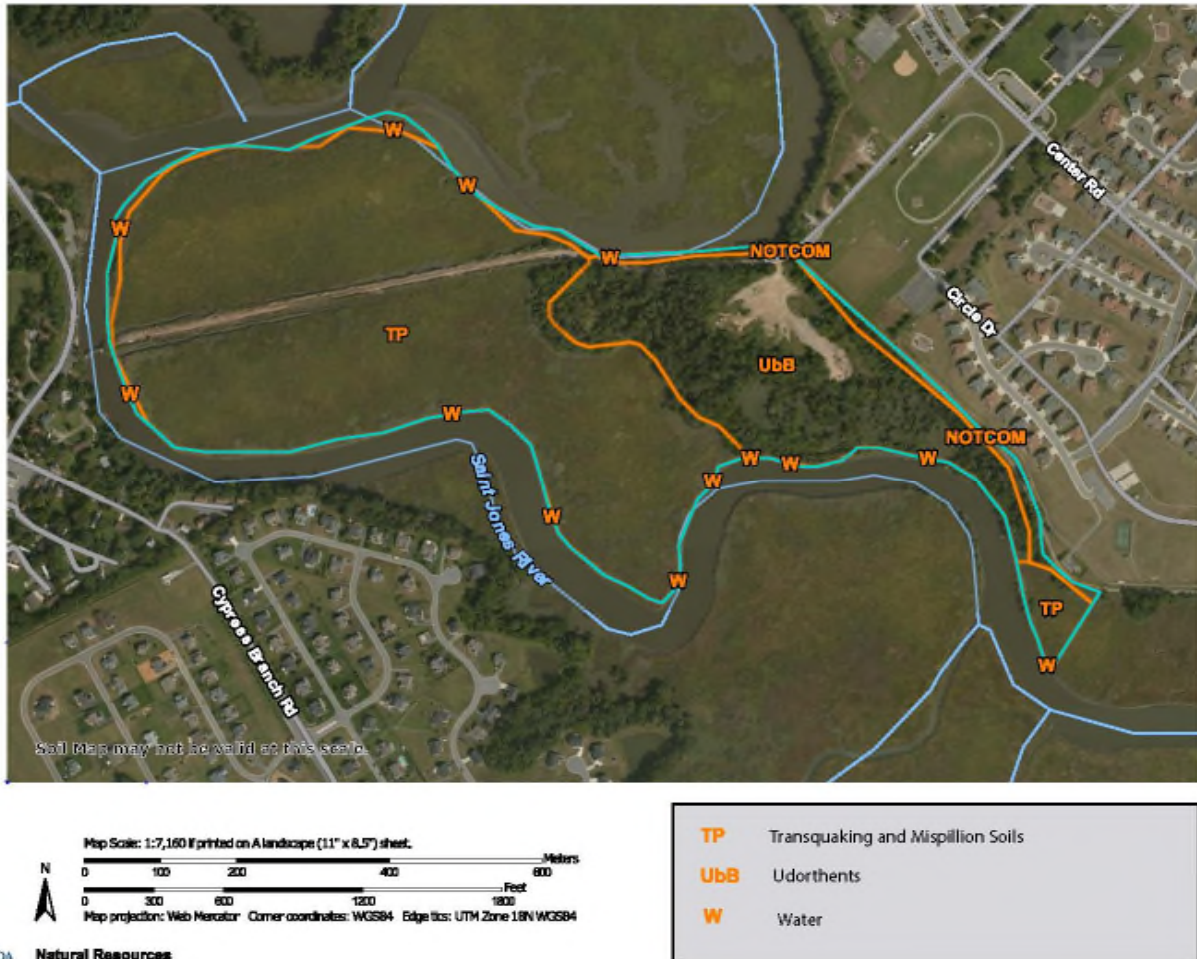
21 Transquaking and mispillion soils were formerly mapped as tidal marsh miscellaneous areas. This
22 soil type is on estuarine tidal marshes, coastal plains. The parent material consists of herbaceous
23 organic material over estuarine sediments. The natural drainage class is very poorly drained
24 (USDA NRCS 2017).

25 Udorthents is a soil type soil or soil mapping unit that has been subjected to extensive filling and
26 grading activities and does not meet conventional characterization as a naturally-occurring soil
27 type with a common soil drainage class and/or range of similar soil properties. This soil type is
28 on uplands, flats, and borrow pits. The parent material consists of fluviomarine sediments
29 fluviormarine deposits. The natural drainage class is moderately well drained (USDA NRCS
30 2017).

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Figure 3.5-1. Soil Map – 100 Acre Parcels



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3 Source: USDA NRCS 2017.

4 **3.5 HEALTH AND SAFETY**

5 **3.5.1 Definition of the Resource**

6 This section considers issues associated with human activities, operations, and maintenance
 7 activities that support mission operations.

8 **3.5.2 Existing Conditions**

9 The DoD and the USAF have developed a series of anti-terrorism and force protection (ATFP)
 10 guidelines for military installations that address a range of considerations such as access, siting,
 11 exterior design, interior infrastructure design, and landscaping. Removal of the pedestrian bridge
 12 has eliminated all other access to the private property except through Dover AFB. As a result,
 13 owners must be escorted by Security Forces personnel through Dover AFB in order to access their
 14 property. The parcels which are owned by private individuals are primarily visited by landowners
 15 and/or guests carrying weapons for hunting. The present owners of the private property are not
 16 required to comply with current ATFP safety standards.

1 **3.6 LAND USE**

2 **3.6.1 Definition of the Resource**

3 Land use analysis involves an assessment of the current characterization and zoning of the project
4 area and whether the Proposed Action would change the current use of the area and comply with
5 current zoning designations.

6 **3.6.2 Existing Conditions**

7 The land uses of Dover AFB are typical of most military installations and include military
8 operations, maintenance and administrative areas, and residential areas. The private property is
9 located outside of the installation boundary, to the west of Dover AFB’s existing fenceline between
10 Dover AFB property and the St. Jones River. This area is classified as an Agricultural
11 Conservation Residential District (Kent County 2011).

12 **3.7 WATER RESOURCES**

13 **3.7.1 Definition of the Resource**

14 Water resources analyzed in this EA include surface water, groundwater, wetlands, and
15 floodplains. Surface water resources include lakes, rivers, and streams. Groundwater includes
16 subsurface hydrologic resources. Wetlands are considered sensitive habitats and are subject to
17 federal regulatory authority under Section 404 of the CWA and EO 11990, Protection of Wetlands.
18 EO 11988, Floodplain Management, requires federal agencies to avoid, to the extent possible, the
19 long- and short-term adverse impacts associated with proposed actions and to avoid direct or
20 indirect support of floodplain development whenever there is a practicable alternative.

21 The nation’s waters are protected under the statutes of the CWA with a goal of restoring and
22 maintaining the chemical, physical, and biological integrity of the nation’s waters so they can
23 support “the protection and propagation of fish, shellfish, wildlife, and recreation in and on the
24 water.” Under the CWA Section 402, it is illegal to discharge any point and/or nonpoint pollution
25 sources into any surface water without a National Pollutant Discharge Elimination System
26 (NPDES) permit. The USEPA administers the NPDES program at Dover AFB. There are total
27 maximum daily load (TMDL) thresholds under the CWA for the St. Jones River, which require
28 nonpoint source load reductions of 40 percent for nitrogen and phosphorus and 90 percent for
29 enterococcus (DNREC 2006).

30 **3.7.2 Existing Conditions**

31 *Surface Water*

32 The private property is located in the St. Jones River watershed, which drains 90 square miles of
33 land. The St. Jones River runs from Dover to the Delaware Bay and transitions from upland
34 freshwater habitat to brackish marshes to the saline bay. The river is dammed 10 miles upstream
35 from the Delaware Bay to form Silver Lake in Dover. From Silver Lake the St. Jones River then
36 winds through residential and commercial areas, the Delaware National Estuarine Research
37 Reserve, and the Ted Harvey Wildlife Area before emptying into the Delaware Bay (University of
38 Delaware, 2017 and Rogerson et. al. 2010). The property is bordered on the north, west, and south
39 by the St. Jones River (Figure 3.8-1).

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Figure 3.8-1. Surface Water - St. Jones River



2 The Coastal Zone Management Act (CZMA) of 1972 (16 USC 1451, et seq., as amended) provides
3 assistance to states, in cooperation with federal and local agencies, for developing land and water
4 use programs in coastal zones. Section 307 of the CZMA stipulates that federal projects that affect
5 land uses, water uses, or the coastal resources of state's coastal zone must be consistent to the
6 maximum extent practicable with the enforceable policies of that state's federal approved coastal
7 management program.

8 An application for a Coastal Zone Status Decision is necessary if there is question as to whether a
9 proposed activity is considered Heavy Industry, or to determine if the proposed activity is exempt
10 from having to obtain a Coastal Zone Permit. An application for a Coastal Zone Permit is necessary
11 for any new or expanded manufacturing activity that will have an impact on the environment, the
12 economy, the aesthetics or neighboring land uses.

13 Federal Consistency Certifications are required as a part of the permitting process for all federal
14 permits, licenses and approvals, as well as direct federal actions and federally-funded projects.
15 Applicants for a Federal Consistency Certification must ensure that the project is consistent with
16 the policies of the Delaware Coastal Programs and submit a "Statement of Consistency", an
17 analysis of policies and pertinent background material to the Delaware Coastal Programs office
18 for public notice and review.

19 Delaware has two Coastal Zones: one as defined by the Delaware Coastal Zone Act and one
20 defined by the Federal Coastal Zone Management Act. As defined by the State Coastal Zone Act,
21 the Coastal Zone is a strip of coastal land, generally to the east of Route 9 and bordering the C&D
22 Canal and Inland Bays. Under the *Federal Coastal Zone Management Act*, the Coastal Zone is the
23 entire State of Delaware. Construction or expansion of industrial and manufacturing facilities is
24 regulated within the State Coastal Zone. Within the Federal Coastal Zone, all applicants for federal

1 licenses, permits and approvals, funding and direct federal activities are required to obtain a
2 Federal Consistency Certification. Dover AFB submitted a negative consistency determination to
3 DNREC to satisfy the federal coastal zone consistency requirement. DNREC concurred with the
4 determination (Appendix A).

5 ***Ground Water***

6 Dover AFB is underlain by the Columbia Aquifer where groundwater is typically encountered
7 between 10 and 15 feet below ground surface. The proposed property purchase site likely has a
8 high water table due to the proximity of the St. Jones River (SAIC 2013). As part of the DoD
9 Environmental Restoration Program (ERP), 12 contaminant plumes have been identified in
10 shallow groundwater underlying the Base. None of the contaminated groundwater is used to supply
11 potable water to the installation, and no contaminants have ever been reported in the potable water
12 supply at Dover AFB (USEPA 2013).

13 ***Wetlands***

14 Wetlands are defined by the USACE and USEPA as:

15 “ . . . those areas that are inundated or saturated by surface or groundwater at a frequency
16 and duration sufficient to support, and that under normal circumstances do support, a
17 prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands
18 generally include marshes, bogs, and similar areas” (33 CFR 328.3[b]).

19 Wetlands provide a variety of functions including groundwater recharge and streamflow
20 maintenance; flood protection; shoreline stabilization; sediment and toxicant retention; nutrient
21 removal and transformation; and aquatic and terrestrial diversity and abundance (Michaud 1990).
22 Three criteria are necessary to define wetlands: hydrophytic vegetation, hydric soils, and presence
23 of hydrology (frequency of flooding or soil saturation). Jurisdictional wetlands are those subject
24 to regulatory authority under Section 404 of the CWA and EO 11990, Protection of Wetlands.

25 According to the National Wetlands Inventory online mapper, the entire proposed property
26 purchase site is made up of estuarine and marine wetlands as well as freshwater emergent wetlands
27 (USFWS 2017b).

28 ***Floodplains***

29 Floodplains are lowlands and relatively flat areas adjoining waters subject to a 1 percent or greater
30 chance of flooding in any given year (i.e., 100-year floodplain). The project site lies within the
31 100-year floodplain (FEMA 2017).

1 **4.0 ENVIRONMENTAL CONSEQUENCES**

2 The analysis of environmental consequences is described by resource area in the following
3 sections.

4 **4.1 AESTHETICS AND VISUAL RESOURCES**

5 **4.1.1 Analysis Methodology**

6 Impacts to visual resources are assessed by determining how and to what extent, the Proposed
7 Action would alter the overall visual character of the area. The impact category normally is related
8 to the disturbance of scenic vistas or the disturbance of the aesthetic integrity of an area caused by
9 development, construction, or demolition. Since none of the alternatives involve construction,
10 these typical considerations do not apply. Impacts may also occur within a visual viewshed of a
11 significant cultural resource. Any impacts relating to cultural resources are discussed in Section
12 4.3.

13 **4.1.2 Proposed Action**

14 The Proposed Action involves the purchase of approximately 100 acres of private property by
15 Dover AFB. Under the Proposed Action, no demolition or construction would occur; therefore,
16 there would be no impacts to aesthetics and visual resources.

17 **4.1.3 Alternative Action**

18 The Alternative Action includes all of the action elements included in the Proposed Action except
19 Dover AFB would pursue a third-party purchase of the property. Under this alternative, Dover
20 AFB would coordinate with a third party that may include a federal or state agency to purchase
21 the parcels of property with the agreement that the property would not be developed. Therefore,
22 there would be no impacts to aesthetics and visual resources.

23 **4.1.4 No Action Alternative**

24 Under the No Action Alternative, Dover AFB would not purchase the private property. Existing
25 conditions would remain unchanged and there would be no effects to aesthetic and visual
26 resources. While there would be no direct impact to aesthetics and visual resources from the No
27 Action, there would be no protection to aesthetics and visual resources from potential impacts as
28 a result of landowner activities.

29 **4.2 BIOLOGICAL RESOURCES**

30 **4.2.1 Analysis Methodology**

31 Determination of the significance of potential impacts to biological resources is based on: (1) the
32 importance (i.e., legal, commercial, recreational, ecological, or scientific) of the resource; (2) the
33 proportion of the resource that would be affected relative to its occurrence in the region; (3) the
34 sensitivity of the resource to proposed activities; and (4) the duration of ecological ramifications.
35 Impacts to biological resources would be considered significant if:

- 36 a) species or habitats of concern were significantly affected over relatively large areas;
37 b) disturbances resulted in reductions in the population size;

- 1 c) disturbances resulted in distribution of a special status species, or
- 2 d) if laws, codes, or ordinances protecting special status species were violated.

3 **4.2.2 Proposed Action**

4 The Proposed Action involves the purchase of approximately 100 acres of private property by
5 Dover AFB. No federally threatened and endangered species are known to exist on the private
6 property. Under the Proposed Action, no demolition or construction would occur; therefore, there
7 would be no impacts to vegetation, wildlife, or threatened and endangered species.

8 **4.2.3 Alternative Action**

9 The Alternative Action includes all of the action elements included in the Proposed Action except
10 Dover AFB would pursue a third-party purchase of the property. Under this alternative, Dover
11 AFB would coordinate with a third party that may include a federal or state agency to purchase
12 the parcels of property with the agreement that the property would not be developed. Therefore,
13 there would be no impacts to biological resources.

14 **4.2.4 No Action Alternative**

15 Under the No Action Alternative, Dover AFB would not purchase the private property. Existing
16 conditions would remain unchanged and there would be no effects to biological resources. While
17 there would be no direct impact to biological resources from the No Action, there would be no
18 protection to biological resources from potential impacts as a result of landowner activities.

19 **4.3 CULTURAL RESOURCES**

20 **4.3.1 Analysis Methodology**

21 The following analysis details the anticipated direct and indirect effects of the Proposed Action,
22 Alternative Action, and the No Action alternative on cultural resources. Potential effects were
23 identified through application of the Section 106 Criteria of Adverse Effects (36 CFR 800.5) to
24 historic properties, and through consultation with the Delaware Nation and Delaware Tribe of
25 Indians to learn about potential impacts to tribal cultural resources and practices.

26 Section 106 of the NHPA requires federal agencies to take into account the effects of their actions
27 on any district, site, object, building, or structure included in, or eligible for inclusion in, the
28 NRHP. An adverse effect occurs when an undertaking diminishes the integrity of those
29 characteristics of an historic property that qualify it for inclusion in the NRHP. Implementing
30 regulations for Section 106 provide specific criteria for identifying effects on historic properties.
31 The types of possible adverse effects include:

- 32 • Physical destruction of or damage to all or part of a property;
- 33 • Physical alteration of a property;
- 34 • Removal of a property from its historic location;
- 35 • Change in the character of a property's use or of physical features within a property's
36 setting that contribute to its historic significance;
- 37 • Introduction of visual, atmospheric, or auditory elements that diminish the integrity of a
38 property's significant historic features;

- 1 • Neglect of a property which causes its deterioration, except where such neglect and
2 deterioration are recognized qualities of a property of religious and cultural significance;
3 and
- 4 • Transfer, lease, or sale of property out of federal ownership or control without adequate
5 and legally enforceable restrictions or conditions to ensure long-term preservation of a
6 property's historic significance (36 CFR 800.5[a][2]).

7 Dover AFB applied the criteria of adverse effects to the activities planned under the Proposed
8 Action, Alternative Action, and No Action alternative to identify potential effects to historic
9 properties identified within the ROI.

10 Dover AFB consulted with the Delaware Nation and Delaware Tribe of Indians to identify their
11 concerns regarding potential impacts to tribally-significant resources. Delaware Nation concurred
12 with Dover AFB's proposed plan (Appendix A).

13 **4.3.2 Proposed Action**

14 One known archaeological site is located within the ROI, site 7K-D-1. This site has been
15 determined eligible for listing on the NRHP and this determination has been concurred with by the
16 Delaware SHPO. No other known resources are located within the ROI, though there is the
17 potential for intact buried archaeological resources. The Delaware SHPO indicated that should the
18 private property be purchased, additional information would be required before any ground
19 disturbing activity may take place, or any determination of effect may be issued (Appendix A).

20 Because no development or construction is planned within the ROI once Dover AFB has acquired
21 the parcels, no impacts to site 7K-D-1's physical integrity, location, or setting would occur under
22 the Proposed Action. This would also be the case for any potentially buried archaeological
23 deposits. Transfer of the parcels to federal ownership would result in a beneficial effect to the site,
24 as it would be subject to jurisdiction under federal laws and regulations that protect such resources
25 and consider impacts from undertakings to eligible archaeological properties. Also, by being
26 located on Dover AFB, the site would be proactively managed by base personnel in accordance
27 with the ICRMP. These beneficial effects would also apply to any buried archaeological deposits.
28 In addition, the ICRMP states that Phase I and II archaeological survey of the approximately 100
29 acres is programmed to be conducted after acquisition of the 5 parcels (DAFB 2017a), and that
30 this is considered to be a priority cultural resource management activity for the installation. This
31 would further help to manage and protect these resources.

32 Dover AFB has determined that the Proposed Action would have no impact on historic properties
33 under Section 106 of the NHPA. Dover AFB has consulted with the Delaware SHPO on this
34 determination and the Delaware SHPO indicated that should the private property be purchased,
35 additional information would be required before any ground disturbing activity may take place, or
36 any determination of effect may be issued (Appendix A).

37 **4.3.3 Alternative Action**

38 Under the Alternative Action, a third party would acquire the parcels in coordination with the DoD
39 and would agree that no development would occur on them. The agreement to have no
40 development occur would protect site 7K-D-1 and any buried archaeological deposits on the
41 parcels from impacts to their physical integrity, location, or setting, as with the Proposed Action.
42 Under the Alternative Action, the parcels would not be subject to federal laws and regulations that
43 protect and consider such resources, and the resources would not be proactively managed under

1 the purview of the ICRMP, and thus would not get the beneficial effects as described above for
2 the Proposed Action. However, by being located on State-administered lands, the resources would
3 be subject to additional protections under State law that they are not currently receiving.

4 **4.3.4 No Action Alternative**

5 The Delaware SHPO has determined that the private property proposed for potential purchase
6 includes the remaining portion of site 7K-D-1 and maintains the potential to contain archaeological
7 resources. Under the No Action Alternative, the private land parcels would remain in private
8 ownership. While there would be no direct impact to the resources from the No Action, there would
9 be no protections for site 7K-D-1 or buried archaeological deposits from potential impacts to
10 physical integrity, location, or setting from future landowner activities. Federal and state laws and
11 regulations that apply to cultural resources located on State or Federal land would not apply to the
12 resources, and the resources would remain at risk.

13 **4.4 GEOLOGICAL RESOURCES**

14 **4.4.1 Analysis Methodology**

15 In evaluating impacts to geological resources, protection of unique geologic features, minimization
16 of soil erosion, and the siting of facilities in relation to potential geologic hazards and soil
17 limitations are considered. If a proposed action were to substantially affect or be substantially
18 affected by any of these features, impacts may be considered significant. Generally, impacts
19 associated with earth resources can be avoided or minimized to a level of insignificance if proper
20 construction techniques, erosion control measures, geotechnical analysis, and structural
21 engineering designs are incorporated into project development.

22 Analysis of potential impacts to geological resources typically includes identification and
23 description of resources that could potentially be affected, examination of the potential effects that
24 an action may have on the resources, assessment of the significance of potential impacts, and
25 provision of management measures in the event that potentially significant impacts are identified.
26 Analysis of impacts to soil resources resulting from proposed activities examines the suitability of
27 locations for proposed operations and activities. Impacts to soil resources can result from earth
28 disturbance that would expose soil to wind or water erosion, or otherwise damage soil productivity
29 (e.g., through compaction).

30 **4.4.2 Proposed Action**

31 The Proposed Action involves the purchase of approximately 100 acres of private property by
32 Dover AFB. Under the Proposed Action, no demolition or construction would occur; therefore,
33 there would be no impacts to geological resources.

34 **4.4.3 Alternative Action**

35 The Alternative Action includes all of the action elements included in the Proposed Action except
36 Dover AFB would pursue a third-party purchase of the property. Under this alternative, Dover
37 AFB would coordinate with a third party that may include a federal or state agency to purchase
38 the parcels of property with the agreement that the property would not be developed. Therefore,
39 there would be no impacts to geological resources.

1 **4.4.4 No Action Alternative**

2 Under the No Action Alternative, Dover AFB would not purchase the private property. Existing
3 conditions would remain unchanged and there would be no effects to geological resources. While
4 there would be no direct impact to geological resources from the No Action, there would be no
5 protection to geological resources from potential impacts as a result of landowner activities.

6 **4.5 HEALTH AND SAFETY**

7 **4.5.1 Analysis Methodology**

8 Adverse impacts to safety would occur if the implementation of the Proposed Action resulted in a
9 substantial increase in risk to the safety of personnel, the public and property. The operational
10 changes associated with the Proposed Action and alternatives are considered to determine whether
11 additional or unique safety risks are associated with the activities.

12 **4.5.2 Proposed Action**

13 The Proposed Action involves the purchase of approximately 100 acres of private property by
14 Dover AFB in order to reduce security risks. The Proposed Action would reduce safety risks
15 because there would no longer be a need to escort landowners through Dover AFB property, thus
16 allowing Security Forces to focus on their primary mission of maintaining security at the base.

17 **4.5.3 Alternative Action**

18 The Alternative Action includes all of the action elements included in the Proposed Action except
19 Dover AFB would pursue a third-party purchase of the property. Under the Alternative Action, if
20 the third party is not a federal agency the parcels would not be subject to federal laws and
21 regulations regarding safety standards.

22 **4.5.4 No Action Alternative**

23 Under the No Action Alternative, Dover AFB would not purchase the private property and existing
24 conditions would remain unchanged. Security Forces would continue escorting landowners
25 through Dover AFB to access the private property. This situation increases security risks at Dover
26 AFB by requiring Security Forces to escort un-cleared civilians, which takes resources away from
27 the primary mission of maintaining security at the base.

28 **4.6 LAND USE**

29 **4.6.1 Analysis Methodology**

30 The methodology to assess impacts on individual land uses requires identifying those uses and
31 determining the degree to which they would be changed by the implementation of the Proposed
32 Action. Significance of potential land use impacts is based on the level of land use sensitivity in
33 areas affected by a proposed action. In general, land use impacts would be significant if they
34 would:

- 35 a) be inconsistent or in non-compliance with applicable land use plans or policies;
- 36 b) preclude the viability of existing land use;
- 37 c) preclude continued use or occupation of an area; or

- 1 d) be incompatible with adjacent or land uses in the vicinity to the extent that public health
2 or safety is threatened.

3 **4.6.2 Proposed Action**

4 The Proposed Action to purchase approximately 100 acres of private property would not impact
5 current land. The current zoning would likely be changed from an Agricultural Conservation
6 Residential District to Military Conservation Lands.

7 **4.6.3 Alternative Action**

8 The Alternative Action includes all of the action elements included in the Proposed Action except
9 Dover AFB would pursue a third-party purchase of the property. The Alternative Action would
10 not impact current land use since no demolition or construction would occur. Under this
11 alternative, Dover AFB would coordinate with a third party that may include a federal or state
12 agency to purchase the parcels of property with the agreement that the property would not be
13 developed. Therefore, there would be no impacts to land use. The current zoning would likely be
14 changed from an Agricultural Conservation Residential District to Military Conservation Lands.

15 **4.6.4 No Action Alternative**

16 Under the No Action Alternative, Dover AFB would not purchase the private property. Existing
17 conditions would remain unchanged and there would be no effects to land use. While there would
18 be no direct impact to land use from the No Action, there would be no protection from potential
19 impacts to land use as a result of landowner activities.

20 **4.7 WATER RESOURCES**

21 **4.7.1 Analysis Methodology**

22 Criteria for evaluating impacts related to water resources associated with the Proposed Action are
23 water availability, water quality, and adherence to applicable regulations. Impacts are measured
24 by the potential to reduce water availability to existing users, endanger public health or safety by
25 creating or worsening health hazards or safety conditions, or violate laws or regulations adopted
26 to protect or manage water resources. An impact to water resources would be significant if it
27 would:

- 28 a) adversely affect water quality or endanger public health by creating or worsening adverse
29 health hazard conditions;
- 30 b) threaten or damage unique hydrologic characteristics; or
- 31 c) violate established laws or regulations that have been adopted to protect or manage water
32 resources of an area.

33 **4.7.2 Proposed Action**

34 The Proposed Action involves the purchase of approximately 100 acres of private property by
35 Dover AFB. Under the Proposed Action, no demolition or construction would occur and there
36 would be no impacts to surface water, groundwater, wetlands, or floodplains. Dover AFB
37 submitted a negative consistency determination to DNREC to satisfy the federal coastal zone
38 consistency requirement. DNREC concurred with the determination (Appendix B).

1 **4.7.3 Alternative Action**

2 The Alternative Action includes all of the action elements included in the Proposed Action except
3 Dover AFB would pursue a third-party purchase of the property. Under this alternative, Dover
4 AFB would coordinate with a third party that may include a federal or state agency to purchase
5 the parcels of property with the agreement that the property would not be developed. Therefore,
6 there would be no impacts to water resources.

7 **4.7.4 No Action Alternative**

8 Under the No Action Alternative, Dover AFB would not purchase the private property. Existing
9 conditions would remain unchanged and there would be no effects to water resources. While
10 there would be no direct impact to water resources from the No Action, there would be no
11 protection from potential impacts as a result of landowner activities.

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5.0 CUMULATIVE EFFECTS

The CEQ regulations that implement the procedural provisions of NEPA defines cumulative impact as the “impact on the environment which results from the incremental impact of the action when added to past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time” (40 CFR 1508.7). Thus, the cumulative impacts of an action can be viewed as the total effects on a resource, ecosystem, or human community of that action and all other activities affecting that resource no matter what entity is taking the actions.

As discussed in Chapter 4, under the Proposed Action, no demolition or construction would occur and there would be no significant impacts to any resources. For most resources, a detailed cumulative impact assessment is not meaningful given the lack of impacts associated with implementation of the Proposed Action. For example, because the Proposed Action would not impact biological resources, it would not contribute to any cumulative biological resource impacts associated with past, present, and other reasonably foreseeable actions at Dover AFB or in the vicinity. The same conclusion is applicable to the following areas: aesthetics and visual resources, geological resources, land use, and water resources. Given this backdrop, Dover AFB focused this cumulative impact analysis on the following areas: cultural resources and health and safety.

In order to determine the potential cumulative impacts related to cultural resources and health and safety, Dover AFB reviewed past, present, and reasonably foreseeable projects (see Table 5.1-1, which summarizes past, present, and reasonably foreseeable projects on Dover AFB). Past and present projects are accounted for in the environmental baseline described in Chapter 3 of this EA.

Table 5.1-1. Past, Present, and Reasonably Foreseeable Projects on Dover AFB

Project Number	Project Name	Military Construction (MILCON) or Project Number	Fiscal Year
New Construction			
1	Security Forces Complex – Southeast and South Sides of Base	FJXT103000	2016
2	Install Concrete Pad and Gate	N/A	2017
3	Install Bird Netting and Vinyl Curtains in East Opening of Outsized Cargo B551	N/A	2018
4	Civil Engineering Compound – West and South Sides of Base	FJXT173000	N/A
5	Museum Conference Center	FJXT123002	N/A
Facility Renovation and/or Repair			
6	Building 212 (Child Development Center) Renovation	FJXT151032	N/A
7	Repair Multiple Roofs	N/A	2017
8	Repair HVAC and 1st Floor Interiors B203	N/A	2017

Project Number	Project Name	Military Construction (MILCON) or Project Number	Fiscal Year
9	Repair Exterior Finishes Air Traffic Control B502	N/A	2017
10	Repair Bay Fire Suppression System B550		2018
11	Repair Taxiway Echo	N/A	2018
12	Maintain N. Ramp Pavement - Replace Spall Damaged Slabs		
13	Maintain N. Ramp Pavement – Replace Spall Damaged Slabs	N/A	2018
14	Repair Munitions Gate Road Pavement	N/A	2018
15	Repair Computer Room Exhaust System B310	N/A	2018
16	Maintain Exterior Paint	N/A	2018
Infrastructure			
17	Recreational Vehicle Parking Expansion	FJXT115003	2011
18	Softball Field Improvements	FJXT121122	2013
19	Intersection of Atlantic Street and Evreux Street Realignment	FJXT111249	2015
20	Taxiway Echo Replacement	FJXT051003	2015
21	Type III Hydrant System Construction	FJXT073020	2017
22	Maintain Roofs Multiple Buildings	N/A	2017
23	Airfield Rubber Removal and Stripping	N/A	2017
24	Add/Alter Dorm Landscaping	N/A	2017
25	Aircraft Maintenance Hangar	N/A	2017
26	Stormwater Maintenance Papa Row Swale	N/A	2017
27	Maintain/Improve Running Trail	N/A	2017
28	Maintain/Improve Playing Fields	N/A	2017
29	Maintain Exterior Pain B401	N/A	2017
30	Improve Outdoor Patio B403	N/A	2017
31	Maintain Surface Refinishing Tennis and Basketball Courts	N/A	2017
32	Overhead Utilities Burying	N/A	2018
33	Construct LRS Personnel Door and Stairway for	N/A	2018

Project Number	Project Name	Military Construction (MILCON) or Project Number	Fiscal Year
	Fire Egress and Operations B639		
34	Repair (SUS) EOD Shop B727 and Construct Secure Parking	N/A	2018
Demolition			
35	PMEL Facility 913 and 919	N/A	2017
36	Building 459	N/A	N/A
37	Demolition and Reconstruction of the Dover AFB Middle School/Welch Elementary School	N/A	N/A
Other			
38	Environmental Compliance Support for Storm Water Programs	N/A	2017
39	Allied Support for DFAC Refrigerator Pad and Kitchen Receptacles B403	N/A	2017
40	Purchase 11.25 acres of property within safety easements	N/A	2018

Source: DAFB 2014, 2017b.

In addition to the projects identified in Table 5.1-1, discussions with community planners in Kent County indicated that no new developments or airspace actions are planned near Dover AFB (DAFB 2016b).

5.1 Cumulative Effects Analysis

Cultural Resources. As discussed in Section 4.3.2, because no development or construction is planned within the ROI once Dover AFB has acquired the parcels, no impacts to site 7K-D-1’s physical integrity, location, or setting would occur under the Proposed Action. This would also be the case for any potentially buried archaeological deposits. Transfer of the parcels to federal ownership would result in a beneficial effect to the site, as it would be subject to jurisdiction under federal laws and regulations that protect such resources and consider impacts from undertakings to eligible archaeological properties. Also, by being located on Dover AFB, the site would be proactively managed by base personnel in accordance with the ICRMP. These beneficial effects would also apply to any buried archaeological deposits. Because the Proposed Action would result in beneficial impacts to cultural resources, it would not contribute to any adverse cumulative impacts, and further analysis is not required.

Health and Safety. As discussed in Section 4.5.2, the Proposed Action would reduce safety risks because there would no longer be a need to escort landowners through Dover AFB property, thus allowing Security Forces to focus on their primary mission of maintaining security at the base. Because the Proposed Action would result in beneficial impacts to health and safety, it would not contribute to any adverse cumulative impacts, and further analysis is not required.

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- 2
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- 22 McAvoy, William A. 2013. *Rare Plants of Delaware*. April 2013. Available at
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- 28

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1 **7.0 LIST OF PREPARERS**

2 The following individual contributed to the preparation of this document:

3 Steven Seip
4 Dover AFB Acting Chief / Installation Management Flight
5 B.S., Civil Engineering
6 Years of Experience: 23
7

8 Delight Buenaflor
9 NEPA Specialist/Environmental Scientist
10 B.A., Biology
11 Years of Experience: 19
12

13 Maher Itani
14 QA/QC
15 M.E.A, Engineering Administration
16 Year of Experience: 28
17

18 Katie Rembert
19 Environmental Scientist
20 M.S., Environmental Science
21 Years of Experience: 13
22

23 Jay Rose
24 Senior NEPA Specialist
25 J.D.
26 Years of Experience: 25
27

28 Kathy Roxlau
29 Cultural Resources Specialist
30 M.A., Anthropology
31 Years of Experience: 27

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APPENDIX A
CORRESPONDENCE AND OUTREACH

1

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1 The following persons and agencies were contacted in the preparation of this EA:

2 **State Agencies**

3 Ms. Kimberly Cole

4 Delaware Coastal Program

5 Department of Natural Resources and Environmental Control

6 100 W. Water Street, Suite 7B

7 Dover, DE 19904

8 Ms. Gwenyth Davis

9 Delaware State Historic Preservation Office

10 21 The Gree, Suite B

11 Dover, DE 19901

12

13 **Tribes**

14 Ms. Susan Bachor

15 Delaware Tribe of Indians

16 Representative, Delaware Tribe Historic Preservation Office

17 P.O. Box 64

18 Pocono Lake, PA 18347

19

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State of Delaware
Historical and Cultural Affairs

21 The Green
Dover, DE 19901-3611

Phone: (302) 736,7400

Fax: (302) 739,5660

January 18, 2018

Mr. Steven M. Seip, P.E., Installation Management Flight Chief
Department of the Air Force
436th Civil Engineer Squadron
600 Chevron Avenue
Dover Air Force Base, DE 19902-5600

RE: UASF/DAFB: Potential Property Purchase, adjacent to Eagle Heights Housing Area
(SHPO Project Review #2017.12.07.01)

Dear Mr. Seip:

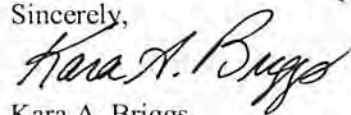
Thank you for your letter and information, received in this office December 7, 2017, requesting Section 106 consultation regarding the potential purchase of approximately 100 acres of private property adjacent to the existing Dover Air Force Base (DAFB) property line along the southwest boundary of the Eagle Heights housing area.

A review of this site in conjunction with the submitted materials has determined that the property proposed for potential purchase includes the remaining portion of archaeological site 7K-D-1 and maintains the potential to contain archaeological resources.

Should the land be purchased, additional information is required before any ground disturbing activity may take place, or any determination of effect may be issued

If you require further information or have any questions, please contact me at 302-736-7433 or at Kara.Briggs@state.de.us.

Sincerely,



Kara A. Briggs
Architectural Historian

CC: Gwentyth A. Davis, Deputy SHPO, Division of Historical & Cultural Affairs
Craig Lukezic, Archaeologist, Division of Historical & Cultural Affairs





DEPARTMENT OF THE AIR FORCE
436TH Civil Engineering Squadron (AMC)
Dover Air Force Base, Delaware 19902

RECEIVED
Historical & Cultural Affairs
DEC 7 '17 PM 1:05

436 CES/CEI
600 Chevron Avenue
Dover AFB DE 19902-5600

DEC 6 7 2017

Ms. Gwenyth Davis
Delaware State Historic Preservation Office
21 The Green, Suite B
Dover DE 19901

Dear Ms. Davis,

In accordance with 36 CFR 800.3(c) (3), DAFB is requesting a Section 106 consultation with your office with regards to the potential purchase of approximately 100 acres of private property adjacent to our existing property line along the southwest boundary of the Eagle Heights housing area, as shown on the attached location map.

The property proposed for potential purchasing includes the remaining portion of archeological site 7K-D-1 that is not currently on Dover AFB property. No ground disturbing activities are proposed at this time. Should any future ground disturbing activities be proposed within this area, additional consultation will be necessary to determine if they will result in adverse effects and if additional archaeological investigations are necessary.

Dover AFB has evaluated and determined that this land purchase qualifies as a Finding of No Adverse Effect. If you have any questions or comments pertaining to this correspondence, please contact myself at 677-6839 or Thomas Creaven 677-6709.

Sincerely

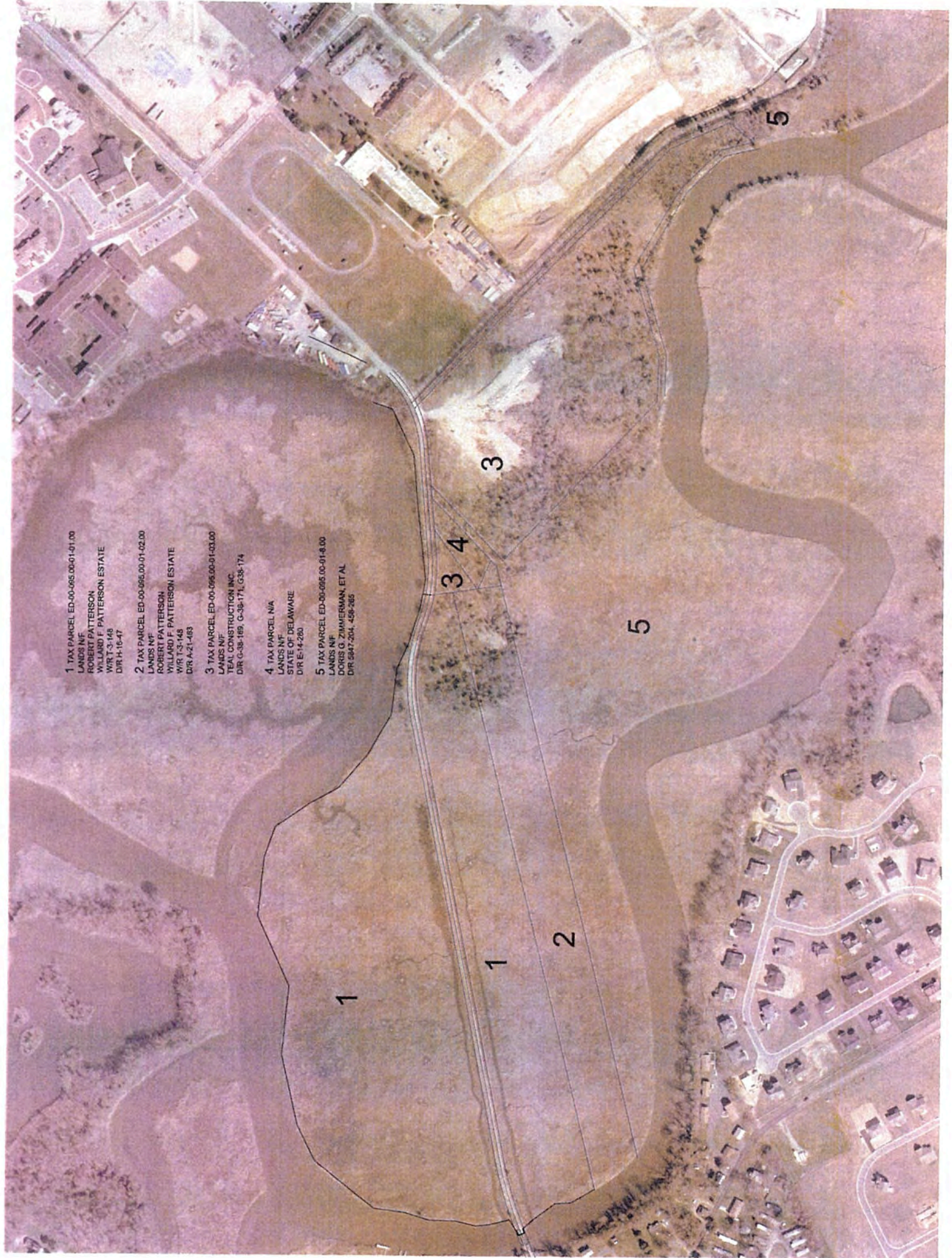
A handwritten signature in cursive script that reads "Steven M. Seip".

STEVEN M. SEIP, P.E.
Chief, Installation Management Flight

Attachment:
AMCM position map with area highlighted

Deliver!

- 1 TAX PARCEL ED-00-095.00-01-01.00
LANDS NF
ROBERT PATTERSON
WILLARD F. PATTERSON ESTATE
W/R T-3-148
D/R H-16-47
- 2 TAX PARCEL ED-00-095.00-01-02.00
LANDS NF
ROBERT PATTERSON
WILLARD F. PATTERSON ESTATE
W/R T-3-148
D/R A-21-483
- 3 TAX PARCEL ED-00-095.00-01-03.00
LANDS NF
TEAL CONSTRUCTION INC.
D/R G-38-169, G-38-171, G-38-174
- 4 TAX PARCEL N/A
LANDS NF
STATE OF DELAWARE
D/R E-14-280
- 5 TAX PARCEL ED-00-095.00-01-04.00
LANDS NF
DORIS G. ZIMMERMAN, ET AL
D/R 8847-204, 456-265



Buenaflor, Delight

From: SEIP, STEVEN M GS-13 USAF AMC 436 CES/CEIE <steven.seip@us.af.mil>
Sent: Monday, March 19, 2018 10:12 AM
To: Buenaflor, Delight
Cc: DISALVO, LEE S GS-12 USAF AMC 436 CES/CEIE
Subject: FW: RE: Purchase of 100 acres adjacent to Dover AFB, Delaware

FYI

From: Kimberly Penrod [mailto:kpenrod@delawarenation.com]
Sent: Monday, March 19, 2018 9:51 AM
To: SEIP, STEVEN M GS-13 USAF AMC 436 CES/CEIE <steven.seip@us.af.mil>
Subject: [Non-DoD Source] RE: Purchase of 100 acres adjacent to Dover AFB, Delaware

Steven,

The protection of our tribal cultural resources and tribal trust resources will take all of us working together. We look forward to working with you and your agency.

With the information you have submitted we can concur at present with this proposed plan.

As with any new project, we never know what may come to light until work begins.

The Delaware Nation asks that you keep us up to date on the progress of this project and if any discoveries arise please contact us immediately.

Our department is trying to go as paper free as possible. If it is at all feasible for your office to send email correspondence we would greatly appreciate.

If you need anything additional from me please do not hesitate to contact me.

Respectfully,

*Kim Penrod
Delaware Nation
Director, Cultural Resources/106
Archives, Library and Museum
31064 State Highway 281
PO Box 825
Anadarko, OK 73005
(405)-247-2448 Ext. 1403 Office
(405)-924-9485 Cell
kpenrod@delawarenation.com*

Unless someone like you cares a whole awful lot, nothing is going to get better. It's not. ~Dr. Seuss

CONFIDENTIALITY NOTE:

This e-mail (including attachments) may be privileged and is confidential information covered by the Electronic Communications Privacy Act 18 U.S.C. 2510-2521 and any other applicable law, and is intended only for the use of the individual or entity named herein. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any retention, dissemination, distribution or copying of this communication is strictly prohibited. Although this e-mail and any attachments are believed to be free of any virus or other defect that might affect any computer system in to which it is received and opened, it is the responsibility of the recipient to ensure that it is virus free and no responsibility is accepted by Delaware Nation or the author hereof in any way from its use. If you have received this communication in error, please immediately notify us by return e-mail. Thank you.

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STATE OF DELAWARE
DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL
OFFICE OF THE SECRETARY

DELAWARE COASTAL
MANAGEMENT PROGRAM

100 W. WATER STREET, SUITE 7B
DOVER, DELAWARE 19904

Phone: (302) 739-9283
Fax: (302) 739-2048

March 2, 2018

Steven M. Sisp
Department of the Air Force
436th Civil Engineer Squadron/CEI
600 Chevron Ave
Dover AFB, Delaware 19902-5600

RE: Delaware Coastal Management Program Federal Consistency Determination
NEPA Evaluation – Property Acquisition, Eagle Heights Vicinity (FC 2018.0028)

Dear Mr. Scip,

The Delaware Coastal Management Program (DCMP) has received and reviewed the above reference submission for the development of an environmental assessment for NEPA compliance for the purchase of approximately 100 acres of land located adjacent to the Dover AFB Eagle Heights housing area.

Based upon our review and pursuant to National Oceanic and Atmospheric Administration regulations (15 CFR 930), the DCMP concurs with your negative consistency determination that the development of this environmental assessment will have no significant impacts on Delaware's coastal uses or resources. However, this concurrence does not include any potential land disturbing activities that may occur in the future. If the Dover AFB decides to conduct future activities on these lands, further coordination with this office may be necessary.

If you have any questions about this determination, please feel free to contact me or Bonnie Arvay of my staff at (302) 739-9283.

Sincerely,

A handwritten signature in blue ink, appearing to read "Kimberly B. Cole".

Kimberly B. Cole, Administrator
Delaware Coastal Management Program



DEPARTMENT OF THE AIR FORCE
436th Civil Engineer Squadron (AMC)
Dover Air Force Base, Delaware 19902-5600

436 CES/CEI
600 Chevron Ave
Dover AFB DE 19902-5600

Kimberly Cole, Administrator
Delaware Coastal Programs
Dept. of Natural Resources & Environmental Control
100 W. Water Street, Suite 7B
Dover DE 19904



SUBJECT: Negative Determination for Purchasing of 100 Acres by Dover AFB Under National Environmental Policy Act (NEPA) Evaluation

Dear Ms. Cooksey

Dover AFB is preparing an environmental assessment to comply with NEPA for the potential purchase of approximately 100 acres of private property adjacent to our existing property line along the southwest boundary of the Eagle Heights housing area, as shown on the attached location map. The proposed action in the environmental assessment is for purchasing the property and no subsequent land disturbance. If Dover AFB does purchase the property and decides on subsequent land disturbance projects, additional NEPA evaluations will be conducted. The draft environmental assessment for purchasing the property, which will be released for public comment in the next few months, identified no significant impacts to the Coastal Zone Management Program or other environmental media. With no significant impacts to environmental media, a draft Finding of No Significant Impact has also been prepared which has led to our submission of this negative determination as defined in 15 CFR 930.35.

Please direct any questions or comments regarding this determination to Mr. Lee DiSalvo at (302) 677-4753 or Mr. Doug Zeiters at (302) 677-6840.

Sincerely

STEVEN M. SEIP, P.E.
Chief, Installation Management Flight

Attachment:
Project Location Map

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APPENDIX B
BIOLOGICAL RESOURCES SUPPORT INFORMATION

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USFWS INFORMATION FOR PLANNING AND CONSULTATION

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IPaC Information for Planning and Consultation **U.S. Fish & Wildlife Service**

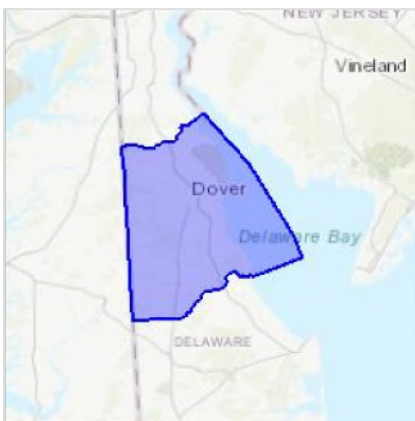
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Kent County, Delaware



Local office

Chesapeake Bay Ecological Services Field Office

☎ (410) 573-4599

📠 (410) 266-9127

177 Admiral Cochrane Drive
Annapolis, MD 21401-7307

<http://www.fws.gov/chesapeakebay/>

<http://www.fws.gov/chesapeakebay/endsppweb/ProjectReview/Index.html>

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species

¹ are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service.

1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Flowering Plants

NAME	STATUS
Small Whorled Pogonia <i>Isotria medeoloides</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1890	Threatened

Swamp Pink *Helonias bullata*

Threatened

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/4333>

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1](#) and the Bald and Golden Eagle Protection Act².

Any activity that results in the take (to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct) of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service

³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

The birds listed below are [USFWS Birds of Conservation Concern](#) that might be affected by activities in this location. The list does not contain every bird you may find in this location, nor is it guaranteed that all of the birds on the list will be found on or near this location. To get a better idea of the specific locations where certain species have been reported and their level of occurrence, please refer to resources such as the [E-bird data mapping tool](#) (year-round bird sightings by birders and the general public) and [Breeding Bird Survey](#) (relative abundance maps for breeding birds). Although it is important to try to avoid and minimize impacts to all birds, special attention should be given to the birds on the list below. To get a list of all birds potentially present in your project area, visit the [E-bird Explore Data Tool](#).

NAME	BREEDING SEASON
American Oystercatcher <i>Haematopus palliatus</i> https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Black Rail <i>Laterallus jamaicensis</i> https://ecos.fws.gov/ecp/species/7717	Breeds Mar 1 to Sep 15
Black Skimmer <i>Rynchops niger</i> https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i>	Breeds May 20 to Jul 31
Buff-breasted Sandpiper <i>Tryngites subruficollis</i>	Breeds elsewhere
Canada Warbler <i>Wilsonia canadensis</i>	Breeds May 20 to Aug 10
Clapper Rail <i>Rallus longirostris</i> https://ecos.fws.gov/ecp/species/8937	Breeds Apr 10 to Oct 31
Dunlin <i>Calidris alpina hudsonia</i>	Breeds elsewhere
Eastern Whip-poor-will <i>Antrostomus vociferus</i>	Breeds May 1 to Aug 20
Gull-billed Tern <i>Gelochelidon nilotica</i> https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Hudsonian Godwit <i>Limosa haemastica</i>	Breeds elsewhere
Kentucky Warbler <i>Oporornis formosus</i>	Breeds Apr 20 to Aug 20
King Rail <i>Rallus elegans</i> https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5
Least Tern <i>Sterna antillarum</i>	Breeds Apr 20 to Sep 10
Lesser Yellowlegs <i>Tringa flavipes</i> https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Long-eared Owl <i>asio otus</i> https://ecos.fws.gov/ecp/species/3631	Breeds elsewhere
Nelson's Sparrow <i>Ammodramus nelsoni</i>	Breeds May 15 to Sep 5
Prairie Warbler <i>Dendroica discolor</i>	Breeds May 1 to Jul 31

Prothonotary Warbler <i>Protonotaria citrea</i>	Breeds Apr 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i>	Breeds May 10 to Sep 10
Red-throated Loon <i>Gavia stellata</i>	Breeds elsewhere
Ruddy Turnstone <i>Arenaria interpres morinella</i>	Breeds elsewhere
Rusty Blackbird <i>Euphagus carolinus</i>	Breeds elsewhere
Saltmarsh Sparrow <i>Ammodramus caudacutus</i>	Breeds May 15 to Sep 5
Seaside Sparrow <i>Ammodramus maritimus</i>	Breeds May 10 to Aug 20
Semipalmated Sandpiper <i>Calidris pusilla</i>	Breeds elsewhere
Short-billed Dowitcher <i>Limnodromus griseus</i> https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Snowy Owl <i>Bubo scandiacus</i>	Breeds elsewhere
Whimbrel <i>Numenius phaeopus</i> https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet <i>Tringa semipalmata</i>	Breeds Apr 20 to Aug 5
Wood Thrush <i>Hylocichla mustelina</i>	Breeds May 10 to Aug 31

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in your project's counties during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence

across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

- The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote when the bird breeds in the Bird Conservation Region(s) in which your project lies. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the counties of your project area. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

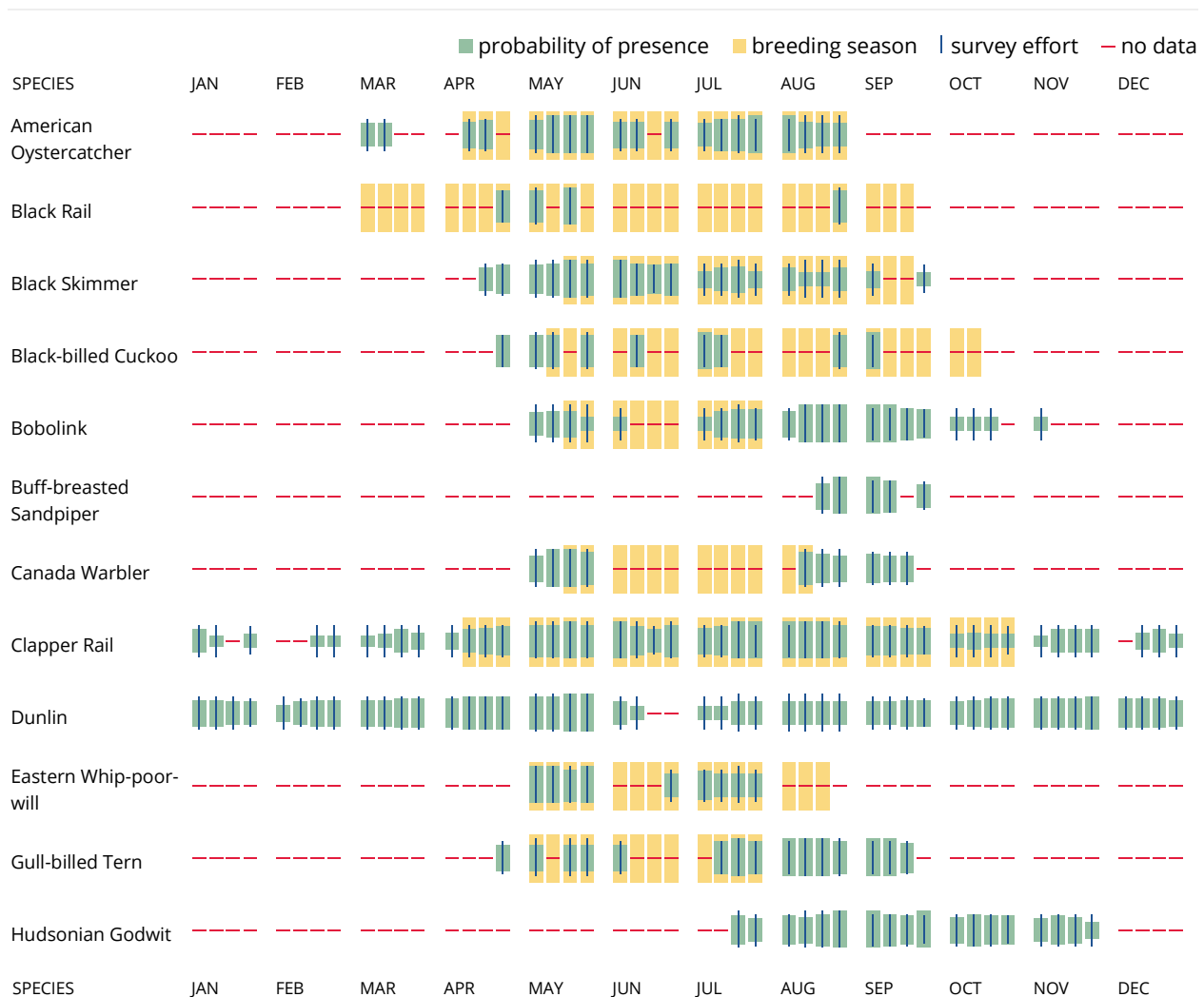
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

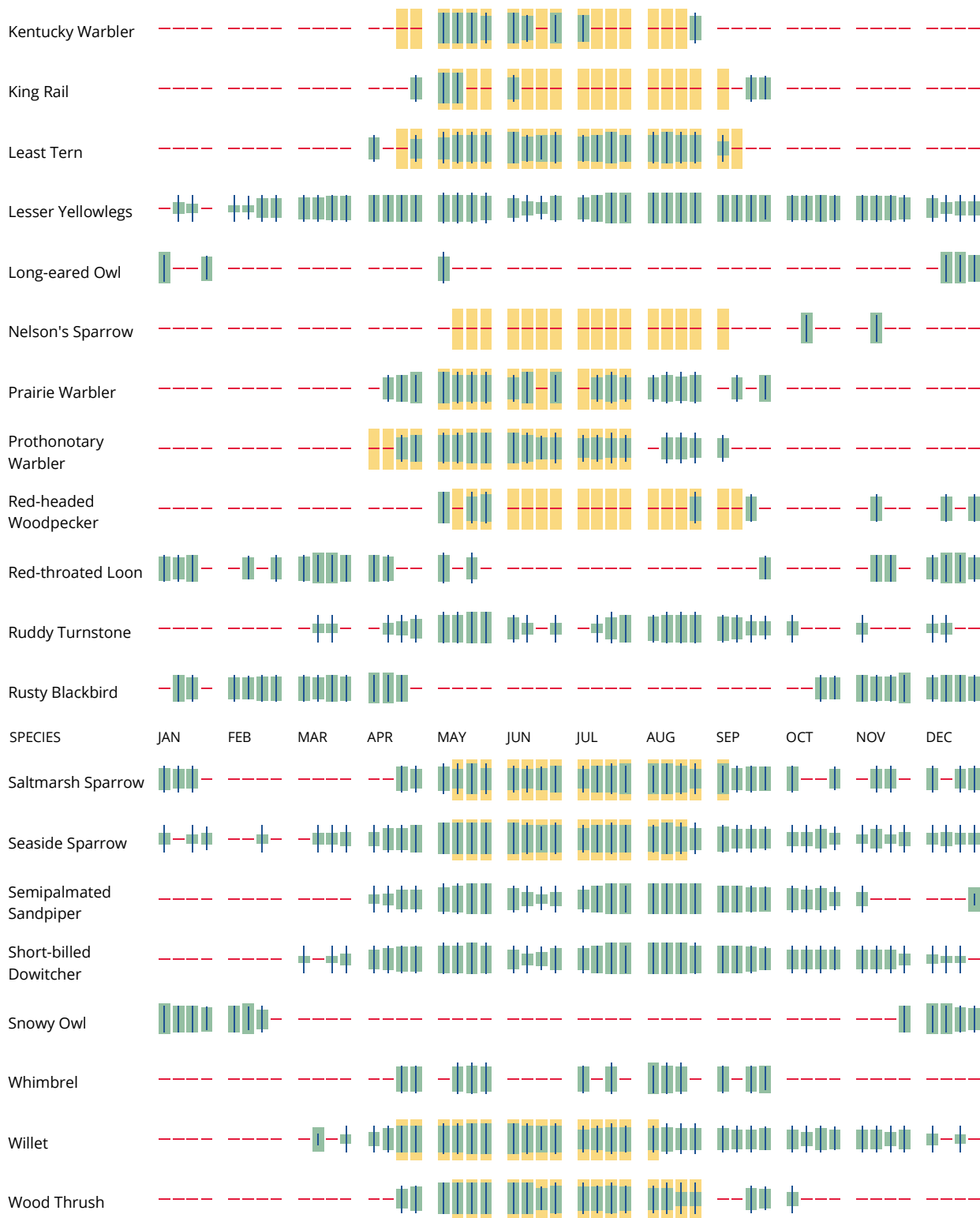
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Such measures are particularly important when birds are most likely to occur in the project area. To see when birds are most likely to occur in your project area, view the Probability of Presence Summary. Special attention should be made to look for nests and avoid nest destruction during the breeding season. The best information about when birds are breeding can be found in [Birds of North America \(BNA\) Online](#) under the "Breeding Phenology" section of each species profile. Note that accessing this information may require a [subscription](#). [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) that might be affected by activities in your project location. These birds are of priority concern because it has been determined that without additional conservation actions, they are likely to become candidates for listing under the [Endangered Species Act \(ESA\)](#).

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#). The AKN list represents all birds reported to be occurring at some level throughout the year in the counties in which your project lies. That list is then narrowed to only the Birds of Conservation Concern for your project area.

Again, the Migratory Bird Resource list only includes species of particular priority concern, and is not representative of all birds that may occur in your project area. Although it is important to try to avoid and minimize impacts to all birds, special attention should be made to avoid and minimize impacts to birds of priority concern. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird entry on your migratory bird species list indicates a breeding season, it is probable the bird breeds in your project's counties at some point within the time-frame specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.


Facilities


Wildlife refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuges:

REFUGE	ACRES
Bombay Hook National Wildlife Refuge	30,886.55 acres

 (302) 653-9345

 (302) 653-0684

2591 Whitehall Neck Road
Smyrna, DE 19977-2912

<https://www.fws.gov/refuges/profiles/index.cfm?id=51550>

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

WETLAND INFORMATION IS NOT AVAILABLE AT THIS TIME

This can happen when the National Wetlands Inventory (NWI) map service is unavailable, or for very large projects that intersect many wetland areas. Try again, or visit the [NWI map](#) to view wetlands at this location.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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1 **USFWS ENVIRONMENTAL CONSERVATION ONLINE SYSTEM SPECIES REPORT**

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U.S. Fish & Wildlife Service

Search ECOS



ECOS Environmental Conservation Online System

Conserving the Nature of America

[ECOS](#) / [Species Reports](#) / Species By County Report

Species By County Report

The following report contains Species that are known to or are believed to occur in this county. Species with range unrefined past the state level are now excluded from this report. If you are looking for the Section 7 range (for Section 7 Consultations), please visit the [IPaC](#) application.

County: Kent, Delaware

[Download CSV](#)

Need to contact a FWS field office about a species? Follow [this link](#) to find your local FWS Office.

Group	Name	Population	Status	Lead Office	Recovery Plan	Recovery Plan Action Status	Recovery Plan Stage
Birds	Red knot (<i>Calidris canutus rufa</i>)	Wherever found	Threatened	New Jersey Ecological Services Field Office			
Flowering Plants	Seaside alder (<i>Alnus maritima</i>)	Wherever found	Under Review				
Flowering Plants	Small whorled pogonia (<i>Isotria medeoloides</i>)	Wherever found	Threatened	New England Ecological Services Field Office	Small Whorled Pogonia	Implementation Progress	Final Revisi 1
Flowering Plants	Swamp pink (<i>Helonias bullata</i>)	Wherever found	Threatened	New Jersey Ecological Services Field Office	Swamp Pink (Helonias bullata) Recovery Plan	Implementation Progress	Final
Flowering Plants	Canby's dropwort (<i>Oxypolis canbyi</i>)	Wherever found	Endangered	South Carolina Ecological Services	Canby's Dropwort	Implementation Progress	Final

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PHOTOGRAPHS AND PHOTO REFERENCE MAP

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Location 1.

Lebanon Road Gate



December 2017

Location 2.



December 2017

Location 3.



December 2017

Location 4.



December 2017

Location 5.



December 2017

Location 6.



December 2017

Location 7.



December 2017



Location 8.

December 2017

Location 9.



December 2017



Location 10.

December 2017



Cypress Mill Rd

Branch Rd

Raylen Ct

Cypress

10.

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