



**Environmental Assessment -
Proposed Bridge to Bridge
Multi-Use Pathway on
Santa Rosa Island, Florida**

Okaloosa County, Florida



October
2020



ACRONYMS AND ABBREVIATIONS

ACAM	Air Conformity Applicability Model	FDEP	Florida Department of Environmental Protection
AFB	Air Force Base	FDOT	Florida Department of Transportation
AFI	Air Force Instruction	FE	federally endangered
AFOSH	Air Force Occupational Safety and Health	FEMA	Federal Emergency Management Agency
AOC	Area of Concern	FGTS	Florida Greenways and Trails System
APE	area of potential effect	FHWA	Federal Highway Administration
AST	aboveground storage tank	FNAI	Florida Natural Areas Inventory
BGEPA	Bald and Golden Eagle Protection Act	FONPA	Finding of No Practicable Alternative
BMP	best management practice	FONSI	Finding of No Significant Impact
CEQ	Council on Environmental Quality	FT	federally threatened
CFR	Code of Federal Regulations	FWC	Florida Fish and Wildlife Conservation Commission
CO	carbon monoxide	GHG	greenhouse gas
CO _{2e}	carbon dioxide equivalent	HAPC	habitat area of particular concern
CTL	Cleanup Target Level	ICRMP	Integrated Cultural Resources Management Plan
CWA	Clean Water Act	IRP	Installation Restoration Program
CZMA	Coastal Zone Management Act	Leq	equivalent sound level
dB	decibels	MBTA	Migratory Bird Treaty Act
dba	A-weighted decibels	MMPA	Marine Mammal Protection Act
DNL	day-night sound level	MMRP	Military Munitions Response Program
DoD	Department of Defense	mph	miles per hour
EA	Environmental Assessment	MSA	Magnuson-Stevens Fisheries Management and Conservation Act
EFH	Essential Fish Habitat	NAAQS	National Ambient Air Quality Standards
EISA	Energy Independence and Security Act		
EO	Executive Order		
ERP	Environmental Restoration Program		
ESA	Endangered Species Act		
FAC	Florida Administrative Code		
FCMP	Florida Coastal Management Program		

NEPA	National Environmental Policy Act	USC	United States Code
NFA	no further action	USCG	U.S. Coast Guard
NHPA	National Historic Preservation Act	USEPA	U.S. Environmental Protection Agency
NMFS	National Marine Fisheries Service	USFWS	U.S. Fish and Wildlife Service
NO _x	nitrogen oxides	UST	underground storage tank
NPDES	National Pollutant Discharge Elimination System	VOC	volatile organic compound
NRHP	National Register of Historic Places		
NRO	Natural Resources Office		
NFWFMD	Northwest Florida Water Management District		
O ₃	ozone		
OSHA	Occupational Safety and Health Administration		
PM ₁₀	particulate matter measured less than or equal to 10 microns in diameter		
PM _{2.5}	particulate matter measured less than or equal to 2.5 microns in diameter		
POI	Point of Interest		
PPE	personal protective equipment		
RCRA	Resources Conservation and Recovery Act		
ROI	region of influence		
SHPO	State Historic Preservation Officer		
SO _x	sulfur oxides		
SPCC	Spill Prevention, Control, and Countermeasure		
SSC	state species of concern		
ST	state threatened		
SWPPP	Stormwater Pollution Prevention Plan		
tpy	tons per year		
USAF	U.S. Air Force		

Cover Sheet
Environmental Assessment -
Proposed Bridge to Bridge Multi-Use Pathway on Santa Rosa Island, Florida

Proponent: Okaloosa County.

Responsible Agencies: U.S. Air Force (USAF) and Eglin Air Force Base (AFB).

Participating Agency: Florida Department of Transportation.

Affected Location: Santa Rosa Island, Florida, which includes portions of Okaloosa Island and Eglin AFB, Florida.

Report Designation: Environmental Assessment (EA).

Abstract: This EA describes Okaloosa County's proposal to construct and operate a paved multi-use pathway entirely within the Florida Department of Transportation right-of-way (on Okaloosa Island) and easement (on Eglin AFB) along a portion of U.S. 98 on Santa Rosa Island. The pathway would span from Pier Road, which is the location of the east touchdown for the proposed Brooks Bridge replacement (separate project), to the western terminus of Marler Bridge. The pathway would be 12 feet wide and 4.3 miles long. The Proposed Action includes construction of the pathway, safety barriers where necessary, environmental fencing to protect Eglin AFB protective buffers and areas (protected species and habitat areas), and upgraded parking areas at three Eglin AFB-designated beach access points adjacent to the pathway. The Proposed Action also includes general maintenance and repair of the pathway, safety barriers, environmental fencing, upgraded parking areas, and Eglin AFB property fencing adjacent to the pathway; installation of signage and enforcement of parking restrictions along the pathway; and sand removal and erosion control for the pathway and upgraded parking areas.

Under the No Action Alternative, Okaloosa County would not construct or operate a paved multi-use pathway along U.S. 98 from Pier Road to Marler Bridge. Pedestrians would continue to use narrow sidewalks that offer limited to no protection from vehicle traffic and no connectivity between Fort Walton Beach and Destin. Cyclists would continue to use existing bicycle lanes (intermittently marked and not present along the entire length of the project area) and paved shoulders that offer limited to no protection from vehicle traffic.

This EA analyzes the potential for significant environmental and socioeconomic impacts associated with the Proposed Action and alternatives and aids in determining whether a Finding of No Significant Impact (or Finding of No Significant Impact/Finding of No Practicable Alternative if applicable) can be prepared or an Environmental Impact Statement is required.

Written comments and inquiries regarding this document should be directed by mail to Mr. Michael Spaits, 96th Test Wing/Public Affairs, 101 W. D Avenue, Room 238, Eglin AFB, FL 32542, or by email to michael.spaits@us.af.mil.

Privacy Advisory

The EA will be provided for public comment in accordance with the National Environmental Policy Act, Council on Environmental Quality regulations for implementing the National Environmental Policy Act (Title 40 Code of Federal Regulations §§ 1500–1508), and 32 Code of Federal Regulations § 989, *Environmental Impact Analysis Process*.

The Environmental Impact Analysis Process provides an opportunity for public input on USAF decision making, allows the public to offer input on alternative ways for USAF to accomplish what it is proposing, and solicits comments on USAF's analysis of environmental impacts.

Public commenting allows USAF to make better-informed decisions. Letters or other written or oral comments provided may be published in this EA. As required by law, comments provided will be addressed in this EA and made available to the public. Providing personal information is voluntary. Private addresses will be compiled to develop a mailing list for those requesting copies of this EA. However, only the names of the individuals making comments and specific comments will be disclosed. Personal information, home addresses, telephone numbers, and email addresses will not be published in this EA.

**ENVIRONMENTAL ASSESSMENT -
PROPOSED BRIDGE TO BRIDGE MULTI-USE PATHWAY
ON SANTA ROSA ISLAND, FLORIDA**

OKALOOSA COUNTY, FLORIDA

OCTOBER 2020

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- B: Coastal Consistency Determination
- C: Air Emissions Calculations

1. Purpose of and Need for the Proposed Action

1.1 Introduction

Okaloosa County proposes to construct and operate a paved multi-use pathway entirely within the Florida Department of Transportation (FDOT) right-of-way (on Okaloosa Island) and easement (on Eglin Air Force Base [AFB]) along a portion of U.S. 98 (Miracle Strip Parkway Southeast) on Santa Rosa Island. The pathway would span from Pier Road, which is the location of the east touchdown for the proposed Brooks Bridge replacement (separate project), to the western terminus of the William Marler (Marler) Bridge. The pathway would be 12 feet wide (enabling movement in both directions) and 4.3 miles long. The project area includes a portion of Okaloosa Island (an unincorporated area of Okaloosa County) and a portion of Eglin AFB. Consequently, Eglin AFB provided Okaloosa County approval to move forward with obtaining an easement for the pathway with several environmental, safety, and operational conditions, which are incorporated into the Proposed Action. The Proposed Action includes construction of the pathway, safety barriers where necessary, environmental fencing to protect Eglin AFB protective buffers and areas (protected species and habitat areas), and upgraded parking areas at three Eglin AFB-designated beach access points adjacent to the pathway. The proposed pathway crosses the existing parking areas; therefore, the parking areas need to be moved and reconstructed. The Proposed Action also includes general maintenance and repair of the pathway, safety barriers, environmental fencing, upgraded parking areas, and Eglin AFB property fencing adjacent to the pathway; installation of signage and enforcement of parking restrictions along the pathway; and sand removal and erosion control for the pathway and upgraded parking areas.

Because part of the project area is on Eglin AFB, the proposed activities that would affect that property are subject to U.S. Air Force (USAF) approvals, regulations, and policies. Therefore, Eglin AFB is a responsible agency for preparation of this Environmental Assessment (EA). Additionally, because the project would occur within the FDOT right-of-way (Okaloosa Island) and easement (Eglin AFB), FDOT is a participating agency for the preparation of this EA.

This EA analyzes the potential for the Proposed Action and alternatives to have significant environmental and socioeconomic impacts. It is being prepared in accordance with the National Environmental Policy Act (NEPA); the Council on Environmental Quality (CEQ) Regulations for Implementing NEPA (Title 40 Code of Federal Regulations [CFR] §§ 1500–1508); and the USAF-implementing regulations for NEPA, 32 CFR § 989, as amended.

This EA is organized into six sections, plus appendices. **Section 1** provides historical and background information, the project location, and the purpose of and need for the Proposed Action. **Section 2** contains a description of the Proposed Action and alternatives, including the No Action Alternative. **Section 3** describes the existing conditions of the affected environment and identifies the potential environmental consequences, including cumulative impacts, of implementing all reasonable alternatives. **Section 4** includes environmental management requirements and actions. **Section 5** provides the names of those who prepared this EA. **Section 6** lists the references used in the preparation of this EA. **Appendix A** includes stakeholder and public involvement materials, including agency consultation documents.

Appendix B contains materials for the Coastal Consistency Determination. **Appendix C** contains supporting documentation for the air emissions calculations.

1.2 Location and Background

Santa Rosa Island is a barrier island in the northwestern Florida panhandle. It is in Okaloosa County south of Fort Walton Beach, Florida, and rests between Choctawhatchee Bay and the Gulf of Mexico. The project area is between Fort Walton Beach and Destin, Florida, and includes portions of Okaloosa Island (part of Santa Rosa Island) and Eglin AFB. The 4.3-mile-long project area is the land within the FDOT right-of-way (Okaloosa Island) and easement (Eglin AFB) north and south of U.S. 98 from Pier Road to the western terminus of Marler Bridge on Santa Rosa Island (see **Figure 1-1**). The entire project area is within the 100-year floodplain.

The project area includes residential, commercial, recreational, and military (Eglin AFB) land. The Eglin AFB portion of the project area is part of the Eglin Reservation used to support military testing and training. The project area includes Eglin AFB Test and Training Areas SRI-5A, SRI-5B, SRI-5C, and SRI-6A-D and seven Eglin AFB access points, three of which are public beach access points with parking areas (i.e., Airman Beach, Matterhorn Beach, and Princess Beach). **Figure 1-2** shows the Airman Beach access point parking area, which is similar to the other two Eglin AFB-designated beach access point parking areas. Access to the Eglin AFB-designated beach access point parking areas requires an Eglin AFB Beach Permit (available to civilians and Department of Defense [DoD] personnel), and permit compliance is monitored by Eglin AFB Security Forces. Use of the parking areas is heaviest during the summer and sometimes exceeds capacity.

Eglin AFB closed public access to the West Jetties Parking public beach access point in May 2020, during preparation of this EA. Additionally, Eglin AFB placed semi-permanent barriers along the north and south sides of U.S. 98 west of Marler Bridge to prevent vehicles from illegally parking along this portion of U.S. 98. Currently, Eglin AFB is considering a permanent FDOT-approved engineering solution for a long-term remedy. When West Jetties Parking was in use, it sometimes exceeded parking capacity, had poor ingress and egress, lacked an entrance sign, and was only accessible via the eastbound lanes of U.S. 98. The poor ingress and egress issues included a short turn lane into the parking area from U.S. 98 and a small paved driveway area to transition between U.S. 98 and the gravel parking area.

Brooks Bridge is proposed to be replaced with a higher bridge that includes an extended eastern touchdown that would end near Pier Road. The replacement bridge is proposed to have a 12-foot-wide multi-use path on each side (westbound and eastbound). Hence, the project area for the proposed bridge-to-bridge multi-use path spans from Pier Road (proposed touchdown for the Brooks Bridge replacement) to the western terminus of Marler Bridge.

U.S. 98 along the project area is a four-lane roadway with a grass median that separates the westbound and eastbound lanes. The speed limit for U.S. 98 along the project area ranges from 35 to 55 miles per hour (mph). Bicycle facilities along the project area include an intermittently marked bicycle lane on the eastbound side of U.S. 98 from Pier Road to the elevated pedestrian walkway above U.S. 98 (approximately 0.3 mile), an intermittently marked bicycle lane on the

Figure 1-1. Project Area



Figure 1-2. Airman Beach Access Point Parking Area



westbound side of U.S. 98 between Pier Road and the central portion of the project area (approximately 2.8 miles), and paved shoulders on both sides of U.S. 98 where there are no bicycle lanes. The bicycle lanes and paved shoulders offer cyclists little to no protection from vehicle traffic. The pedestrian pathways along the project area consist of an approximately 0.1-mile-long sidewalk along the north side of U.S. 98 (0.3 miles east of Pier Road) and an approximately 0.6-mile-long sidewalk along the south side of U.S. 98 (from Pier Road to just east of the Okaloosa County Tourist Development Council Visitor's Welcome Center [Eglin AFB property line]). The sidewalks are narrow, cross several driveways, and offer little to no protection from vehicle traffic. The only signalized crosswalk within the project area is a four-way crosswalk at the intersection of U.S. 98 and Pier Road. Additionally, there is a pedestrian overpass approximately 0.3 mile east of Pier Road where pedestrians can cross U.S. 98.

Figure 1-3 is a representative photograph of the existing bicycle and pedestrian pathways along the project area.

Figure 1-3. Bicycle and Pedestrian Pathways along the Project Area



The project area is near several hotels, restaurants, stores, attractions/activities, Okaloosa County parks, the aforementioned Eglin AFB beach access points, as well as Fort Walton Beach and Destin. Two community connectivity pathways are adjacent to the project area:

- The proposed replacement for Brooks Bridge includes a multi-use path in each direction between Okaloosa Island and Fort Walton Beach.
- The eastbound (south) side of Marler Bridge includes a pedestrian walkway that connects to a sidewalk along U.S. 98 in Destin.

1.3 Purpose and Need

The purpose of the Proposed Action is to enable safe, two-way, multi-use travel along U.S. 98 in a way that promotes quality of life and economic development, improves community connectivity, and adds to the Florida Greenways and Trails System (FGTS).

A review of trail use in Florida indicates 5,775,175 residents and visitors used Florida's state trails (547 miles) and the Cross Florida Greenway (110 miles) during a 12-month period in 2016/2017 (FDEP 2019d). This equates to 8,790 users/trail mile annually. Multiplying the average Florida trail use of 8,790 users/trail mile annually by the length of the project area (i.e.,

4.3 miles) illustrates the pathway could attract approximately 37,800 users annually. Additionally, a telephone survey of Florida residents indicated 56 percent would walk more if better pedestrian facilities existed and 44 percent would bicycle more if a multi-use pathway existed. At least 85 percent of the respondents agreed that adding pedestrian or bicycle facilities adds value to their community (FDOT 2005).

The Proposed Action is needed for the following reasons:

- The existing sidewalks are narrow, offer limited to no protection from vehicle traffic, and have no connectivity between Fort Walton Beach and Destin.
- The existing bicycle lanes are intermittently marked and do not extend the length of the project area, and the existing bicycle lanes and paved shoulders offer cyclists limited to no protection from vehicle traffic.
- Review of FDOT's Crash Analysis Reporting System data and University of Florida's Signal Four Analytics data identified 24 vehicle/pedestrian and vehicle/cyclist accidents along U.S. 98 between Brooks Bridge and Marler Bridge (4.75 miles) from 2012 through 2018, which is 0.72 accidents/mile each year. Seven of those accidents involved fatalities (FDOT 2019a; University of Florida 2019). In 2016, Florida had 15,770 vehicle/pedestrian and vehicle/cyclist accidents over 122,736 miles of public roads, which is 0.13 accidents/mile (FDMV 2020; FHWA 2018). Therefore, the project area has a vehicle/pedestrian and vehicle/cyclist accident rate that is approximately 5.5 times higher than that of the state.
- The Florida Department of Environmental Protection (FDEP) Office of Greenways and Trails provides leadership and coordination for local development of trail projects that fulfill the vision of the FGTS. It facilitates communication, cooperation, and coordination among local government and non-government organizations involved in trail planning, development, and management. The FGTS consists of individual and networks of greenways and trails in Florida. FGTS Land Trail Priority System is the statewide network of strategic corridors and connections that meet a set of FDEP Office of Greenways and Trails criteria and consequently have a high priority for implementation to support the FGTS (FDEP 2019d). The project area is a gap (area without a trail) in the 263-mile Great Northwest Coastal Trail Corridor (<https://floridadep.gov/sites/default/files/Northwest%20Region.pdf>), which is an FGTS Land Trail Priority. Therefore, the FDEP Office of Greenways and Trails has identified the project area as a location that should have a multi-use trail to support the FGTS.

1.4 NEPA Compliance Requirements

NEPA is a federal law requiring the analysis of potential environmental impacts associated with proposed federal actions before the actions are taken. The intent of NEPA is to make informed decisions based on the identification of potential environmental consequences and take appropriate actions to protect, restore, or enhance the environment. NEPA established the President's CEQ, which is responsible for ensuring federal agency compliance with NEPA. The process for implementing NEPA is outlined in 40 CFR §§ 1500–1508, Regulations for Implementing the Procedural Provisions of NEPA. CEQ regulations on implementing NEPA

specify that analysis is needed to determine whether a proposed action could have significant impacts on the environment. Three courses of action could be taken if environmental analysis determines significant impacts: implement mitigations to reduce impacts below the level of significance; prepare an Environmental Impact Statement; or abandon implementation of the proposed action. If this EA determines an Environmental Impact Statement is not required, a Finding of No Significant Impact (FONSI) would be prepared. If the Proposed Action would involve action in a floodplain, as defined in Executive Order (EO) 11988, *Floodplain Management*, or new construction in a wetland, as defined in EO 11990, *Protection of Wetlands*, a Finding of No Practicable Alternative (FONPA) statement would be included within the FONSI. An EA may also be prepared at any time to assist agency planning and decision making as part of NEPA.

The CEQ regulations mandate all federal agencies to use a prescribed approach to environmental impact analysis. The approach includes an evaluation of the potential environmental consequences associated with a Proposed Action and considers alternative courses of action.

Air Force Policy Directive 32-70, *Environmental Quality*, states USAF will comply with applicable federal, state, and local environmental laws and regulations, including NEPA. This EA would be used to guide USAF in implementing the Proposed Action in a manner consistent with USAF standards for environmental stewardship should the Proposed Action be approved for implementation.

1.5 Government-to-Government, Interagency, and Intergovernmental Coordination and Consultation, and Public Involvement

1.5.1 Government-to-Government Coordination and Consultation

The National Historic Preservation Act (NHPA), 54 United States Code (USC) § 300101 et seq., requires federal agencies to consult with Native American tribal governments to identify cultural resources that may be adversely affected by the agency's proposed action. Consistent with the NHPA, DoD Instruction 4710.02, *DoD Interactions with Federally Recognized Tribes*, and Air Force Instruction (AFI) 90-2002, *Air Force Interaction with Federally-Recognized Tribes*, federally recognized tribes that are historically affiliated with the Eglin AFB geographic region are invited to consult on all proposed undertakings that potentially affect properties of cultural, historical, or religious significance to the tribes. The tribal consultation process is distinct from NEPA consultation or the interagency coordination process. The timelines for tribal consultation are also distinct from those of other consultations.

Eglin AFB conducts government-to-government consultation with five federally recognized tribes with a historic or cultural affiliation with Eglin AFB lands: the Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, Poarch Band of Creek Indians of Alabama, Muscogee (Creek) Nation of Oklahoma, and Thloptholocco Tribal Town of the Creek (Muscogee) Tribe. The installation currently has arrangements with these tribes whereby the tribes do not wish to be contacted for work in areas that have already been surveyed and have no sites significant to them. These arrangements were established in 2008 as part of initial government-to-

government meetings. Furthermore, Eglin AFB has a Memoranda of Understanding with the Muscogee (Creek) Nation of Oklahoma and Thloptholocco Tribal Town of the Creek (Muscogee) Tribe and is working toward one with the Poarch Band of Creek Indians of Alabama (Eglin AFB 2018b). Okaloosa County is not required to conduct tribal consultation on the portion of the project area that is outside of Eglin AFB. No tribal consultation is expected for this project.

1.5.2 Interagency and Intergovernmental Coordination and Consultation

EO 12372, *Intergovernmental Review of Federal Programs*, as amended by EO 12416 with the same title, requires federal agencies to provide opportunities for consultation with officials of state and local governments that could be affected by a federal project. Through the interagency and intergovernmental coordination process, the project proponent notifies relevant federal, state, and local agencies of a proposed action and alternatives and provides them with sufficient time to make known their environmental concerns specific to the action. The process also provides the project proponent with the opportunity to cooperate with and consider state and local views in implementing the federal proposal.

The EA and FONSI (including FONPA statement) will be made available to relevant federal, state, and local government agencies for a 30-day comment period. The Florida State Clearinghouse requests a 60-day review period. The list of federal, state, and local government agencies and signed copies of distribution letters and government agency comments will be included in **Appendix A**. Government agency comments will be considered in the development of this EA and the decision of whether or not to sign the FONSI.

Per the requirements of Section 106 of the NHPA and its implementing regulations, findings of effect and requests for concurrence, where appropriate, were transmitted to the Florida State Historic Preservation Officer (SHPO). The results of the consultations and records of correspondence with the Florida SHPO are included in **Appendix A**.

Section 7(a)(2) of the Endangered Species Act (ESA) requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) when proposed actions may affect a listed species or designated critical habitat. Federally listed and candidate species are unlikely to occur in the project area and no designated critical habitat exists within the project area (see **Section 3.2**); therefore, consultation with USFWS and NMFS is not necessary. Additionally, based on conversations between Eglin AFB and USFWS, the Proposed Action fits within the existing *Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2* (USFWS 2019c). Okaloosa County would implement applicable conservation measures from the *Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2* (USFWS 2019c) and management actions (see **Section 4.3**) to avoid impacts on federally listed and candidate terrestrial and marine species near the project area.

The Florida Coastal Management Program (FCMP) incorporates statutes that protect and enhance Florida's conservational, recreational, ecological, and aesthetic values in accordance with the federal Coastal Zone Management Act (CZMA). Because Eglin AFB is within the coastal zone of Florida, a coastal zone consistency review is required under the CZMA to ensure that federal actions that could affect coastal resources will comply with the enforceable

policies of the FCMP. The records of the CZMA consistency review will be included in **Appendix B**.

1.5.3 Public Involvement

NEPA requirements help ensure that environmental information is made available to the public during the decision-making process and prior to actions being taken. The premise of NEPA is that the quality of federal decisions will be enhanced if proponents provide information to the public and involve the public in the planning process.

Because the Proposed Action is within the 100-year floodplain and wetlands, it is subject to the requirements and objectives of EOs 11988 and 11990, respectively. As such, a Public Notice was published in the *Northwest Florida Daily News* on November 1, 2019, to notify the public that the Proposed Action would occur in the 100-year floodplain and wetland areas. The notice solicited public comment. A copy of the Public Notice is included in **Appendix A**. Eglin AFB received no public comments in response to the Public Notice.

A notice of availability announcing that the EA and FONSI (including FONPA statement) are available for a 30-day comment period will be published in the *Northwest Florida Daily News*. A copy of the newspaper notice will be included in **Appendix A** along with any comments received. The EA and FONSI (including FONPA statement) will be made available in electronic format on the Eglin AFB website.

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2. Proposed Action and Alternatives

This section describes the Proposed Action and alternatives considered, including the No Action Alternative. Guidance for complying with NEPA requires an assessment of potentially effective and reasonably feasible alternatives for implementing the Proposed Action. Alternatives dismissed early in the planning process as not reasonable are not carried forward for detailed analysis in this EA.

2.1 Proposed Action

The Proposed Action consists of construction and operation of a paved multi-use pathway within the FDOT right-of-way (Okaloosa Island) and easement (Eglin AFB) along U.S. 98 from Pier Road to Marler Bridge. The following subsections detail the elements of Okaloosa County's Proposed Action. Figures depicting the locations of the Proposed Action elements for the alternatives carried forward for analysis are provided in **Section 2.3**.

If Okaloosa County decides to implement the Proposed Action, then Okaloosa County, Eglin AFB, and FDOT would have meetings to discuss pathway final design, construction details, and maintenance responsibilities and document relevant decisions in construction agreements, maintenance agreements, or permits, as applicable.

2.1.1 Construction

The Proposed Action includes construction of the pathway, safety barriers where necessary, fencing to protect Eglin AFB protective buffers and areas, and upgraded parking areas at three Eglin AFB-designated beach access points adjacent to the pathway. The project area (construction area), including laydown areas (i.e., staging and storage of equipment and supplies), would be up to 40 feet wide along the proposed pathway; however, the pathway and associated infrastructure would occupy approximately half the width of the project area. The project area would be grubbed and graded prior to construction. Final location and design of the pathway and associated infrastructure would be prepared after an alternative is selected. Okaloosa County would hire one or more companies to design and construct the pathway and associated infrastructure. Additionally, Okaloosa County would coordinate pathway and associated infrastructure design and construction timing with Eglin AFB and FDOT to avoid conflicts with infrastructure, parking barriers, approved projects, and operations and training events. Construction of the pathway would be phased to minimize access limitations to the Eglin AFB-designated beach access point parking areas within the project area. Access to commercial properties and public parks would be maintained during construction.

The pathway and associated infrastructure would be within the FDOT right-of-way (Okaloosa Island) and easement (Eglin AFB) for U.S. 98; therefore, these components would be designed in accordance with FDOT's *Design Manual* (FDOT 2019b), *Standard Plans for Road and Bridge Construction* (FDOT 2018a), and *Standard Specifications for Road and Bridge Construction* (FDOT 2019c). Additionally, the pathway would comply with Americans with Disabilities Act standards. The pathway and associated infrastructure would be constructed outside of the FDOT clear zone, to the extent possible, to maximize the distance from U.S. 98 in accordance with requirements for priority corridors in the *FGTS Plan*. FDOT clear zone distances are based

on several factors, including speed limit of the associated road. Okaloosa County would coordinate with FDOT in the event the FDOT clear zone could not be avoided and a variance is required. The pathway and associated infrastructure would be designed to avoid roadway infrastructure (e.g., gabion mats and sheet piles), utilities, wetlands, and Eglin AFB protective buffers and areas to the extent feasible. Construction is anticipated to occur in 2021, and no closures of U.S. 98 are expected.

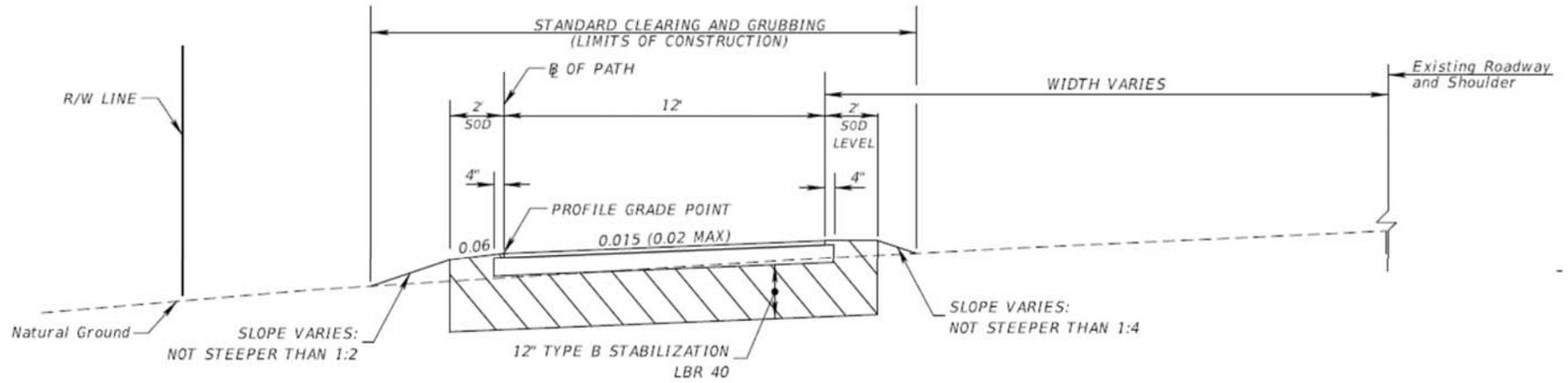
The pathway would be paved, 12 feet wide (enabling movement in both directions), and 4.3 miles long (see **Figure 2-1** for typical cross section). Per the FDOT *Design Manual*, the pathway would have a design speed of 18 mph for grades less than 4 percent and 30 mph for downhill grades greater than 4 percent. Pathway construction materials would be determined during final design, but would be equivalent to standard road shoulder pavement (FDOT 2019b). The pathway would be impervious; therefore, stormwater runoff would sheet flow in the direction of topography. Land on both sides of the pathway would include a 2-foot-wide graded area and a 4-foot-wide clear area, to the extent possible. The pathway design would include a combination of open space (sand and grass), safety barriers (where necessary in accordance with the FDOT *Design Manual*), bollards, and signs to prevent vehicles from parking on the pathway. The pathway would include removable bollards where driveways intersect with the pathway to keep vehicles from entering/parking on the path. Signs would be posted along the pathway in select areas, including at the three open Eglin AFB-designated beach access parking areas, noting that parking on the pathway and outside of designated parking spaces is prohibited. Traffic control devices for the pathway (e.g., signs, signals, markings) would be selected and placed in accordance with Federal Highway Administration's (FHWA's) *Manual of Uniform Traffic Control Devices* (FHWA 2012).

Safety barriers would be required where the pathway would be less than 4 to 5 feet from U.S. 98, depending on the speed limit and design of the adjacent roadway, and where drop-off hazards (i.e., steep or abrupt slopes) exist within 2 feet of the edge of the pathway (FDOT 2019b). The final location, type (e.g., guardrail, fence, railing), and design of the safety barriers would be determined during final design.

Environmental fencing (e.g., 4-foot field fence consisting of multiple horizontal strands of wire held in place by metal stakes or wooden posts) would be installed as a barrier to prevent pathway users from entering Eglin AFB protective buffers and areas (i.e., areas where federally endangered [FE] Florida perforate cladonia [*Cladonia perforata*], state-threatened eastern least tern [*Sternula antillarum antillarum*], and bald eagle [*Haliaeetus leucocephalus*] may be present, and the West Jetties Parking habitat protection area). It would be placed in areas where the pathway would be within 100 feet of Eglin AFB protective buffers and areas. The final location and design of the environmental fencing would be determined during final design.

Where the pathway would be south of U.S. 98, the Airman Beach, Matterhorn Beach, and Princess Beach Eglin AFB-designated beach access parking areas, which are currently open sand areas, would be upgraded with a pervious stabilized base to prevent vehicles from sinking, curbing to contain the stabilized base, parking curb stops to designate the parking spaces, and

Figure 2-1. Typical Multi-Use Pathway Cross Section



Notes:

R/W = right-of-way

LBR = limerock bearing ratio

protection (e.g., bollards, fence, parking curb stops) to prevent vehicles from parking on the pathway. The upgraded parking areas would be sized to match the approximate area currently being used for vehicle parking at these beach access points. The Matterhorn Beach and Princess Beach upgraded parking areas would be designed to accommodate 7 to 15 vehicles, and the Airman Beach upgraded parking area would be designed to accommodate 6 to 10 vehicles. No upgrades would occur at West Jetties Parking because it is currently closed and already contains a pervious stabilized base. The upgraded parking areas would be positioned between the pathway and U.S. 98. The final location, size, and design of the upgraded parking areas would be determined during final design and require Eglin AFB and FDOT approval.

2.1.2 Operation

Okaloosa County would maintain and repair the pathway, safety barriers, environmental fencing, upgraded parking areas, and Eglin AFB property fencing (e.g., 3-foot field fence consisting of wire strands between wooden posts) adjacent to the pathway; install signage and enforce parking restrictions on the pathway; manage sand removal and erosion control for the pathway and upgraded parking areas; and adhere to the *FGTS Plan* requirements for management and long-term maintenance of priority trails.

General maintenance and repair of the pathway, safety barriers, environmental fencing, and upgraded parking areas would include annual inspections and general maintenance and repair, as needed. General maintenance and repair of the Eglin AFB property fencing adjacent to the pathway would consist of annual inspections as well as maintenance, repair, or replacement of the fencing with similar materials.

Okaloosa County would inspect the pathway and upgraded parking areas periodically and after storms for sand and erosion issues. As necessary, Okaloosa County would use backhoes, bulldozers, dump trucks, and brooms to remove sand from the pathway and upgraded parking areas, repair erosion issues within the pathway and upgraded parking areas, and repair/regrade areas on both sides of the pathway back to the original design. All removed sand would be reused in place. Due to the presence of wetlands and floodplains, maintenance activities with heavy equipment on the Eglin AFB portion of the project area would require evaluation on a case-by-case basis through the Air Force Form 813 process, which identifies the need for environmental analysis.

Okaloosa County would continue to remove trash and pet waste from the trashcans at the Airman Beach, Matterhorn Beach, and Princess Beach Eglin AFB-designated beach access point parking areas and beach areas, as well as the trashcans at the Okaloosa County-managed parks and public parking areas. No new trashcans are proposed; however, Okaloosa County would add or redistribute trashcans as deemed necessary.

The Okaloosa County Sheriff's Office would enforce parking restrictions for vehicles that park on the pathway or outside designated parking spaces along the pathway. These areas would have signs prohibiting parking. Pathway users would be required to adhere to statewide traffic control laws in Florida Statutes Chapter 316.

Non-permit parking for pathway users would be available at the Emerald Coast Convention Center parking lot and nearby public parking lots (e.g., Wayside [Boardwalk] Park, John Beasley Park, Little Marler Park, Ross Marler Park, and Veterans Park). Eglin AFB Security Forces would continue to monitor the Eglin AFB-designated beach access point parking areas for permit compliance.

High-speed and leisure cyclists would be permitted to use all bicycle facilities within and along the project area, including bicycle lanes, paved shoulders, and the multi-use pathway. The multi-use pathway would be a supplement to, not a substitute for, existing bicycle facilities and sidewalks. Based on the design speed, right-of-way rules, traffic control devices (e.g., signs, signals), and presence of pedestrians for the multi-use pathway, it is assumed many of the high-speed cyclists would prefer to use the existing cycling lanes and paved shoulders. Based on the speed limit of U.S. 98 and narrow width and lack of protection of the bicycle lanes and paved shoulders, it is assumed many of the leisure cyclists would prefer to use the multi-use pathway.

2.2 Selection of Alternatives to the Proposed Action

Okaloosa County considered a range of alternatives for the Proposed Action. Considering alternatives helps to avoid unnecessary impacts and allows for an analysis of reasonable ways to achieve a purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be suitable for decision making, capable of implementation, and sufficiently satisfactory with respect to meeting the purpose of and need for the action. NEPA regulations define reasonable alternatives as economically and technically feasible, and show evidence of common sense.

Okaloosa County used selection standards to determine whether alternatives for the Proposed Action were reasonable. **Table 2-1** compares the potential Proposed Action alternatives against the following selection standards:

- Improve safety for pedestrians and cyclists.
- Encourage pathway users to cross U.S. 98 only at signalized crosswalks.
- Exclude the pathway from crossing U.S. 98 at grade.
- Include logical termini (end points) for the pathway.
- Improve community connectivity.
- Allow pathway users to travel east and west along U.S. 98.
- Minimize impacts on utilities, wetlands, 100-year floodplain, and Eglin AFB protective buffers and areas.
- Meet standards for shared use paths in the FDOT Design Manual (e.g., minimum separation from roadway, width, longitudinal grade, clearance distances) (FDOT 2019b).
- Be compatible with U.S. Coast Guard (USCG) Station Destin's mission.
- Be compatible with Eglin AFB's mission (e.g., ranges and Eglin Beach Park).
- Must not prevent access to Eglin AFB-designated beach access points.

Table 2-1. Comparison of Alternatives to Selection Standards

Selection Standard	Lengthen Existing Pathways	North Alternative	South Alternative	North and South Alternative
Improve safety for pedestrians and cyclists	Red	Green	Green	Green
Encourage pathway users to cross U.S. 98 only at signalized crosswalks	Red	Yellow	Green	Green
Exclude the pathway from crossing U.S. 98 at grade	Red	Green	Green	Green
Include logical termini (end points) for the pathway	Red	Green	Green	Green
Improves community connectivity	Green	Yellow	Green	Green
Allow pathway users to travel east and west along U.S. 98	Green	Green	Green	Green
Minimize impacts on utilities, wetlands, 100-year floodplain, and Eglin AFB protective buffers and areas	Yellow	Yellow	Yellow	Red
Meet standards for shared use paths in the FDOT Design Manual	Red	Green	Green	Green
Be compatible with USCG Station Destin's mission	Green	Green	Green	Green
Be compatible with Eglin AFB's mission (e.g., ranges and Eglin Beach Park)	Green	Green	Green	Yellow
Must not prevent access to Eglin AFB-designated beach access points	Green	Green	Green	Green

Key: green = meets selection criteria, yellow = partially meets selection criteria, red = conflicts with selection criteria

2.3 Alternatives Carried Forward for Analysis

Two action alternatives (i.e., North Alternative and South Alternative) meet the selection standards. **Figures 2-2** through **2-5** illustrate the 40-foot-wide project areas (construction areas) for each alternative. The pathway and associated infrastructure would occupy approximately half the width of the project area. The North and South Alternatives are described in the following subsections. Additional alternatives that were evaluated against the selection standards, and the corresponding analyses that determine these alternatives should be eliminated from further analysis in this EA, are described in **Section 2.5**.

2.3.1 North Alternative

The North Alternative is located along the north side of U.S. 98 from Pier Road to Marler Bridge. It includes an area beneath Marler Bridge that would enable pathway users to access the Marler Bridge pedestrian walkway that is adjacent to the eastbound lanes of the bridge. Parking areas

Figure 2-2. North and South Alternatives (1 of 4)



Figure 2-3. North and South Alternatives (2 of 4)

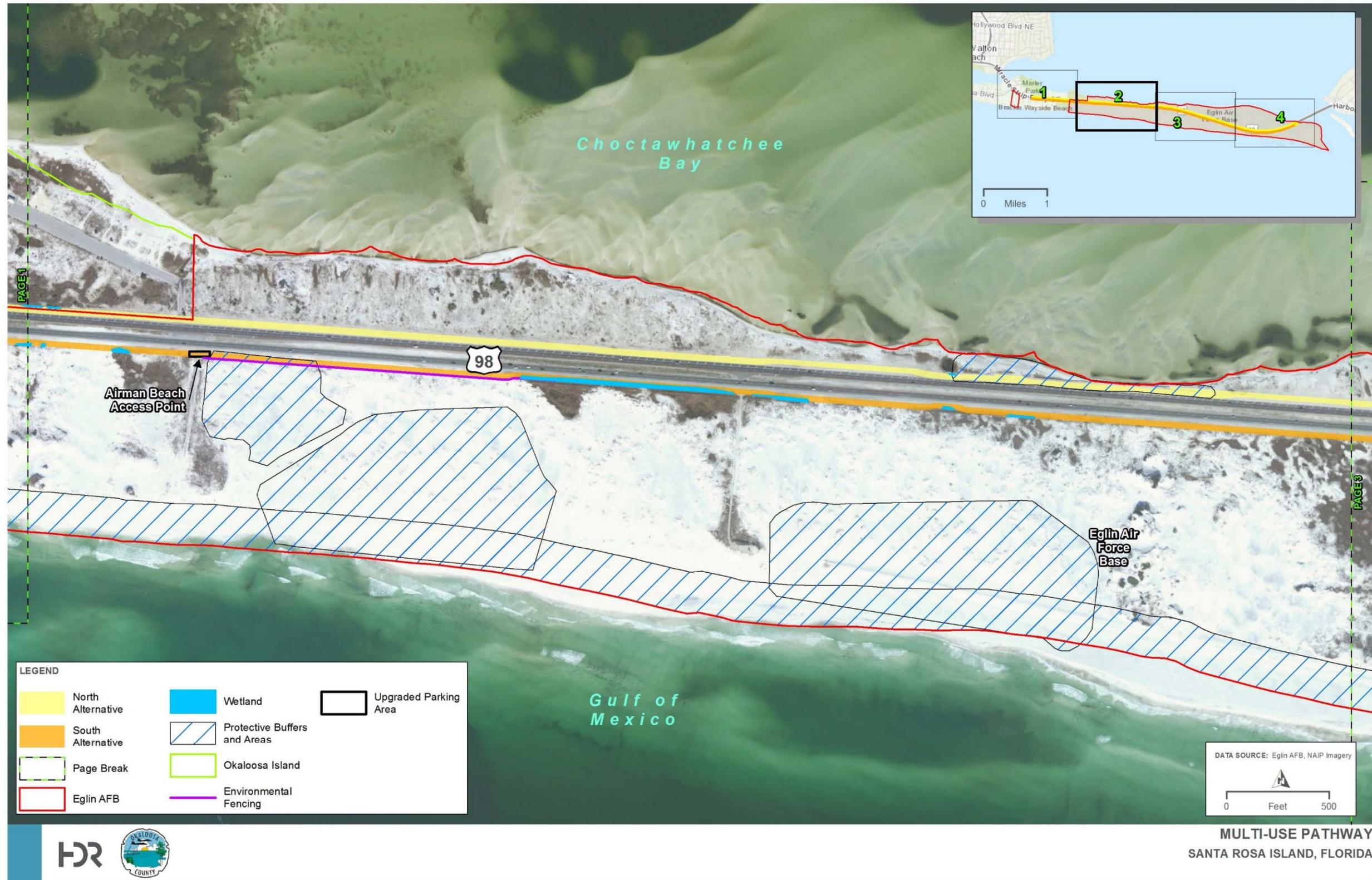
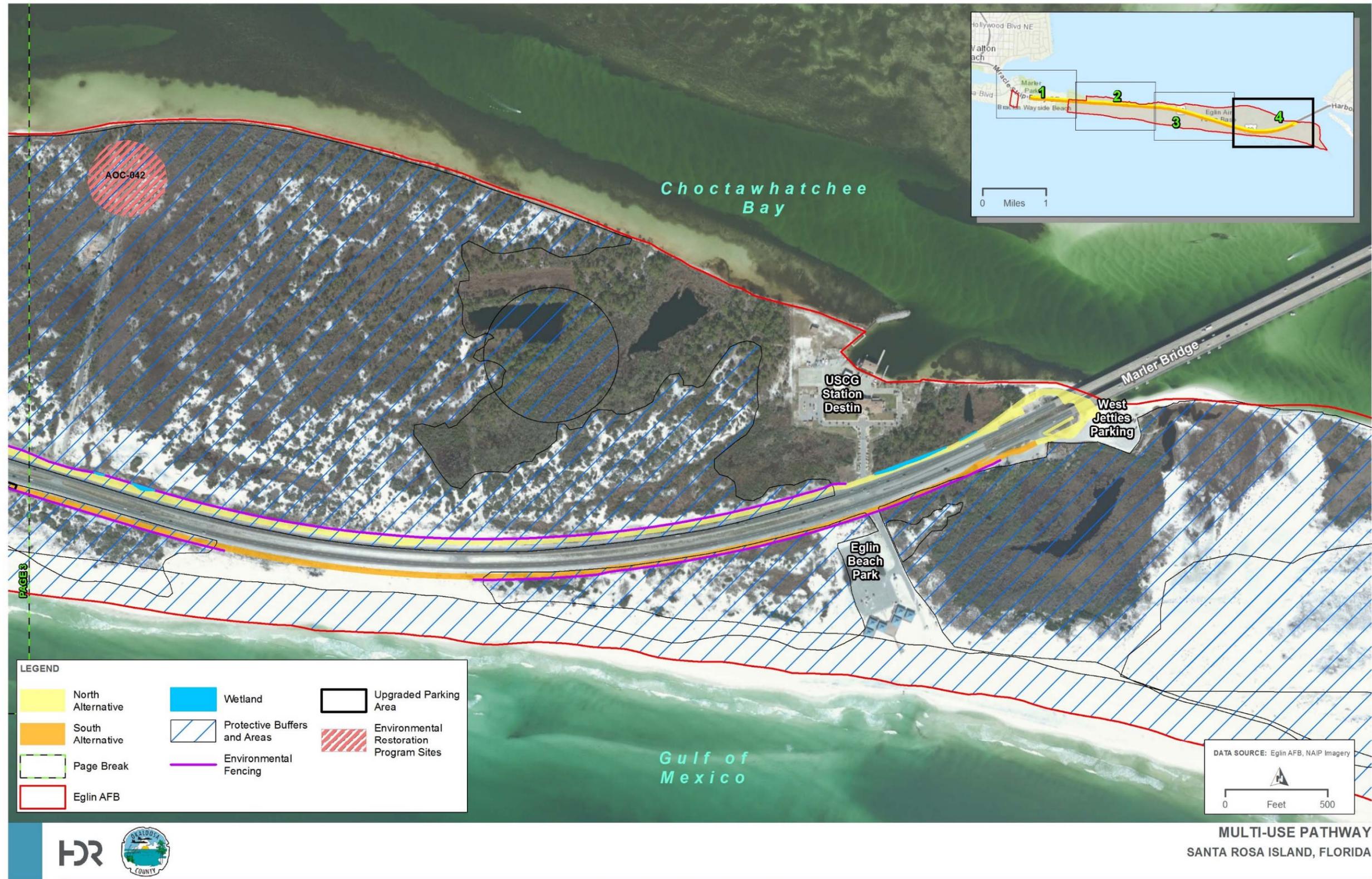


Figure 2-4. North and South Alternatives (3 of 4)



Figure 2-5. North and South Alternatives (4 of 4)



adjacent to the North Alternative include the Emerald Coast Convention Center, which is at the western end of the North Alternative. The North Alternative project area includes the driveways for USCG Station Destin and Gulf Islands National Seashore (Okaloosa Area), and it is adjacent to several Eglin AFB wildlife management gates. This alternative would require posting signs (e.g., *Manual of Uniform Traffic Control Devices* sign types R9-2, R9-3a, R9-3bP) along the pathway across from the Eglin AFB-designated beach access points and other locations deemed necessary to deter pathway users from crossing U.S. 98 to access these areas. This alternative does not provide access to Wayside Park, John Beasley Park, or the Eglin AFB-designated beach access points; therefore, this alternative does not include upgrades to the Eglin AFB-designated beach access point parking areas on the south side of U.S. 98.

The bicycle facilities (i.e., bicycle lanes and paved shoulders) along U.S. 98 would remain, while the majority of the 0.1-mile-long sidewalk on the north side of U.S. 98 would be replaced by the pathway.

The North Alternative would add approximately 18 acres of impervious surface and 8,400 linear feet of environmental fencing; require relocation of utility poles with overhead electricity; require removal of several trees; and affect up to 0.42 acre of wetlands, 6.34 acres of Eglin AFB protective buffers and areas, and 18 acres of 100-year floodplain within the North Alternative project area. The natural gas pipeline, natural gas valves, and sanitary sewer pipes and pump station would be avoided or protected during construction of the pathway.

2.3.2 South Alternative

The South Alternative is located along the south side of U.S. 98 and spans from Pier Road to Marler Bridge. It is adjacent to several Eglin AFB range access points, Eglin Beach Park (USAF users only), the three open Eglin AFB-designated beach access points (i.e., Airman Beach, Matterhorn Beach, and Princess Beach), Wayside (Boardwalk) Park, and John Beasley Park. Parking areas adjacent to the South Alternative include 1) Emerald Coast Convention Center parking area, which would require pathway users to cross U.S. 98 at the signalized crosswalk at Pier Road; 2) Wayside (Boardwalk) Park, which offers a playground, pavilions, picnic tables, and restrooms with changing areas; 3) John Beasley Park, which offers pavilions, picnic tables, and restrooms with changing rooms; and 4) three Eglin AFB-designated beach access point parking areas (Eglin AFB Beach Permit required).

The South Alternative includes an upgraded ingress/egress (i.e., improved driveway) and associated safety features (e.g., safety barrier), if needed, for West Jetties Parking (currently closed). The upgraded ingress/egress would support construction of the pathway and would be beneficial if West Jetties Parking reopens in the future. The type of upgraded ingress/egress and associated safety features would be determined during final design if the South Alternative were selected for implementation.

Under the South Alternative, the majority of the 0.6-mile-long sidewalk along the south side of U.S. 98 would be replaced with the pathway, but the bicycle facilities (i.e., bicycle lanes and paved shoulders) along U.S. 98 would remain.

The South Alternative would add approximately 16 acres of impervious surface, 7,700 linear feet of environmental fencing, and three upgraded parking areas; require removal of several trees; and affect up to 0.64 acre of wetlands, 3.47 acres of Eglin AFB protective buffers and areas, and 16 acres of 100-year floodplain within the South Alternative project area. The underground potable water lines, underground telecommunications fiber lines, and stormwater infrastructure would be avoided or protected during construction of the pathway. The utility poles and overhead electrical lines adjacent to the pathway would be avoided during construction.

2.4 No Action Alternative

USAF-implementing regulations for NEPA, 32 CFR § 989, as amended, require consideration of the No Action Alternative. In addition, CEQ guidance recommends inclusion of the No Action Alternative in an EA to assess any environmental consequences that may occur if the Proposed Action is not implemented. Therefore, this alternative is carried forward for detailed analysis in this EA. The No Action Alternative also provides a baseline against which the Proposed Action alternatives can be compared. Under the No Action Alternative, Okaloosa County would not construct or operate a paved multi-use pathway along U.S. 98 from Pier Road to Marler Bridge. Pedestrians would continue to use narrow sidewalks that offer limited to no protection from vehicle traffic and no connectivity between Fort Walton Beach and Destin. Cyclists would continue to use existing bicycle lanes (intermittently marked and not present the entire length of the project area) and paved shoulders that offer limited to no protection from vehicle traffic.

2.5 Alternatives Considered but Eliminated from Detailed Analysis

Alternatives that Okaloosa County considered but eliminated from detailed analysis early in the planning process because they do not satisfy the selection standards identified in **Section 2.2** include the following:

- Lengthen the existing bicycle lanes and sidewalks along the project area.
- Construct a 12-foot-wide multi-use pathway along the north and south sides of U.S. 98.

Lengthen the Existing Pathways. Under this alternative, Okaloosa County would lengthen the bicycle lanes and sidewalks along the north and south sides of U.S. 98 to provide access from Pier Road to the western terminus of Marler Bridge. However, this alternative has been eliminated from further detailed analysis because it does not meet the following selection standards for the Proposed Action:

- **Use of Designated Crosswalks** – Cyclists traveling westbound (e.g., cyclists that walked their bicycles across the Marler Bridge pedestrian walkway from Destin, cyclists that rode their bicycles eastbound to the Marler Bridge and desire to ride back) would have to cross U.S. 98 at the western terminus of Marler Bridge to travel west. However, there is no traffic signal or crosswalk at this location, which conflicts with the selection standard to encourage pathway users to cross U.S. 98 only at signalized crosswalks. Additionally, adding a signalized crosswalk at this location for occasional bicycle riders

would not be reasonable and would conflict with the selection standard that excludes the pathway from crossing U.S. 98 at grade.

- **Improved Safety** – The bicycle lanes still would be immediately adjacent to a 35- to 55-mile per hour road, and neither the sidewalks nor the bicycle lanes would not have safety barriers to protect users from vehicle traffic.
- **Logical Termini** – The westbound bicycle lane would begin at the western terminus of Marler Bridge without a logical terminus. Cyclists would have to cross U.S. 98 in an area with no traffic signal or crosswalk to access the westbound bicycle lane. Adding a signalized crosswalk would conflict with the selection standard that excludes the pathway from crossing U.S. 98 at grade, and adding a parking area north of U.S. 98 would conflict with USCG Station Destin’s standoff distances.

Construct a Pathway along Both Sides of U.S. 98 (North and South Alternatives). Under this alternative, Okaloosa County would construct a 12-foot-wide multi-use pathway along both sides of U.S. 98 (i.e., construct the North and South Alternatives). However, this alternative has been eliminated from further detailed analysis because it does not meet the following selection standards for the Proposed Action:

- **Minimize Impacts** – This alternative would double the project area and result in additional impacts on utilities, wetlands, 100-year floodplain, and Eglin AFB protective buffers and areas.
- **FDOT Safety Requirements** – This alternative would increase the pathway areas that would require FDOT clear zone variances to avoid utilities and environmental constraints.
- **Compatible with Eglin AFB’s Mission** – This alternative would double the impact from construction and permanent use of Eglin AFB property for two pathways.

2.6 Identification of the Preferred Alternative

As indicated in **Table 2-1**, the South Alternative fully complies with the greatest number of selection standards. Therefore, the Preferred Alternative is to implement the South Alternative, as described in **Section 2.3.2**. The South Alternative would allow pathway users to cross U.S. 98 only at signalized crosswalks, enable pathway users direct access to the Eglin AFB-designated beach access areas and two public parks (improve community connectivity), impact fewer utilities and acres of Eglin AFB protective buffers and areas, offer more parking areas adjacent to the pathway, and provide direct access to the pedestrian walkway on the eastbound side of Marler Bridge without construction of a connection beneath the bridge.

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3. Affected Environment and Environmental Consequences

This section presents a description of the environmental resources and baseline conditions that could be affected by the Proposed Action alternatives and No Action Alternative. In addition, this section presents an analysis of the potential environmental consequences of the Proposed Action alternatives and the No Action Alternative. The Proposed Action alternatives and the No Action Alternative were evaluated for their potential environmental consequences on the environmental resources in accordance with CEQ NEPA implementation regulations at 40 CFR § 1508.8. The environmental consequences are presented by alternative (i.e., North Alternative and South Alternative) and land ownership (i.e., Okaloosa Island [non-Eglin AFB] and Eglin AFB) unless otherwise noted. All relevant environmental regulations, plans, permits, and management actions/best management practices (BMPs) are discussed in **Section 4**.

All environmental resources required to be analyzed were initially considered in this EA. In compliance with NEPA, CEQ, and USAF Environmental Impact Analysis Process regulations and guidelines, the following discussion of the affected environment and environmental consequences focuses only on those environmental resources considered potentially subject to impacts or with potentially significant environmental issues. These environmental resources are air quality, biological resources, cultural resources, geological resources, hazardous materials and wastes, infrastructure and transportation, land use, noise, safety, socioeconomics, environmental justice, and water resources. The environmental resources not analyzed in detail in this EA because insignificant or no impacts would occur are airspace and airfield safety, special hazards, radon, and visual and aesthetic resources. The following paragraphs justify why these environmental resources were dismissed from detailed analysis in this EA.

Airspace and Airfield Safety. The Proposed Action alternatives do not include aircraft operations or airspace changes and therefore would not change airspace configurations, use, capacity, or management procedures.

The closest active runways to the project area are Runways 01/19 and 12/30 at Eglin AFB Main Base/Destin-Fort Walton Beach Airport. A portion of the project area is within the approach-departure clearance surface of Runway 01/19 and the entire project area is within the outer horizontal surfaces of Runways 01/19 and 12/30 (Eglin AFB 2018a). However, these imaginary surfaces exist at and above 500 feet above mean sea level at the project area. Because no structures taller than several feet would be constructed as part of the Proposed Action alternatives, no conflicts with airfield imaginary surfaces would occur.

Clear Zones and Accident Potential Zones are areas where an aircraft accident is most likely to occur. Restrictions are placed on development within these areas to ensure the safety of military personnel and civilians (Eglin AFB 2018a). The project area is approximately 3 miles away from the nearest Clear Zone or Accident Potential Zone. At this distance, the Proposed Action alternatives would not affect these safety areas. For these reasons, airspace and airfield safety are not carried forward for detailed analysis in this EA.

Special Hazards. Special hazards are substances that might pose a risk to human health and are addressed separately from hazardous materials and wastes. Special hazards include asbestos-containing materials, lead-based paint, and polychlorinated biphenyls, which generally are found in older buildings and infrastructure. The Proposed Action alternatives do not include activities that would disturb these special hazards because no demolition would occur. Additionally, special hazards are unlikely to be used in the construction of the proposed multi-use pathway. For these reasons, special hazards are not evaluated further in this EA.

Radon. Radon is a naturally occurring odorless and colorless radioactive gas found in soils and rocks that can lead to the development of lung cancer. Radon tends to accumulate in enclosed spaces, usually those that are below the ground and poorly ventilated (e.g., basements). The Proposed Action alternatives do not include the construction of new interior space or activities that would be impacted by radon. Therefore, radon is not evaluated further in this EA.

Visual and Aesthetic Resources. The Proposed Action alternatives would not affect the visual or aesthetic resources of Santa Rosa Island or the surrounding area. The construction and operation of the pathway would be consistent with the current characteristic features and coastal landscape of Santa Rosa Island and would have a low vertical profile. Design of the pathway and associated features would be consistent with FDOT and FGTS guidelines. The pathway would not affect scenic vistas or resources or alter the visual qualities of the area or landscape; therefore, visual resources is not carried forward for detailed analysis in this EA.

3.1 Air Quality

3.1.1 Definition of the Resource

Air quality is defined by the concentration of various pollutants in the atmosphere at a given location. Under the Clean Air Act, the six pollutants defining air quality, called “criteria pollutants,” are carbon monoxide (CO), sulfur dioxide, nitrogen dioxide, ozone (O₃), suspended particulate matter (measured less than or equal to 10 microns in diameter [PM₁₀] and less than or equal to 2.5 microns in diameter [PM_{2.5}]), and lead. CO, sulfur dioxide, and some particulates are emitted directly into the atmosphere from emission sources. Nitrogen dioxide, O₃, and some particulates are formed through atmospheric chemical reactions that are influenced by weather, ultraviolet light, and other atmospheric processes. Volatile organic compounds (VOCs) and nitrogen oxides (NO_x) emissions are used to represent O₃ generation because they are precursors of O₃. Since the phase-out of leaded fuels in the 1970s and 1980s, lead emissions have been negligible from the types of emission sources under this Proposed Action. As such, they are not included in this air quality analysis.

The U.S. Environmental Protection Agency (USEPA) has established National Ambient Air Quality Standards (NAAQS) (40 CFR § 50) for criteria pollutants. The NAAQS protect against adverse health effects and welfare effects. Each state has the authority to adopt standards stricter than those established by USEPA. The State of Florida has accepted the federal standards.

Areas that are and have historically been in compliance with the NAAQS or have not been evaluated for NAAQS compliance are designated as attainment areas. Areas that violate a

federal air quality standard are designated as nonattainment areas. Areas that have transitioned from nonattainment to attainment are designated as maintenance areas and are required to adhere to maintenance plans to ensure continued attainment.

The USEPA General Conformity Rule applies to federal actions occurring in nonattainment or maintenance areas when the total direct and indirect emissions of nonattainment pollutants (or their precursors) exceed specified thresholds. The emissions thresholds that trigger requirements for a conformity analysis are called *de minimis* levels. *De minimis* levels (in tons per year [tpy]) vary by pollutant and depend on the severity of the nonattainment status for the air quality management area in question.

Climate Change and Greenhouse Gases. Global climate change refers to long-term fluctuations in temperature, precipitation, wind, sea level, and other elements of Earth's climate system. Ways in which the Earth's climate system may be influenced by changes in the concentration of various gases in the atmosphere have been discussed worldwide. Of particular interest, greenhouse gases (GHGs) are gas emissions that trap heat in the atmosphere. These emissions occur from natural processes and human activities. Scientific evidence indicates a trend of increasing global temperature over the past century because of an increase in GHG emissions from human activities. The climate change associated with this global warming is predicted to produce negative economic and social consequences across the globe.

3.1.2 Affected Environment

The pathway would be constructed and operated in Okaloosa County, Florida. USEPA has designated Okaloosa County as in attainment for all criteria pollutants (USEPA 2019). As a result, a General Conformity applicability analysis is not required for federal actions occurring in the county.

Eglin AFB is considered a major source for the purposes of air permitting and holds a Title V operating permit (#0910031-022-AV) that expires on May 30, 2024 (FDEP 2019a). There are no existing sources of air emissions within the pathway project area.

Climate Change and Greenhouse Gases. Ongoing global climate change has the potential to increase average temperatures and cause more frequent extreme rainfall events in the southeastern United States including Florida. Sea level rise also is contributing to increased flooding in coastal regions. These changes to regional climate patterns could result in regional changes to flooding frequency and intensity, reduced air quality, damage to transportation infrastructure, and spread of invasive species to new areas (USGCRP 2018).

3.1.3 Environmental Consequences

Because Okaloosa County is in attainment for the NAAQS, the General Conformity Rule does not apply. Nevertheless, the General Conformity Rule *de minimis* thresholds can be used as a surrogate to determine the level of impacts under NEPA. Effects on air quality that are considered indicators of significance include whether or not the annual air emissions of an alternative would exceed the General Conformity Rule *de minimis* threshold values, or if an alternative would contribute to a violation of a federal, state, or local air regulation. Significant

impacts also would occur if an alternative meaningfully contributed to the potential effects of global climate change.

The impacts on air quality are the same regardless of land ownership; therefore, the impacts for Okaloosa Island and Eglin AFB are described together.

3.1.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Construction. The construction of the pathway would result in a short-term, minor, adverse impact on air quality. Construction would produce emissions of criteria pollutants and GHGs from operation of heavy equipment, workers commuting daily to and from the project area in their personal vehicles, heavy-duty diesel vehicles hauling materials and debris to and from the project area, and ground disturbance. However, such emissions would be temporary in nature and produced only when such activities are occurring. For the purposes of this air quality analysis, all construction is conservatively assumed to occur during calendar year 2021.

The air pollutant of greatest concern is particulate matter, such as fugitive dust. The quantity of uncontrolled fugitive dust emissions from a site is proportional to the area of land being worked and the level of activity. Fugitive dust air emissions would be greatest during the initial site grading and excavation and would vary day to day depending on the work phase, level of activity, and prevailing weather conditions. Particulate matter emissions also would be produced from the combustion of fuels in vehicles and equipment needed for construction. Construction activities would incorporate BMPs and environmental control measures to minimize fugitive particulate matter air emissions. **Section 4.3.1** contains a summary of management actions that would be implemented to minimize air emissions from construction.

USAF’s Air Conformity Applicability Model (ACAM) was used to estimate the air emissions from construction of the pathway. **Table 3-1** summarizes the air emissions from construction of the North Alternative, and **Appendix C** contains the ACAM detail report.

Table 3-1. Estimated Air Emissions from Construction under the North Alternative

Estimated Emissions (2021)	NO_x (tpy)	VOC (tpy)	CO (tpy)	SO_x (tpy)	PM₁₀ (tpy)	PM_{2.5} (tpy)	CO_{2e} (tpy)
	3.293	0.555	3.099	0.007	27.762	0.157	730.5

Key: SO_x = sulfur oxides, CO_{2e} = carbon dioxide equivalent

Operation. Everyday use of the pathway would not produce air emissions. Only non-motorized vehicles (e.g., bicycles, skateboards) and pedestrians would be permitted to use the pathway. Motorized vehicles (e.g., automobiles, motorcycles) would remain on the existing roadways. As such, the North Alternative would not increase air emissions from motorized vehicles.

Long-term, negligible air emissions would be produced from general maintenance and repair of the pathway. Equipment for landscaping, sand removal, and routine and emergency repairs to pavement, fencing, and safety barriers would be used, as needed, which is expected to be relatively infrequent and for short periods. As such, the potential air emissions from

maintenance and repair of the pathway would be negligible enough that they do not warrant quantification in this air quality analysis.

Summary. As noted in **Section 3.1.2**, the General Conformity Rule does not apply to federal actions in Okaloosa County, so neither an applicability determination nor a conformity analysis is required. However, for informational purposes, the estimated annual air emissions from the North Alternative can be compared to the 100 tpy *de minimis* level. Annual emissions of all criteria pollutants would be well below the 100 tpy threshold, as demonstrated in **Table 3-1**. Therefore, the North Alternative would not result in a significant impact on air quality.

Climate Change and Greenhouse Gases. The North Alternative would emit approximately 731 tons of CO₂e in 2021. By comparison, this amount of CO₂e is approximately the GHG footprint of 141 passenger vehicles driven for 1 year or 79 homes' energy use for 1 year (USEPA 2018). As such, this annual emission of GHGs would not meaningfully contribute to the potential effects of global climate change. Therefore, the North Alternative would not result in a significant impact on climate change.

Ongoing changes to climate patterns in the southeastern United States are described in **Section 3.1.2**. These changes could adversely affect the pathway if extreme rainfall events or coastal flooding were to damage pavement; move sand/soil onto, beneath, or adjacent to the pathway; or otherwise reduce the pathway's availability. Maintenance actions, such as sand removal and washout repair, may need to occur more frequently if these events become more regular. Warmer temperatures also may decrease the public's willingness to use the pathway during the warmest parts of summer.

3.1.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Construction. The South Alternative would have identical impacts on air quality from construction as the North Alternative. While the South Alternative would construct the pathway with slightly different dimensions and locations than the North Alternative and include three upgraded parking areas, the air emissions produced from construction would be virtually identical. These air emissions were estimated with USAF's ACAM and are shown in **Table 3-2**. **Appendix C** contains the ACAM detail report. Identical management actions as those for the North Alternative would be implemented to minimize air emissions from construction of the South Alternative. These management actions are listed in **Section 4.3.1**.

Table 3-2. Estimated Air Emissions from Construction under the South Alternative

Estimated Emissions (2021)	NO _x (tpy)	VOC (tpy)	CO (tpy)	SO _x (tpy)	PM ₁₀ (tpy)	PM _{2.5} (tpy)	CO ₂ e (tpy)
	3.289	0.552	3.097	0.007	27.720	0.157	729.1

Operation. As with the North Alternative, air emissions would not be produced from the everyday use of the pathway under the South Alternative. Identical long-term, negligible air emissions would be produced from maintenance of the pathway. These potential air emissions would be negligible enough that they do not warrant quantification in this air quality analysis.

Summary. As with the North Alternative, the General Conformity Rule does not apply to the South Alternative. For informational purposes, annual emissions of all criteria pollutants would be well below the 100 tpy threshold, as demonstrated in **Table 3-2**. Therefore, the South Alternative would not result in a significant impact on air quality.

Climate Change and Greenhouse Gases. The South Alternative would emit approximately 729 tons of CO₂e during 2021. By comparison, this amount of CO₂e is approximately the GHG footprint of 140 passenger vehicles driven for 1 year or 79 homes' energy use for 1 year (USEPA 2018). As such, this annual emission of GHGs would be largely identical to the North Alternative and would not meaningfully contribute to the potential effects of global climate change. Therefore, the South Alternative would not result in a significant impact on climate change.

Ongoing changes to climate patterns in the southeastern United States would have identical impacts on the pathway under the South Alternative as described for the North Alternative in **Section 3.1.3.1**.

3.1.3.3 NO ACTION ALTERNATIVE

Air quality conditions would remain the same as described in **Section 3.1.2**, and no effects on air quality would occur. Air emissions from construction and operation of the pathway would not be produced.

3.2 Biological Resources

3.2.1 Definition of the Resource

Terrestrial Biological Resources

Biological resources include native or naturalized plants and animals and the habitats (e.g., grasslands, forests, wetlands) in which they exist. Protected and sensitive biological resources include ESA-listed species (threatened or endangered), species proposed for ESA listing by USFWS, and migratory birds. Migratory birds are protected species under the Migratory Bird Treaty Act (MBTA). Sensitive habitats include areas designated or proposed by USFWS as critical habitat protected by the ESA and sensitive ecological areas designated by state or other federal rulings. Sensitive habitats also include wetlands, plant communities that are unusual or limited in distribution, and important seasonal use areas for wildlife (e.g., migration routes, breeding areas, crucial summer and winter habitats).

The ESA (16 USC § 1531 et seq.) establishes a federal program to protect and recover imperiled species and the ecosystems upon which they depend. The ESA requires federal agencies, in consultation with USFWS, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. Under the ESA, "jeopardy" occurs when an action is reasonably expected, directly or indirectly, to diminish numbers, reproduction, or distribution of a species so that the likelihood of survival and recovery in the wild is appreciably reduced. An "endangered species" is defined by the ESA as any species in danger of extinction throughout all or a significant portion of its range. A "threatened species" is defined by the ESA as any species likely to become an endangered species in the

foreseeable future. “Candidate species” are those that USFWS has sufficient information to propose for listing as endangered or threatened but the proposals are superseded by higher priority listing actions. Candidate species do not receive full ESA protection, and the federal government promotes voluntary conservation efforts because the species may warrant ESA protection in the future. The ESA also prohibits any action that causes a “take” of any listed animal. “Take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect or attempt to engage in any such conduct.” Listed plants are not protected from take, although it is illegal to collect or maliciously harm them on federal land.

Critical habitat is designated if USFWS determines that the habitat is essential to the conservation of a federal threatened or endangered species. Federal agencies must ensure that their activities do not adversely modify designated critical habitat to the point that it will no longer aid in the species’ recovery.

Florida-protected wildlife species are protected under Florida Administrative Code (FAC) Chapter 68A-27. Florida Fish and Wildlife Conservation Commission (FWC) maintains the list of state-designated endangered species, threatened species, and species of special concern (SSC) (FWC 2019). Eglin AFB has 74 state-listed threatened or endangered species, most of which are plants (USAF 2017). Air Force Manual 32-7003, *Environmental Conservation*, calls for the protection and conservation of state-listed species when not in direct conflict with the military mission. Management actions conducted by the Eglin AFB Natural Resources Office (NRO), primarily for many of the federally listed species, provide direct and indirect benefits to many state-listed and other rare species.

The MBTA of 1918 (16 USC § 703–712), as amended, and EO 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, require federal agencies to minimize or avoid impacts on migratory birds. Unless otherwise permitted by regulations, the MBTA makes it unlawful to (or attempt to) pursue, hunt, take, capture, or kill any migratory bird, nest, or egg.

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (BGEPA), which prohibits the “take” of bald or golden eagles in the United States without a 50 CFR § 22.26 permit. BGEPA defines “take” as “pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb.” For purposes of these guidelines, “disturb” means “to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause: (1) injury to an eagle; (2) a decrease in its productivity by substantially interfering with normal breeding, feeding, or sheltering behavior; or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior.” In addition to immediate impacts, this definition also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle’s return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

The Federal Noxious Weed Act (Public Law 93-629) mandates control of noxious weeds by limiting possible weed seed transport from infested areas to non-infested sites. EO 13112, *Invasive Species*, requires all federal agencies to prevent the introduction of invasive species; provide for their control; and minimize their economic, ecological, and human health impacts.

Under EO 13112, installations shall not, to the extent practicable, authorize, fund, or carry out management actions that are likely to cause the introduction or spread of invasive species.

Marine Biological Resources

Marine biological resources include and occupy the water column and substrates found within the Gulf of Mexico and Choctawhatchee Bay. Sensitive habitats and species within these waterbodies are protected under federal or state laws such as the Marine Mammal Protection Act (MMPA) and ESA. Other habitats and species in the Gulf of Mexico and Choctawhatchee Bay also are protected under the Magnuson-Stevens Fisheries Management and Conservation Act (MSA).

The MMPA established, with limited exceptions, a moratorium on the “taking” of marine mammals in waters or on lands under U.S. jurisdiction. The act further regulates “takes” of marine mammals in the high seas by vessels or persons under U.S. jurisdiction. The term take, as defined in Section 3 (16 USC § 1362) of the MMPA, means “to harass, hunt, capture, or kill, or attempt to harass, hunt, capture, or kill any marine mammal.” Harassment was further defined in the 1994 amendments to the MMPA, which provided for two levels of harassment: Level A (injury) and Level B (behavioral harassment).

The MSA is the primary law governing marine fisheries management in U.S. federal waters. First passed in 1976, the MSA fosters long-term biological and economic sustainability of our nation’s marine fisheries. Key objectives of the MSA are to: 1) prevent overfishing; 2) rebuild overfished stocks; 3) increase long-term economic and social benefits; and 4) ensure a safe and sustainable supply of seafood.

3.2.2 Affected Environment

Terrestrial Biological Resources

Vegetation. Vegetation within the project area varies between Okaloosa Island (primarily developed) and Eglin AFB (primarily undeveloped). Okaloosa Island is highly developed and most of the vegetation is disturbed or landscaped. The vegetation consists of landscaped sabal palm trees (*Sabal palmetto*), Phoenix Sylvester palms (*Phoenix sylvestris*), and fan palms (*Washingtonia* sp.). Landscaped shrubs include the Canary Island date palm (*Phoenix canariensis*), pindo palm (*Butia capitata*), and sago palm (*Cycas revoluta*). The vegetation in the Okaloosa Island portion of the project area is routinely maintained and the grass is primarily a turf-type grass species.

The vegetation community on the Eglin AFB portion of the project area is classified as barrier island beach, dune, and scrub. The beach and dune coastal strand vegetation communities are restricted to the high-energy shorelines along the seaward boundary of the spits and barrier islands of Panhandle Florida (Wolfe et al. 1988). This vegetation community has three distinguishable zones: (1) the shifting beach sands; (2) the produne vegetation; and (3) the scrub zone. The shifting beach sand zone lacks any living, rooted vegetation. The produne zone is the first large dune. Produne vegetation is characterized as pioneer plants that are able to establish themselves in the shifting sands including sea oats (*Uniola paniculata*), rail road vine (*Ipomoea pes-caprae*), beach morning glory (*I. stolonifera*), evening primrose (*Oenothera*

humifusa), sand spur (*Cenchrus tribuloides*), grasses (*Paspalum vaginatum*, *Schizachyrium maritimum*, *Panicum amarum*), sand cocoglass (*Cyperus lecontei*), and sea purslane (*Sesuvium portulacastrum*). On the backsides of these dunes, Spanish bayonet (*Yucca aloifolia*), myrtle oak (*Quercus myrtifolia*), green brier (*Smilax auriculata*), saw palmetto (*Serenoa repens*), and other plants characteristic of the interior dunes may grow. The scrub zone vegetation includes sand-live oak (*Quercus virginiana geminata*), Chapmans oak (*Q. chapmanii*), and fetterbush (*Lyonia lucida*). Other common shrubs include different types of rosemary (*Ceratiola ericoides*, *Conradina canescens*) and gopher apple (*Licania michauxii*). Ground cover is usually sparse, leaving large patches of bare white sand interspersed with reindeer moss (*Cladonia rangifera*) and other lichens (Wolfe et al. 1988).

The vegetation within the Eglin AFB portion of the project area experiences routine maintenance per FDOT highway guidelines and is previously disturbed due to construction of U.S. 98 and installation of underground utilities. In addition, occasional high-water events from tropical storms and hurricanes have affected this area and tend to create a dynamic environment from tidal surges and subsequent shifting sands.

Wildlife. Commonly observed wildlife within the project area are similar to those found within the barrier island vegetation community. Species include raccoon (*Procyon lotor*), rodents, six-lined racerunner (*Aspidoscelis sexlineata*), eastern diamondback rattlesnake (*Crotalus adamanteus*), bobwhite quail (*Colinus virginianus*), mourning dove (*Zenaida macroura*), and various songbirds. Various frogs, alligators, and wading birds occur within the wetlands. Sanderling (*Calidris alba*), willet (*Tringa semipalmata*), Wilson's plover (*Charadrius wilsonia*), snowy plover (*Charadrius nivosus*), royal tern (*Thalasseus maximus*), laughing gull (*Leucophaeus atricilla*), brown pelican (*Pelicanus occidentalis*), herring gull (*Larus argentatus*), great egret (*Ardea alba*), great blue heron (*Ardea herodias*), reddish egret (*Egretta rufescens*), tri-colored heron (*Egretta tricolor*), and snowy egret (*Egretta thula*) are commonly observed on the beaches.

Protected Species. There are 8 federally protected species, 14 state-protected species, 1 Eglin AFB/The Nature Conservancy conservation target species, and 1 species protected under the BGEPA that have the potential to occur within or near the project area (USFWS 2019a, FWC 2019). The gopher tortoise (*Gopherus polyphemus*) is both a federal candidate and a state threatened species. **Table 3-3** provides a list of these species including their status, habitat and range, whether suitable habitat is present within the project area, and the potential to occur in the project area.

Of the species listed in **Table 3-3**, four state-protected species are likely to occur in the project area, and one BGEPA-protected species, the bald eagle (*Haliaeetus leucocephalus*), is known to occur within the project area. The four state-protected species are the great egret (*Ardea alba*), eastern least tern (*Sternula antillarum antillarum*), little blue heron (*Egretta caerulea*), and tricolored heron (*Egretta tricolor*).

Table 3-3. Federally and State Protected Terrestrial Species

Species	Designated Status (Federal and State)	Habitat and Range Description	Habitat Present in Project Area	Potential to Occur within the Project Area
Amphibians				
Reticulated flatwoods salamander (<i>Ambystoma bishopi</i>)	FE	This salamander breeds in ponds that are typically acidic, tannin-stained, isolated, ephemeral wetlands (marshlike depressions) with abundant herbaceous vegetation. Nonbreeding habitat consists of upland pine flatwoods-savanna habitat that is open, mesic woodland maintained by frequent fires (USFWS 2009).	No	Unlikely
Reptiles				
Eastern indigo snake (<i>Drymarchon corais couperi</i>)	FT	This snake prefers upland habitat types such as longleaf pine (<i>Pinus palustris</i>) sandhills, scrub, pine flatwoods, tropical hardwood hammocks, and coastal dunes. It also uses a variety of lowland and human-altered habitats. They may move seasonally between upland and lowland habitats. In Florida, it has been documented throughout the state, but observations are rare in the Florida Panhandle and the northeastern portion of the North Florida region (USFWS 2019b).	No	Unlikely
Gopher tortoise (<i>Gopherus polyphemus</i>)	Federal candidate and ST	Gopher tortoises require well-drained, sandy soils for burrowing and nest construction, an abundance of herbaceous ground cover for food, and a generally open canopy that allows sunlight to reach the forest floor. Common habitat types include longleaf pine and oak uplands, xeric hammock, sand pine and oak ridges (beach scrub), and ruderal/disturbed (roadsides and utility ways, grove/forest edges, fencerows, and clearing edges) habitat. The range for the eastern population includes Alabama (east of the Tombigbee and Mobile Rivers), Florida, Georgia, and South Carolina (USFWS 2012).	Yes	Unlikely
Birds				
American oystercatcher (<i>Haematopus palliatus</i>)	ST	The American oystercatcher inhabits beaches, sandbars, spoil islands, shell rakes, salt marshes, and oyster reefs. Oystercatchers can be found from the northeastern United States down to Florida's Gulf Coast. This species is both a resident breeding and a wintering species in Florida (FWC 2019).	No	Unlikely

Species	Designated Status (Federal and State)	Habitat and Range Description	Habitat Present in Project Area	Potential to Occur within the Project Area
Bald eagle (<i>Haliaeetus leucocephalus</i>)	BGEPA	Eagle nesting territories include inland lake and river systems in peninsular Florida, such as the Kissimmee Chain of Lakes, and along the Gulf coast. Bald eagles use forested habitats for nesting and roosting, and shallow freshwater or saltwater for foraging. The nesting period in the southeastern United States extends from October 1 to May 15 with most nests being completed by the end of November. In northwestern Florida, most successful nests are laid by mid-February. One active nest is on Santa Rosa Island, on the publicly accessible portion near the USCG station (FWC 2019; Eglin AFB 2019).	Yes	Known Occurrence
Black skimmer (<i>Rynchops niger</i>)	ST	Inhabits the backwaters of rivers and streams off the main channel. This species may be found in the Yellow, Shoal, and Blackwater rivers, and Pond Creek in Florida; Bay Minnette Creek in Alabama; and the Pascagoula, Lower Black Creek, and Chickasawhay rivers in Mississippi (FWC 2019).	No	Unlikely
Caspian tern (<i>Hydroprogne caspia</i>)	FNAI-Tracked	The Caspian tern breeds and/or winters along coastlines and inland along rivers, lakes, and marshes. It is present year-round in Florida (Cuthbert and Wires 1999).	No	Unlikely
Great egret (<i>Ardea alba</i>)	FNAI-Tracked	This egret inhabits streams, lakes, ponds, mud flats, saltwater, and freshwater marshes present throughout Florida (FWC 2019).	Yes	Likely
Eastern least tern (<i>Sternula antillarum antillarum</i>)	ST	The eastern least tern inhabits areas along the coasts of Florida, including estuaries and bays. In Florida, the eastern least tern can be found throughout most coastal areas. Outside of Florida, eastern least terns are found along the U.S. Atlantic Coast, mid-Atlantic states, and from Mexico to northern Argentina (FWC 2019).	Yes	Likely
Little blue heron (<i>Egretta caerulea</i>)	ST	Little blue herons inhabit fresh, salt, and brackish water environments in Florida including swamps, estuaries, ponds, lakes, and rivers. In the United States, they can be found from Missouri, east to Virginia, down to Florida, and west to Texas. In peninsular Florida, they are common and widespread but rare in the Panhandle (FWC 2019).	Yes	Likely
Piping plover (<i>Charadrius melodus</i>)	FT	The piping plover winters along the Florida coast. In general, wintering plovers are found at accreting ends of barrier islands, along sandy peninsulas, and near coastal inlets. They appear to prefer sandflats adjacent to inlets or passes, sandy mudflats along prograding spits, and overwash areas as foraging habitats. Plovers are present on wintering grounds late August through early April (USFWS 1996a).	No	Unlikely

Species	Designated Status (Federal and State)	Habitat and Range Description	Habitat Present in Project Area	Potential to Occur within the Project Area
Red-cockaded woodpecker (<i>Picoides borealis</i>)	FE	Red-cockaded woodpeckers require open pine woodlands and savannahs with large old pines, such as longleaf pine, for nesting and roosting habitat. Also, old pines are preferred as cavity trees, because of the higher incidence of heartwood decay. Cavity trees must be in open stands with little or no hardwood midstory and few or no overstory hardwoods. This species occurs throughout the Gulf coastal plain as well as along the Atlantic coast (USFWS 2003).	No	Unlikely
Reddish egret (<i>Egretta rufescens</i>)	ST	Reddish egrets inhabit coastal areas, mainly on estuaries near mangroves, and lagoons, but they also can be found on dredge spoil islands. This species can be found year-round on the coasts of the Florida peninsula (FWC 2019).	No	Unlikely
Red knot (<i>Calidris canutus rufa</i>)	FT	The red knot winters in Florida from December to February but may be present in some wintering areas as early as September or as late as May. Wintering habitat includes coastal marine and estuarine (partially enclosed tidal area where freshwater and saltwater mixes) habitats with large areas of exposed intertidal sediments. They commonly are found along sandy, gravel, or cobble beaches; tidal mudflats; salt marshes; shallow coastal impoundments and lagoons; and peat banks (USFWS 2013).	No	Unlikely
Royal tern (<i>Thalasseus maxima</i>)	FNAI-Tracked	Present in coastal areas throughout Florida including beaches, lagoons, bays, estuaries, and inlets. Occasionally found on some large inland lakes and phosphate pits in central Florida. Loafs and sleeps on sandbars, mudflats, beaches. Nests are shallow depressions scraped out in dry sand, well above high-tide levels, usually on small islands. Nests also on dredge spoil islands. Nonbreeding and wintering royal terns are found along both coasts, the Florida Keys, and inland around large lakes, rivers, and phosphate pits (FNAI 2001a).	No	Unlikely
Sandwich tern (<i>Thalasseus sandvicensis</i>)	FNAI-Tracked	Coastal areas throughout Florida, including beaches, lagoons, bays, estuaries, and inlets. Nests are shallow depressions scraped out in dry sand, well above high-tide levels, usually on small islands. Common year-round throughout Florida (FWC 2019).	No	Unlikely
Snowy plover (<i>Charadrius alexandrinus</i>)	ST	The snowy plover inhabits sandy beaches along coastal areas of the Americas, and some inland saline lakes and riverbeds west of the Rocky Mountains. This species occurs on Florida's narrow fringe of sandy beaches along the Gulf of Mexico coast (FWC 2019).	No	Unlikely

Species	Designated Status (Federal and State)	Habitat and Range Description	Habitat Present in Project Area	Potential to Occur within the Project Area
Tricolored heron (<i>Egretta tricolor</i>)	ST	Tricolored herons inhabit fresh and saltwater marshes, estuaries, mangrove swamps, lagoons, and river deltas. They can be found from Massachusetts, down through the Gulf of Mexico and Caribbean to northern Brazil (FWC 2019).	Yes	Likely
Wilson's plover (<i>Charadrius wilsonia</i>)	FNAI-Tracked	Almost entirely coastal, inhabiting sandy beaches, tidal flats, and spoil islands. Nests on dry sand or bare soil, abandoned road surfaces, and (rarely) roof tops. Usually locates nests near vegetation or debris, although more tolerant of vegetated areas. In breeding season, plovers are most abundant along the Gulf coast from Escambia County east to Franklin County, and Anclote Key south through the Florida Keys (FNAI 2001b).	No	Unlikely
Wood stork (<i>Mycteria americana</i>)	FT	The wood stork is found in freshwater and estuarine wetlands for nesting, feeding, and roosting. They are found throughout Alabama, Florida, Georgia, Mississippi, and coastal North and South Carolina (USFWS 1996b).	No	Unlikely
Mammals				
Santa Rosa beach mouse (<i>Peromyscus polionotus leucocephalus</i>)	Eglin AFB/The Nature Conservancy conservation target	Beach mice are mostly nocturnal and construct underground nests in dunes. They inhabit frontal dune and scrub habitat within the coastal dune ecosystem on Santa Rosa Island preferring sand-covered slopes with patches of grasses and herbs (Eglin AFB 2019).	No	Unlikely
Lichen and Plants				
Florida perforate cladonia (<i>Cladonia perforata</i>)	FE	This lichen is known from 16 populations throughout Florida, including three populations on Santa Rosa Island. Habitat for this species is high sand dune ridges. This lichen is restricted to the highest, xeric white sands in sand pine scrub, typically in the rosemary balds, which are particularly well-drained and structurally open. It typically occurs in open patches of sand between shrubs in areas with sparse or no herbaceous cover (USFWS 2004).	Yes	Unlikely (based on lichen survey and development)
Spoonleaf sundew (<i>Drosera intermedia</i>)	ST	This plant is found in full sun in wet acid sandy soil or sphagnum moss (FWC 2019).	No	Unlikely

Notes: BGEPA = Bald and Golden Eagle Protection Act; FE = federally endangered; FT = federally threatened; FNAI = Florida Natural Areas Inventory; ST = state threatened
 Sources: USFWS 2019a; Eglin AFB 2019; FWC 2019; Eglin AFB 2020

Eight federally protected species, ten state-protected species, and one Eglin AFB/The Nature Conservancy conservation target species are unlikely to occur in the project area. These species are the reticulated flatwoods salamander (*Ambystoma bishopi*), eastern indigo snake (*Drymarchon corais couperi*), gopher tortoise (*Gopherus polyphemus*) (federal candidate and state threatened), American oystercatcher (*Haematopus palliatus*), black skimmer (*Rynchops niger*), Caspian tern (*Hydroprogne caspia*), piping plover (*Charadrius melodus*), red-cockaded woodpecker (*Picoides borealis*), reddish egret (*Egretta rufescens*), red knot (*Calidris canutus rufa*), royal tern (*Thalasseus maxima*), sandwich tern (*Thalasseus sandvicensis*), snowy plover (*Charadrius alexandrinus*), Wilson's plover (*Charadrius wilsonia*), wood stork (*Mycteria americana*), Santa Rosa beach mouse (*Peromyscus polionotus leucocephalus*), spoonleaf sundew (*Drosera intermedia*), and Florida perforate cladonia (*Cladonia perforata*). Three of the eight federally protected species require contiguous stands of pine trees that are not present in the project area. Additionally, the gopher tortoise is not known to occur on Santa Rosa Island, but does occur on the mainland to the north of the island (USAF 2017). The eastern indigo snake has not been observed on Eglin AFB since 1999. The black skimmer is often found in inlet river systems as well as protected, shallow coastal shorelines, which are not present in the project area. Many of the federally listed species in **Table 3-3** have proposed or designated critical habitat, but none of the critical habitat occurs within the project area.

Although suitable habitat occurs for the Florida perforate cladonia within the project area, no individuals were observed during a lichen survey within the Eglin AFB portion of the project area (see **Figures 2-2** through **2-5**) conducted on June 4, 2019. Based on its primarily developed nature and low sand dunes in the few less-developed areas on its eastern extent, no Florida perforate cladonia are anticipated within the Okaloosa Island portion of the project area.

USFWS manages a list of MBTA species that occur in the United States and its territories. As of March 2020, there are 1,093 migratory bird species on the list, which is available at <https://www.fws.gov/birds/management/managed-species/migratory-bird-treaty-act-protected-species.php>. USFWS periodically updates the list of species protected by the MBTA due to new taxonomy and new evidence of natural occurrence in the United States or U.S. territories, species no longer known to occur within the United States or U.S. territories, and name changes to conform to accepted use (USFWS 2020).

Marine Biological Resources

For the North Alternative, the project area ranges from approximately 40 feet to 1,800 feet from the shoreline. All of the North Alternative is at least 200 feet from the shoreline except for an approximately 400-foot-long area along a seawall that is as close as 40 feet from the shoreline within the Eglin AFB portion of the North Alternative. For the South Alternative, the project area ranges from 300 feet to 1,400 feet from marine waters. **Figures 2-2** through **2-5** show the project area and nearby waters.

Intertidal Zone. The intertidal zone is the area between the low and high tide lines. Species found in the intertidal zone include polychaete worms, coquina clams (*Donax* sp.), amphipod and isopod crustaceans (beach hoppers or sand fleas), and ghost crabs (*Ocypode quadrata*). Fish and predatory birds feed on the smaller organisms of this zone. Among intertidal organisms, polychaetes are numerically dominant, although amphipods and ghost crabs are

more visible (Eglin AFB 2019). Intertidal zone species populations are also seasonal, decreasing in the winter and achieving a maximum in the summer.

Nearshore Environment. The nearshore environment includes the benthos (the bottom, or in the bottom sediments, of a sea) and the pelagic (the upper layers of the open sea) environment. Benthic invertebrates include the infauna (animals living in the substrate), such as burrowing worms and mollusks, and the epifauna (animals that live on the substrate), such as mollusks, crustaceans, hydroids, sponges, and echinoderms (Dames and Moore 1979). The nearshore pelagic environment consists of the plankton community and the nekton community. Fishes of the eastern Gulf of Mexico inhabit all areas of the water column. Benthic and reef fishes live near the seafloor and around artificial or natural reef systems.

Protected Marine Species. There are eight federally protected marine species that have the potential to occur in the waters and shores near the project area (see **Table 3-4**). Many of the marine and semi-aquatic species, including Gulf sturgeon (*Acipenser oxyrinchus desotoi*), green sea turtle (*Chelonia mydas*), Kemp's Ridley sea turtle (*Lepidochelys kempii*), leatherback sea turtle (*Dermochelys coriacea*), loggerhead sea turtle (*Caretta caretta*), and West Indian manatee (*Trichechus manatus*), are nearby but not within the project area. In addition to the federally listed species in **Table 3-4**, the bottlenose dolphin (*Tursiops truncatus*) and the Atlantic spotted dolphin (*Stenella frontalis*), which are marine mammals protected under the MMPA, have the potential to occur within the nearshore environments near the project area (Eglin AFB 2019). NMFS manages both species. The Gulf sturgeon (*Acipenser oxyrinchus desotoi*) is the only species with designated critical habitat within the waters of Choctawhatchee Bay and nearshore waters of the Gulf of Mexico, which are north and south of the project area, respectively. The marine and semi-aquatic species listed in **Table 3-4** may occur or have the potential to occur in marine environments nearby, but do not occur within, the project area.

Essential Fish Habitat. The MSA requires federal agencies to assess potential impacts on Essential Fish Habitat (EFH) for NMFS-managed commercial fisheries. In accordance with the MSA, any federal action that has the potential to adversely affect EFH requires consultation with NMFS. As defined in Section 3 of the MSA, "fish" includes finfish, mollusks, crustaceans, and all other forms of marine animal and plant life other than marine mammals and birds. EFH is defined as those waters and substrate necessary for fish spawning, feeding, or growth to maturity. EFH communities range from naturally occurring hard-bottom areas and artificial reefs to floating mats of *Sargassum* algae. Some potential threats to habitat include certain fishing practices, marina construction, navigation projects, dredging, alteration of freshwater input into estuaries, and runoff.

The marine and estuarine waters in the Gulf of Mexico and Choctawhatchee Bay surrounding the project area provide EFH for nine species or groups of species. EFH surrounding the project area is present for coastal migratory pelagics, red drum (*Sciaenops ocellatus*), reef fish, shrimp, bull shark (*Carcharhinus leucas*), blacktip shark (*C. limbatus*), sandbar shark (*C. plumbeus*), spinner shark (*C. brevipinna*), and bonnethead shark (*Sphyrna tiburo*) (NOAA 2020).

Table 3-4. Federally and State Protected Marine Species

Species	Designated Status (Federal and State)	Habitat and Range Description	Habitat Present in Project Area	Potential to Occur near the Project Area
Fish				
Atlantic (Gulf) sturgeon (<i>Acipenser oxyrinchus desotoi</i>)*	FT	This fish migrates from saltwater into large coastal rivers to spawn and spend the warm months. The majority of its life is spent in fresh water. Gulf sturgeon occur in most major river systems from the Mississippi River to the Suwannee River, Florida, and in marine waters of the Central and Eastern Gulf of Mexico south to Florida Bay (USFWS and GSMFC 1995).	No	Likely
Reptiles				
Green sea turtle (<i>Chelonia mydas</i>)	FT	Green turtles occupy three habitat types: high-energy oceanic beaches, convergence zones in the pelagic habitat, and benthic feeding grounds in relatively shallow, protected waters. In U.S. Atlantic waters, green turtles are found around the U.S. Virgin Islands, Puerto Rico, and continental United States from Texas to Massachusetts. Important feeding areas in Florida include Indian River Lagoon, Florida Keys, Florida Bay, Homosassa, Crystal River, and Cedar Key (NMFS and USFWS 1991).	No	Likely
Kemp's Ridley sea turtle (<i>Lepidochelys kempii</i>)	FE	Coastal habitat for this species includes areas sheltered from high winds and waves such as embayments, estuaries, and nearshore temperate waters. Optimal environments appear to provide food sources of crabs and other invertebrates. Kemp's Ridley range includes the Gulf of Mexico and northwest Atlantic Ocean as far north as the Grand Banks and Nova Scotia. Nesting is limited to the beaches of the western Gulf of Mexico. In the U.S., nesting occurs primarily in Texas, and occasionally in Florida, Alabama, Georgia, South Carolina, and North Carolina (NMFS and USFWS 2015).	No	Likely
Leatherback sea turtle (<i>Dermochelys coriacea</i>)	FE	Leatherbacks nest on beaches in the tropics and sub-tropics and forage into higher-latitude subpolar waters. Important nesting areas in the western Atlantic Ocean occur in Florida. Nesting beach habitat is generally associated with deep water and strong waves and oceanic currents but shallow water with mud banks also are used by leatherbacks. Beaches with coarse-grained sand and free of rocks, coral, or other abrasive substrates appear to be selected (NMFS and USFWS 2013).	No	Likely
Loggerhead sea turtle (<i>Caretta caretta</i>)	FT	The loggerhead sea turtle occurs throughout the temperate and tropical regions of the Atlantic, Pacific, and Indian Oceans. In the United States, they nest along Alabama, Florida, Georgia, North Carolina, South Carolina, Texas, and Virginia. Loggerheads nest on ocean beaches and occasionally on estuarine shorelines with suitable sand. Nests are typically laid between the high tide line and the dune front. Loggerheads appear to prefer relatively narrow, steeply sloped, coarse-grained beaches (NMFS and USFWS 2008).	No	Likely

Species	Designated Status (Federal and State)	Habitat and Range Description	Habitat Present in Project Area	Potential to Occur near the Project Area
Mammals				
Atlantic spotted dolphin (<i>Stenella frontalis</i>)	MMPA	Although this dolphin is a common offshore resident of the Gulf of Mexico, it may move into nearshore waters in late spring and summer in Florida. This movement may be related to the movements of certain prey species for the dolphins.	No	Likely
Common bottlenose dolphin (<i>Tursiops truncatus</i>)	MMPA	The bottlenose dolphin is found throughout the world in offshore and coastal waters including harbors, bays, gulfs, and estuaries of temperate and tropical waters (NOAA 2019).	No	Likely
West Indian manatee (<i>Trichechus manatus</i>)	FT, MMPA	Florida manatees can be found in freshwater, brackish, and marine environments. Typical coastal and inland habitats include coastal tidal rivers and streams, mangrove swamps, salt marshes, freshwater springs, and vegetated bottoms. They are found throughout the southeastern United States. They are a sub-tropical species with little tolerance for cold and remain near warm-water sites in peninsular Florida during the winter. During periods of intense cold, manatees will remain at these sites; during warm interludes, they move from the warm-water areas to feed and return once again when the water temperature is too cold. During warmer months, manatees may disperse great distances (USFWS 2007).	No	Likely

Notes: FE = federally endangered, FT = federally threatened, MMPA = Marine Mammal Protection Act, * = USFWS Information, Planning, and Consultation System lists critical habitat within the project area.

Sources: USFWS 2019a; Eglin AFB 2019

In addition to establishing EFH, the MSA also directs the identification of habitat areas of particular concern (HAPCs). HAPCs are subsets of EFH that are rare, especially ecologically important, particularly susceptible to human-induced degradation, or located in environmentally stressed areas (50 CFR § 600.815(a)(8)). HAPCs have been identified in the northwestern Gulf of Mexico; some are categorized as reef and bank HAPCs, while others are marine reserves with fishing restrictions. None of these HAPCs occurs near the project area. The closest HAPC is the Madison Swanson Marine Reserve, over 80 miles to the southeast of the project area. The Proposed Action would not affect the Gulf of Mexico HAPCs; therefore, they are not discussed further.

3.2.3 Environmental Consequences

The evaluation of impacts on biological resources considers whether the action would result in a direct injury or mortality of an individual, particularly a protected or sensitive species. Each species has unique, fundamental needs for food, shelter, water, and space and can be sustained only where their specific combination of habitat requirements is available. Removal of sustaining elements of a species' habitat affects its ability to exist. Therefore, the evaluation of impacts on biological resources also is based on whether the action would cause habitat displacement resulting in reduced feeding or reproduction, removal of critical habitat for sensitive species, and/or behavioral avoidance of available habitat because of noise or human disturbance.

Potential impacts on biological resources are evaluated based on the following criteria:

- importance (e.g., legal, commercial, recreational, ecological, scientific) of the resource
- proportion of the resource that would be affected relative to its occurrence in the region
- sensitivity of the resource to proposed activities
- duration of ecological impacts
- potential for "taking" of federally listed species
- effect on ESA-protected species habitat.

Effects on biological resources would be significant if species or habitats of concern based on legal status or ecological importance would be adversely affected over large areas. Effects also would be considered significant if disturbances would cause reductions in population size or distribution of a sensitive species or a species with regional or local significance.

Because the biological resources within the Okaloosa Island and Eglin AFB portions of the project area are similar, the potential impacts of the alternatives on each portion of the project area are presented together rather than divided by land ownership. Any difference in potential impacts based on land ownership is noted in the following subsections.

3.2.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Terrestrial Biological Resources

Vegetation. Short- and long-term, negligible to minor, adverse, direct impacts on native vegetation would be expected from construction and operation of the pathway for the North Alternative. As mentioned in **Section 3.2.2**, the Okaloosa Island portion is largely developed and most of the occurring vegetation has been planted as part of landscaping and is routinely maintained, and most of the native vegetation occurs along the Eglin AFB portion. Much of both portions of the project area is previously disturbed from construction of U.S. 98 and installation of utilities, routine vegetation maintenance, and hurricanes and tropical storms.

Short-term impacts from grubbing and grading the project area, temporary staging areas, and movement of construction equipment include temporary vegetation removal, trampling and crushing of non-target vegetation, soil compaction, and disturbing soil structure. Up to 6.34 acres of Eglin AFB protective buffers and areas would be affected during construction. Because the project area is within developed or previously disturbed areas, vegetation would reestablish after construction and maintenance and repair activities, and BMPs and management actions in **Section 4.3** would be enacted, short-term impacts on vegetation would be negligible to minor.

Long-term impacts from the North Alternative include the permanent removal of approximately 18 acres of vegetation along the northern side of U.S. 98 for the pathway, including native vegetation, several trees, and vegetation within the protective buffers and areas on Eglin AFB. Additionally, pathway users that do not stay on the pathway would cause minor deterioration of the vegetation, primarily along the edges of the pathway, and general maintenance and repair activities would periodically disturb vegetation. Most of the pathway and associated infrastructure would be placed within developed or previously disturbed areas; therefore, impacts on vegetation would be minor. Long-term impacts on vegetation would be limited via use of appropriate BMPs and the management actions in **Section 4.3**. To minimize long-term impacts on Eglin AFB protective buffers and areas, approximately 8,400 linear feet of environmental fencing would be installed to keep pathway users out of these areas.

The Proposed Action could result in long-term, minor, indirect effects associated with nonnative and invasive species encroachment and erosion and sedimentation in vegetated areas. Soil disturbances from construction and general maintenance and repair activities could provide opportunities for nonnative and invasive species to establish or spread and erosion and sedimentation. The following BMPs could be implemented during and following construction and maintenance and repair actions to minimize soil disturbance, control erosion and sedimentation, and prevent the establishment and spread of nonnative and invasive species:

- Inspect and clean construction equipment to remove soil, plants, and seeds prior to equipment entering or leaving the project area. Construction equipment inspection and cleaning areas would be capable of containing materials removed from the construction equipment. The locations and other requirements for the construction equipment inspection and cleaning areas would be identified in a construction/maintenance contract or agreement, work plan, or other document.
- Ensure all fill is as free of nonnative plant propagules as is practicable.
- Revegetate disturbed areas with native plant species as agreed upon by FDOT and the Eglin AFB NRO.

Wildlife. Short- and long-term, negligible to minor, adverse, direct impacts on wildlife would be expected under the North Alternative. During construction, mortality of less mobile individuals could occur from collisions with heavy equipment or construction-related vehicles. Short-term, minor, adverse, direct impacts on wildlife would also occur because of temporary, intermittent noise disturbances associated with construction. Loud noise can disturb wildlife, resulting in avoidance behaviors; however, these effects would be temporary. Noise can also distort or mask bird communications signals (e.g., songs, warning calls, fledgling begging calls) and their ability to find prey or detect predators. If noise persists in a particular area, animals could leave their habitat and avoid it permanently. Avoidance behavior by animals requires the expenditure of excess energy that is needed for survival (e.g., finding new food sources, water sources, breeding and nesting habitats) (Ellis et al. 1991). Noises associated with construction would only be expected to affect individual animals within proximity (typically within 800 feet) to the noise sources. Wildlife species generally would be expected to recover quickly from noise disturbance once the construction has ceased. Furthermore, construction noise levels would only temporarily increase the ambient noise because wildlife are habituated to the existing noise levels from traffic and vegetation maintenance along U.S. 98 and military training at Eglin AFB. As a result, population-level impacts would not be expected to occur.

Operation of the pathway could have long-term, negligible, direct impacts on wildlife. Effects on wildlife habitat might occur when construction vehicles and equipment access, park at, and maneuver around areas requiring maintenance and repair. Most maintenance and repair activities are expected to occur within or adjacent to the pathway and existing roads and any adverse impacts on habitat would be minimized with appropriate BMPs and management actions (see **Section 4.3**). During pathway use and maintenance and repair activities, wildlife would exhibit similar avoidance behavior as previously mentioned. Wildlife that occur in and near the project area are habituated to human activity and presence, and pathway use and maintenance and repair activities would not differ significantly from existing actions along and near U.S. 98. Because individuals in this area are habituated to this level of activity, long-term impacts would be negligible.

Protected Species. Short- and long-term, negligible to minor, direct impacts on protected terrestrial species (federal, state, and MBTA) are expected under the North Alternative. The Okaloosa Island portion of the project area is highly developed, with little to no suitable habitat for state or federally protected species. Based on the level of development, state and federally protected species are unlikely to use the Okaloosa Island portion of the project area as a stopover before reaching suitable habitat. Suitable habitat is present within the Eglin AFB portion of the project area for seven terrestrial protected species; however, only five terrestrial protected species (four state-protected and one BGEPA-protected) are likely to occur in the project area (see **Table 3-3**). The BGEPA-protected bald eagle is known to nest within the project area and could occupy the nest year-round. A pair of bald eagles has been documented nesting near USCG Station Destin, approximately 250 feet outside of the project area within the last year.

Although unlikely, terrestrial protected species could be harmed or injured during construction and general maintenance and repair from accidental strikes with construction equipment and

vehicles while on site. To avoid or minimize incidental take from collisions with equipment, crews should abide by posted construction speed limits while entering or leaving the site. Other BMPs and management actions (see **Section 4.3**) would be implemented to avoid or minimize impacts on protected species that have the potential to occur in the project area. Additionally, approximately 8,400 linear feet of environmental fencing would be installed to keep pathway users out of the Eglin AFB protective buffers and areas (protected species and habitat areas).

Short- and long-term direct effects on protected bird species include temporary disruption or modification of their behavior (including nesting and foraging) from noise or other disturbances (e.g., trampling or crushing of nests, eggs, or chicks) during construction and operation of the pathway. Noise can also distort or mask bird communications signals (e.g., songs, warning calls, fledgling begging calls) and their ability to find prey or detect predators. If noise persists in an area, animals could leave their habitat and avoid it permanently. Avoidance behavior by animals requires the expenditure of excess energy needed for survival (e.g., finding new food sources, water sources, breeding and nesting habitats) (Ellis et al. 1991). The federally threatened piping plover might be present in the project area from July to May but is not known to nest in the project area. The federally threatened red knot might be present in the project area but only during spring or fall migration.

To minimize impacts on nesting protected birds, construction should occur outside of the nesting season (October 1 through May 15 for MBTA species and March 1 to August 31 for shorebirds). If it is not possible to avoid construction during the MBTA or shorebird nesting season, a USFWS-permitted/qualified biologist may be required by the Eglin AFB NRO to conduct a species survey. If the species were present, a USFWS-permitted/qualified biologist would survey for nests prior to construction, in accordance with Eglin AFB NRO guidance. Occupied bird nests should not be disturbed. If an occupied/active nest is identified, a 300-foot, no-activity buffer would be established around the nest until the young have fledged. Signs that read "Keep Out-Endangered Species" or "Shorebird Nesting Area" or similar would be posted in accordance with Eglin AFB NRO to prevent vehicles from affecting wintering piping plovers and nesting shorebirds. Any required surveys, monitoring, and staging and storage locations would be coordinated with FDOT, Okaloosa County, and Eglin AFB NRO prior to construction.

No Florida perforate cladonia was observed during a lichen survey within the Eglin AFB portion of the project area (see **Figures 2-2** through **2-5**) conducted on June 4, 2019. Based on its primarily developed nature and low sand dunes in the few less-developed areas on its eastern extent, no Florida perforate cladonia are anticipated within the Okaloosa Island portion of the project area; however, a survey for Florida perforate cladonia would be conducted of the less-developed areas within the Okaloosa Island portion of the project area prior to construction, if required.

Long-term, direct, negligible effects on protected species would occur from operation of the pathway. The pathway would increase human activity (e.g., walking, jogging, bicycling, and maintenance and repair) within the project area, which could result in species avoiding the area and moving to less populated habitat elsewhere. To minimize long-term impacts on nesting colonies, a 300-foot no-activity buffer would be established around the colony until the young

have fledged to avoid or minimize disturbance from pathway use. Signs that read “Keep Out-Endangered Species” or “Shorebird Nesting Area” or similar would be posted in accordance with Eglin AFB NRO to prevent vehicles from affecting nesting shorebirds. If the colony is established within 300 feet of the pathway, where a buffer would be ineffective, Eglin AFB and Okaloosa County must consider/discuss a temporary closure of the pathway until nestlings have fledged. Effects would be negligible because individuals in this area are habituated to human activity, especially along the roadway, and would continue normal behavior in lieu of pathway operation.

Okaloosa County would implement applicable conservation measures from the *Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2* (USFWS 2019c) and management actions (see **Section 4.3**) to avoid impacts on federally listed and candidate terrestrial species. Based on this analysis, implementation of the North Alternative would have no effect on federally listed and candidate terrestrial species under Sections 7 and 10 of the ESA.

Marine Biological Resources

No impacts on marine biological resources (i.e., EFH, protected marine species, nearshore environments, and intertidal zones) are expected under the North Alternative. The North Alternative project area ranges from 40 feet to 1,800 feet from the shoreline (see **Figures 2-2 through 2-5**). All of the North Alternative is at least 200 feet from the shoreline except for an approximately 400-foot area along a seawall that is as close at 40 feet from the shoreline within the Eglin AFB portion of the North Alternative. The land along the seawall is fairly level and protected from erosion and stormwater runoff via the seawall.

Impacts on ocean-bound protected marine species and the Gulf sturgeon designated critical habitat could occur from release of stormwater, sediment, or hazardous materials into oceanic and bay waters. Construction and operation of the pathway would disturb soils and have the potential to result in erosion and stormwater runoff to ocean and bay waters and affect the quality of the marine environment. Erosion and sedimentation flow into marine environments would be avoided by implementing BMPs and other management actions (see **Section 4.3**). Employment of stormwater management actions and a Stormwater Pollution Prevention Plan (SWPPP) (see **Section 4.3.2**) would largely eliminate stormwater runoff during construction. Okaloosa County also would implement BMPs for spill prevention and control during construction, such as following the Eglin AFB or a project-specific Spill Prevention, Control, and Countermeasure (SPCC) Plan. By implementing these BMPs, the release of stormwater, sediment, and hazardous materials from the project area into the marine environment during construction and maintenance and repair would be avoided. Consequently, no impacts on ocean-bound protected marine species or the Gulf sturgeon designated critical habitat are expected.

Impacts on nesting sea turtle species could occur from noise and lighting associated with construction and maintenance and repair. However, these activities would occur within largely disturbed land adjacent to U.S. 98, and not within sea turtle nesting habitat. Furthermore, no nighttime construction or maintenance would occur during sea turtle nesting season (May 1

through October 31) and sea turtle-friendly lighting requirements would be followed. Other BMPs and management actions (see **Section 4.3**) would be implemented to avoid impacts on nesting sea turtles and their habitat.

Okaloosa County would implement applicable conservation measures from the *Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2* (USFWS 2019c) and management actions (see **Section 4.3**) to avoid impacts on federally listed marine species. Based on this analysis, implementation of the North Alternative would have no effect on federally listed or candidate marine species under Sections 7 and 10 of the ESA.

3.2.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Terrestrial Biological Resources

Vegetation. Short- and long-term, negligible to minor, adverse, direct impacts on native vegetation would be expected from construction and operation of the pathway for the South Alternative. Approximately 16 acres of impervious surfaces would be added to the project area. Construction of the South Alternative would require the removal of several trees and would affect up to 3.47 acres of Eglin AFB protective buffers and areas. To avoid and minimize long-term impacts on Eglin AFB protective buffers and areas, approximately 7,700 linear feet of environmental fencing would be installed throughout the project area to keep pathway users out of these areas. Because the project area is within developed or previously disturbed areas and contains similar vegetation, vegetation would reestablish after construction and maintenance and repair, and similar BMPs (e.g., revegetation with native plants, construction equipment cleaning, and nonnative and invasive species protection protocols) and management actions (see **Section 4.3**) would be enacted, the short- and long-term impacts of the South Alternative would be similar to those described for the North Alternative.

Wildlife. Short- and long-term, negligible to minor, adverse, direct impacts on wildlife would be expected from construction and operation of the pathway for the South Alternative. Based on similar habitats and species, similar project actions, and implementation of similar BMPs and management actions (see **Section 4.3**), the impacts would be similar to those described for the North Alternative.

Protected Species. Short- and long-term, negligible to minor, adverse, direct impacts on protected terrestrial species (federal, state, and MBTA) are expected under the South Alternative. Based on similar habitats and species, similar project actions, and implementation of similar BMPs and management actions (see **Section 4.3**), impacts would be similar to those described for the North Alternative. To avoid and minimize long-term impacts on Eglin AFB protective buffers and areas, approximately 7,700 linear feet of environmental fencing would be installed throughout the project area to keep pathway users out of these areas (protected species and habitat areas).

No Florida perforate cladonia was observed during a lichen survey within the Eglin AFB portion of the project area (see **Figures 2-2** through **2-5**) conducted on June 4, 2019. Based on its

primarily developed nature and low sand dunes in the few less-developed areas on its eastern extent, no Florida perforate cladonia are anticipated within the Okaloosa Island portion of the project area; however, a survey for Florida perforate cladonia would be conducted of the less-developed areas within the Okaloosa Island portion of the project area prior to construction, if required.

Okaloosa County would implement applicable conservation measures from the *Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2* (USFWS 2019c) and management actions (see **Section 4.3**) to avoid impacts on federally listed and candidate terrestrial species. Based on this analysis, implementation of the South Alternative would have no effect on federally listed and candidate terrestrial species under Sections 7 and 10 of the ESA.

Marine Biological Resources

No impacts on marine biological resources (i.e., EFH, protected marine species, nearshore environments, and intertidal zones) are expected under the South Alternative. Based on similar habitats and species, similar project actions, and implementation of similar BMPs and management actions (see **Section 4.3**), impacts would be similar to those described for the North Alternative.

Okaloosa County would implement applicable conservation measures from the *Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2* (USFWS 2019c) and management actions (see **Section 4.3**) to avoid impacts on federally listed marine species. Based on this analysis, implementation of the South Alternative would have no effect on federally listed or candidate marine species under Sections 7 and 10 of the ESA.

3.2.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pathway would not be constructed, and no impacts on terrestrial or marine biological resources would occur.

3.3 Cultural Resources

3.3.1 Definition of the Resource

Cultural resources are historic sites, buildings, structures, objects, or districts considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural or engineering resources, and traditional resources.

Several federal laws and regulations govern protection of cultural resources including the NHPA (1966), the Archeological and Historic Preservation Act (1974), the American Indian Religious Freedom Act (1978), the Archaeological Resources Protection Act (1979), and the Native American Graves Protection and Repatriation Act (1990). In addition, Eglin AFB is required to comply with USAF regulations and instructions including the Eglin AFB *Integrated Cultural Resources Management Plan (ICRMP)*; Air Force Manual 32-7003, *Environmental Conservation*; and AFI 90-2002, *Air Force Interactions with Federally-Recognized Tribes*.

The NHPA defines historic properties as buildings, structures, sites, districts, or objects listed in or eligible for listing in the National Register of Historic Places (NRHP). Historic properties are generally 50 years of age or older, historically significant, and retain sufficient integrity to convey their historic significance. Archaeological resources comprise areas where human activity has measurably altered the earth or where deposits of physical remains are found (e.g., projectile points and bottles) but standing structures do not remain. Architectural resources include standing buildings, structures (such as bridges and dams), landscapes, and districts composed of one or more of those resource types. Generally, architectural resources must be more than 50 years old to warrant consideration for the NRHP. Resources constructed more recently may meet the criteria for designation if they are of exceptional importance or have the potential to gain significance in the future. Resources of traditional, religious, or cultural significance can include archaeological resources, sacred sites, structures, districts, prominent topographic features, habitat, plants, animals, or minerals considered essential for the preservation of traditional culture (NPS 1997).

As noted in **Section 1.5.1**, Eglin AFB conducts government-to-government consultation with five federally recognized tribes with a historic or cultural affiliation with Eglin AFB lands: the Miccosukee Tribe of Indians of Florida, Seminole Tribe of Florida, Poarch Band of Creek Indians of Alabama, Muscogee (Creek) Nation of Oklahoma, and Thloptholocco Tribal Town of the Creek (Muscogee) Tribe. The installation currently has arrangements with these tribes whereby the tribes do not wish to be contacted for work in areas that have already been surveyed and have no sites significant to them (Eglin AFB 2018b). Okaloosa County is not required to conduct tribal consultation on the portion of the project area that is outside of Eglin AFB.

This section describes the nature and extent of impacts resulting from the Proposed Action, including the North and South Alternatives, and the No Action Alternative on cultural resources. Under Section 106 of the NHPA, federal agencies must consider the effect of their undertakings on historic properties and afford the Advisory Council on Historic Preservation a reasonable opportunity to comment. Under this process, the federal agency evaluates the NRHP eligibility of resources within the proposed undertaking's area of potential effect (APE) and assesses the possible effects of the proposed undertaking on historic properties in consultation with the SHPO and other parties. The APE is defined as the geographic area(s) "within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist."

3.3.2 Affected Environment

The APE for this undertaking was established to consider direct effects of construction and operation as well as visual, audible, and atmospheric effects on historic properties. The APE is defined as the FDOT right-of-way (Okaloosa Island) and easement (Eglin AFB) of U.S. 98 from Pier Road on the west to the Marler Bridge on the east, a distance of approximately 4.8 miles. The APE is identical for the North and South Alternatives. A cultural resources assessment survey of the APE was completed in September 2019 (Nowak et al. 2019). The survey included a pedestrian (visual surface) survey and limited archaeological subsurface testing within the undertaking's APE.

The cultural resources assessment survey identified three previously recorded archaeological sites within or near the APE. One site (8OK0031) partially overlaps the APE, while two sites (8OK00406 and 8OK02239) are outside of but within 330 feet of the APE. Site 8OK0031 is on Okaloosa Island just west of Eglin AFB and sites 8OK00406 and 8OK02239 are on Eglin AFB. Sites 8OK00031 and 8OK00406 have not been evaluated for NRHP eligibility. Site 8OK02239 was determined not eligible for listing in the NRHP by the SHPO in 2008; however, based on separate testing, Eglin AFB recommended the site as eligible (Nowak et al. 2019).

Subsurface shovel testing during the cultural resources assessment survey was not conducted near 8OK00031 because of buried utility lines; however, a systematic surface inspection did not identify any cultural material. Four shovel tests were excavated near sites 8OK00406 and 8OK02239, and all were negative for cultural material. Sites 8OK00406 and 8OK02239 are both low-density artifact scatters (Nowak et al. 2019).

Background research and map review during the cultural resources assessment survey indicated that no built resources were located within the APE. As such, no architectural resources are present within the APE. The cultural resources assessment survey concluded that the Proposed Action would have no effect on cultural resources listed or eligible for listing in the NRHP and recommended no additional work within the APE (Nowak et al. 2019). On March 31, 2020, the Florida SHPO concurred with the survey results and recommendations, and found the cultural resources assessment survey to be complete and sufficient (see **Appendix A**).

3.3.3 Environmental Consequences

Under Section 106 of the NHPA, an adverse effect is found when an undertaking may alter, directly or indirectly, any of the characteristics of a historic property that qualify it for NRHP eligibility in a manner that would diminish the property's historic integrity.

3.3.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND

Construction and operation of the pathway on the Okaloosa Island portion of the North Alternative project area would result in no historic properties affected under Section 106 of the NHPA and no impact on cultural resources. Previously identified Site 8OK0031 is within the APE on Okaloosa Island. Because no evidence of Site 8OK0031 was found during the archaeological survey, no determination of NRHP eligibility was made for the site. The APE does not contain any NRHP-listed or NRHP-eligible archaeological resources; therefore, no impacts on archaeological resources would occur. No architectural resources are present within the APE; therefore, no impacts on architectural resources would occur.

The APE is in an area previously surveyed and with no previously identified sites significant to the five federally recognized tribes that Eglin AFB consults with, and Okaloosa County is not required to conduct tribal consultation on the portion of the project area that is outside of Eglin AFB; therefore, consultation with these tribes is unnecessary.

Any change in project plans would be coordinated with the Eglin AFB Cultural Resources Office and the Florida SHPO, as appropriate. In addition, should archaeological deposits be

discovered during construction of the pathway, both on and off Eglin AFB property, work would be immediately halted and Eglin AFB would follow the provisions for unanticipated discoveries specified in the Eglin AFB ICRMP (Eglin AFB 2018b).

EGLIN AFB

Impacts on cultural resources from the construction and operation of the pathway on the Eglin AFB portion of the North Alternative project area would be identical to those of the Okaloosa Island portion of the North Alternative project area. No historic properties would be affected under Section 106 of the NHPA, and no impact on cultural resources would occur. Sites 8OK00406 and 8OK02239 are on Eglin AFB, within 330 feet of the APE, and to the north of U.S. 98. No impacts on these sites are expected given their distance from the APE. No architectural resources are present within the APE; therefore, no impacts on architectural resources would occur.

3.3.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND

Impacts on cultural resources from construction and operation of the pathway under the South Alternative on Okaloosa Island would be identical to those from the North Alternative. No archaeological sites are within or proximate to the APE and to the south of U.S. 98. No historic properties would be affected under Section 106 of the NHPA, and the South Alternative would have no impact on cultural resources. Identical actions as those listed in **Section 3.3.3.1** would be taken should project plans change or archaeological deposits be discovered.

EGLIN AFB

Impacts on cultural resources from construction and operation of the pathway under the South Alternative on Eglin AFB would be identical to those from the North Alternative. No archaeological sites are within or proximate to the APE and to the south of U.S. 98. No historic properties would be affected under Section 106 of the NHPA, and the South Alternative would have no impact on cultural resources.

3.3.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, a pathway along U.S. 98 from Pier Road to Marler Bridge would not be constructed and operated. Therefore, no impacts on cultural resources would occur under the No Action Alternative.

3.4 Geological Resources

3.4.1 Definition of the Resource

Geological resources consist of Earth's surface and subsurface materials. Within a given physiographic province, these resources typically are described in terms of geology, topography and physiography, soils, farmland, and, where applicable, geologic hazards.

Geology. Geology is the study of the Earth's composition and provides information on the structure and configuration of surface and subsurface features. Such information derives from

field analysis based on observations of the surface and borings to identify subsurface composition and unique geological features.

Topography and Physiography. Topography and physiography pertain to the general shape and arrangement of a land surface, including its height and the position of its natural features and human-made alterations of landforms. Dunes are common coastal topographic features and considered a natural barrier to the destructive forces of wind and waves. Dunes absorb impacts of storm surges and high waves, which can prevent or delay flooding of inland areas and damage of inland structures.

Soils. Soils are the unconsolidated materials overlying bedrock or other parent material and are typically described in terms of their complex type, slope, and physical characteristics. Soil is produced by forces of weathering and other natural physical and chemical processes acting on the parent material. The main processes of soil formation are accumulation of organic matter, leaching of calcium carbonate, reduction of iron, and the reduction of silicate clay minerals (NRCS 1995). Differences among soil types in terms of their structure, elasticity, strength, shrink-swell potential, and erosion potential affect their abilities to support certain applications or uses. Erosion is a component of soil formation. Shoreline erosion is a natural process that occurs along the coast and is a gradual removal of soils from the shoreline.

Farmland. Farmland is protected under the Farmland Protection Policy Act of 1981 (7 USC § 4201 et seq.), which aims to minimize the effect of federal programs on the unnecessary and irreversible conversion of farmland to nonagricultural uses. Farmland includes prime and unique farmland and farmland of statewide or local importance.

Geologic Hazards. Geologic hazards are defined as natural geologic events that can endanger human lives and threaten property. Examples of common geologic hazards in Florida include karst features (i.e., sinkholes), flooding, and earthquakes.

3.4.2 Affected Environment

Geology. Typical landforms found in the southwestern panhandle of Florida include barrier islands such as Santa Rosa Island, lagoons such as Santa Rosa Sound, estuaries, such as the Choctawhatchee Bay, coastal ridges, sand dune ridges, relict spits and bars, and valleys. The geology of Santa Rosa Island is characterized by marine terraces, formed when the sea level was higher than at present, and most features are parallel to the coast (NRCS 1995).

Topography and Physiography. Santa Rosa Island is a barrier island of the southwestern Florida panhandle. The topography is relatively flat and the project area sits slightly above mean sea level. The project area is within the southern portion of the Gulf Coastal Lowland physiographic province, adjacent to the Gulf of Mexico and a subdivision of the Coastal Lowlands. Beaches of the Gulf Coast vary in width and are relatively flat with gentle slopes.

The coastal dunes of Santa Rosa Island are typically 3 to 5 feet and exist in a high-energy environment caused by regular wind and wave activity (NRCS 1995). Sands from dunes are periodically eroded and redeposited during times of high- and low-energy wave/wind action. Gradual trapping of wind-blown sands by the vegetation sometimes allows these dunes to build

up several feet in height. Although coastal dunes are present near the project area south of U.S. 98, the dune line does not span the entire length of the project area.

Soils. The soil types, classification, and characteristics within the project area are listed in **Table 3-5**. The dominant soil type within the project area is the Newhan-Corolla complex, characterized by a sandy texture, rapid permeability, low water capacity, low organic matter content, and low natural fertility. This type of soil typically makes up the dune line along the coast. Depth to the water table can range from 18 to 72 inches and soil color can range from gray to white. Additional soil types within the project area include Duckston sand, which is characterized by brownish-gray, poorly drained, sandy soil and is typically found in tidal marshes that border the Choctawhatchee Bay and the Santa Rosa Sound; and Dorovan muck, which is characterized by nearly level, dark grayish brown/black, mucky peat found in swamps and on the floodplains. Beaches made up of very rapidly permeable white sand are also present and vary from unsorted, mixed grain sizes and shells at the surf zone, to finely graded and well-sorted grains on dunes (NRCS 1995, NRCS 2019).

Table 3-5. Okaloosa Island Soil Characteristics

Soil Type	Soil Depth (inches)	Texture	Slope (%)	pH	Organic Matter (%)	Permeability (inches/hour)
Beaches	0-60	Sand, fine sand	0-5	NA	<1	<6
Newhan-Corolla Complex	0-80	Sand, fine sand	0-5	3.6-7.8	<0.5	<20
Rutledge Sand	0-80	Sand	<1	3.6-7.5	3-9	6.0-2.0
Duckston Sand	0-50	Sand	<1	6.5	0.5-3	<20
Dorovan Muck	0-80	Muck	<2	NA	20-80	0.6-2.0

Source: NRCS 1995

The developed portion of the project area is composed primarily of urban land where, generally, the natural soil cannot be observed. Newhan-Corolla complex soils and the Beaches soil type are also present (NRCS 2019).

Farmland. The soils within the project area are not prime farmland, unique farmland, or farmland of statewide or local importance (NRCS 2020).

Geologic Hazards. With respect to geologic hazards, no faults or fault zones have been discovered near Santa Rosa Island. The U.S. Geological Survey identified the Florida panhandle as having the lowest hazard from earthquakes and, as a result, the project area is unlikely to undergo a tectonic event (USGS 2014). Sinkholes are uncommon in the panhandle and Okaloosa County because of the substantial depth at which carbonate sediments occur and the thick layer of cohesive sediments that overlay them (FGS 2004). No karst features have been identified near the project area. Additionally, no unstable areas have been identified in the region; therefore, geologic hazards are not discussed further in this EA.

3.4.3 Environmental Consequences

3.4.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Geology. No impacts on geology are anticipated because no geologic formations or stratigraphy would be altered. Although removal of soils and sand overburden would be performed during construction, construction would not require deep drilling or extensive earth moving activities, and removal of superficial materials would not affect geologic resources.

Topography and Physiography. Under the North Alternative, all project activities would take place north of U.S. 98, which is relatively flat. No dunes or other topographic features are north of U.S. 98 near the project area; therefore, no impacts on topography and physiography would occur under the North Alternative.

Soils. Short-term, minor, adverse impacts on soils would be expected under the North Alternative. Impacts would primarily include soil compaction, soil disturbance, modification of soil structure, and an increased potential for shoreline erosion because of construction. Implementation of environmental protection measures, such as the management actions listed in **Section 4.3.4**, would minimize impacts on soil. Following completion of the pathway, Okaloosa County would repair erosion issues and repair/regrade areas on both sides of the pathway back to the original design. Long-term, minor, beneficial impacts would occur because operation of the pathway would involve ground and shoreline stabilization measures and maintenance to reduce sand buildup on the pathway.

3.4.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Geology. Construction of the pathway would not require deep drilling or extensive earth moving activities, and removal of superficial materials would not alter geologic resources or stratigraphy; therefore, no impacts on geology would be anticipated under the South Alternative.

Topography and Physiography. Short-term, negligible, adverse impacts on topography could occur under the South Alternative and would be dependent on the level of alteration to the dune line. Although there is a series of dunes south of U.S. 98, the dune line does not extend throughout the entire project area. In areas where dunes are present, the 40-foot-wide project area may require some cutting or grading of the dune line; however, management actions listed in **Section 4.3** and applicable BMPs would be implemented to avoid erosion and protect inland areas. The dune line within the project area would be restored as necessary following the completion of the pathway. Long-term, minor, adverse impacts on topography could occur within the project area if the dune line were permanently altered; however, dunes would be re-graded as necessary and the integrity would be maintained.

Soils. Short-term, minor, adverse impacts on soils would be expected under the South Alternative and would be identical to those described for the North Alternative. Following the completion of the pathway and upgraded parking areas, Okaloosa County would repair erosion issues and repair/regrade areas on both sides of the pathway and along the upgraded parking

areas back to the original design. Long-term, minor, beneficial impacts would occur because operation of the pathway would involve ground and shoreline stabilization measures and maintenance to reduce sand buildup on the pathway and upgraded parking areas.

3.4.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, construction and operation of the pathway and related infrastructure would not occur; therefore, no impacts on geological resources would be expected.

3.5 Hazardous Materials and Wastes

3.5.1 Definition of the Resource

The terms “hazardous materials” and “hazardous waste” refer to substances defined as hazardous by the Comprehensive Environmental Response, Compensation, and Liability Act and the Solid Waste Disposal Act, as amended by the Resources Conservation and Recovery Act (RCRA). In general, hazardous material refers to any item or agent (biological, chemical, or physical) that has the potential to cause harm to humans, animals, or the environment, either by itself or through interaction with other factors. A complete list of federally recognized hazardous substances as well as their reportable quantities is provided in 40 CFR § 302.4. Many substances not on this list could be considered hazardous according to their ignitability, corrosivity, reactivity, or toxicity as defined by 40 CFR §§ 261.20–24.

Hazardous wastes that are regulated under RCRA are any solid, liquid, contained gaseous, or semisolid waste, or any combination of wastes that either exhibit one or more of the hazardous characteristics of ignitability, corrosivity, toxicity, or reactivity, or are listed as a hazardous waste under 40 CFR § 261. Issues associated with hazardous materials and wastes typically center around waste streams; storage tanks; and the storage, transport, use, and disposal of pesticides, fuels, lubricants, and other industrial substances. When such materials are used or not disposed of properly, they can threaten the health and well-being of wildlife species, habitats, soils and water systems, and humans.

The Environmental Restoration Program (ERP) is a USAF program to identify, characterize, and remediate environmental contamination from past activities at USAF installations. The Installation Restoration Program (IRP) and Military Munitions Response Program (MMRP) are components of the ERP. The IRP requires each DoD installation to identify, investigate, and clean up hazardous waste disposal or release sites. The MMRP addresses non-operational rangelands that are suspected or known to contain munitions and explosives of concern, which includes unexploded ordnance, discarded military munitions, and munitions constituents. Eglin AFB has a third category of sites known as Area of Concern (AOC)/ Point of Interest (POI) sites, which are potential areas of contamination investigated for inclusion in the IRP or MMRP.

3.5.2 Affected Environment

OKALOOSA ISLAND

Hazardous Materials, Petroleum Products, and Hazardous Waste Management. No hazardous materials, petroleum products, or hazardous wastes are stored, used, or generated within the Okaloosa Island portion of the project area. Hazardous substances within the State of Florida are managed through the Florida Right-to-Know Act, Florida Statutes Title 17, Chapter 252, and several portions of FAC Chapter 62. The state of Florida regulates hazardous wastes via FAC Chapter 62-730.

Pesticides. Pesticide use within the state of Florida is managed through the Florida Pesticide Law, Florida Statutes Title 32, Chapter 487, which regulates the distribution, sale, and use of pesticides. Pesticides distributed, sold, or offered for sale in the state of Florida must be registered with the Department of Agriculture and Consumer Services. Pest management personnel who apply or supervise the application of pesticides in Florida must be properly trained and certified through the Florida Department of Agriculture and Consumer Services.

Contamination Sites. Contamination sites within the State of Florida are addressed through the FDEP Waste Cleanup Program. The only contamination site near the North Alternative is associated with Tom Thumb Food Store #23 at 1334 Miracle Strip Parkway SE in Fort Walton Beach (see **Figure 2-2**). This site is approximately 50 feet north of the North Alternative. Three underground storage tanks (USTs) for leaded and unleaded gasoline and diesel were installed at this location in 1980. Stained soil that emitted a gasoline odor was noted at the fill pipes in 1987, so four compliance wells were installed. In 1989, a contamination assessment of the site was conducted that included a visual inspection of the site, an organic vapor scan, and groundwater sampling of the four compliance wells. No organic vapors were detected in the compliance wells. Benzene, lead, and total recoverable petroleum hydrocarbons were detected in the groundwater samples; however, the concentrations were below the Florida Secondary Drinking Water Standards. Based on the contamination assessment, the site was issued a Site Rehabilitation Completion Order (i.e., no further action [NFA]) on October 6, 1989 (FDER 1989, FDEP 2003, FDEP 2019b, FDEP 2020).

In 2009, the three USTs were removed and replaced with two 12,000-gallon USTs (unleaded gasoline and diesel) (FDEP 2010). During the UST removal, a closure assessment was conducted that included soil samples. Benzene, total xylenes, and 1-methylnaphthalene were detected above state soil Cleanup Target Levels (CTLs) in the soil, and a groundwater sample was above state groundwater CTLs for benzene, toluene, ethylbenzene, total xylenes, naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene. Due to remaining contamination, the Site Rehabilitation Completion Order (NFA) was rescinded on May 13, 2010 (FDEP 2020).

In 2019, 15 soil borings were collected and 6 shallow monitoring wells were installed and sampled. Organic vapors were detected in soil boring 3, and groundwater contamination (1,2,4-trimethylbenzene) was detected at monitoring well 2 above its groundwater CTL and its Natural Attenuation Default Source Concentration. Depth to groundwater is approximately 5 feet below land surface, and shallow groundwater flow direction is in a north-northwesterly direction. The 2020 Site Assessment Report recommended limited remedial action to address the contamination near monitoring well 2 (FDEP 2020).

EGLIN AFB

Hazardous Materials, Petroleum Products, and Hazardous Waste Management. No hazardous materials, petroleum products, or hazardous wastes are stored, used, or generated within the Eglin AFB portion of the project area.

Pesticides. In accordance with DoD policy on pest management, integrated pest management principles should be used to help minimize the use of pesticides. The objective of integrated pest management is to use ecologically, economically, and socially sound strategies to control or keep pests at tolerable levels. All pesticides, including herbicides, used at Eglin AFB must be on the installation's list of approved pesticides. All USAF or contractor pest management personnel who apply or supervise the application of pesticides at Eglin AFB must comply with the installation's Pest Management Plan and be properly trained and certified.

Contamination Sites. Eglin AFB manages contamination sites through the ERP, which conforms to the Comprehensive Environmental Response, Compensation, and Liability Act and RCRA requirements. No active or closed IRP and AOC/POI sites are within the project area, and no active IRP and AOC/POI sites are adjacent to the project area. There is one closed IRP site, SS-74, and one closed AOC/POI site, AOC-42, adjacent to the project area.

SS-74, A-3 Officer's Beach Club, is south of the central portion of the project area (see **Figure 2-4**). Following Hurricane Opal on October 4, 1995, a site survey was conducted at IRP site SS-74 to investigate whether any damage occurred to fuel storage tanks during the hurricane. During the investigation, it was determined that the piping from a 1,500-gallon aboveground storage tank (AST) was sheared and the AST was tilted within the bermed area. Piping was also sheared from a 750-gallon AST and the AST was moved approximately 300 feet from its stand, resting near the 1,500-gallon AST. Approximately 750 gallons of diesel fuel were released. A contamination assessment was conducted and groundwater analytical results showed no exceedances of petroleum cleanup levels; therefore, the site was given NFA status on December 3, 1996. AOC-42, VORTAC Generator Spill Site, is north of the western portion of the project area (see **Figure 2-5**). AOC-42 is the location of an uncontrolled release of an unknown amount of fuel. The release was associated with a UST and emergency generator. The UST was removed in 1994 and it was determined that no contamination was present; therefore, the site was closed. There are no active or closed MMRP sites within or adjacent to the project area (Eglin AFB 2018c).

Although not part of Eglin AFB's ERP, in March 1993, contamination was discovered during the removal of a UST at USCG Station Destin, which is approximately 0.1 mile north of the North Alternative (see **Figure 2-5**). Few details are available on the nature of this contamination. The site was given NFA status in April 1995 (FDEP 2004).

3.5.3 Environmental Consequences

Impacts on hazardous materials and wastes would be considered significant if a proposed action would result in noncompliance with applicable federal or state regulations, or increase the amounts generated or procured beyond current Eglin AFB waste management procedures, permits, or capacities. Impacts on contaminated sites would be considered significant if a

proposed action disturbed or created contaminated sites resulting in negative effects on human health or the environment, or if a proposed action made it substantially more difficult or costly to remediate existing contaminated sites.

The impacts on hazardous materials and wastes are the same regardless of land ownership; therefore, the impacts for Okaloosa Island and Eglin AFB are described together.

3.5.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Hazardous Materials, Petroleum Products, and Hazardous Waste Management. Short- and long-term, negligible, adverse impacts on hazardous materials and waste management would occur from construction and operation of the pathway. Hazardous materials that could be used during construction and maintenance of the pathway include paints, welding gases, solvents, and sealants. Additionally, hydraulic fluids and petroleum products, such as diesel and gasoline, would be used in vehicles and equipment supporting construction and maintenance.

All hazardous materials used as well as hazardous wastes and used petroleum products generated during construction and maintenance of the pathway would be contained, stored, and managed appropriately (e.g., secondary containment, inspections, spill kits) in accordance with Eglin AFB Instruction 32-7086 (*Hazardous Materials Management*), the Eglin AFB *Hazardous Waste Management Plan* and SPCC Plan, and federal, state, and local regulations to minimize the potential for a release. All construction equipment would be maintained according to manufacturer's specifications and drip mats would be placed under parked equipment as needed. Implementation of these BMPs would reduce the potential for an accidental release of these materials.

Pesticides. Minimal pesticide use would occur during construction. Long-term, intermittent, negligible, adverse impacts would occur from the use of pesticides, to include herbicides, during maintenance of the pathway. All pesticides used would be on the Eglin AFB and FDEP list of approved pesticides. Labels and instructions would be followed during handling, mixing, and application. All personnel conducting treatment activities in the project area would be DoD- or state-certified pesticide applicators or qualified individuals under direct supervision of a certified applicator and would comply with the Eglin AFB *Integrated Pest Management Plan* and all federal, state, and local regulations. Applicators would dispose of or recycle pesticide containers and excess pesticides according to federal, state, and local regulations and label requirements and immediately clean up or contain any pesticide spill.

Contamination Sites. No impacts are expected to result from contamination sites during construction and operation of the pathway. Contamination associated with the Tom Thumb Food Store is approximately 50 feet north of the project area and groundwater is at a depth of 5 feet below ground surface and flows in a north-northwesterly direction (away from the project area). Construction of the pathway would be shallow (not encounter groundwater at 5 feet below ground surface) and would stay within the project area; therefore, the North Alternative is not expected to be impacted by the Tom Thumb Food Store contamination. The project area is not within or adjacent to active IRP or MMRP sites, and IRP site SS-74, AOC-42, and the UST

release at USCG Station Destin are not impediments to construction because they are closed and well outside the project area. Should unknown contamination be discovered or unearthed during ground-disturbing activities, the construction contractor would immediately stop work, contact appropriate Eglin AFB or FDEP personnel, and implement appropriate safety measures. Sampling and analysis would be conducted, as necessary, and commencement of construction would not continue until the concern is investigated and resolved. Any soils determined to be contaminated or hazardous would be managed or disposed of in accordance with applicable federal, state, and local laws and regulations.

3.5.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Impacts on hazardous materials and wastes for the South Alternative would be the same as those described for the North Alternative. The only notable difference from the North Alternative is that the South Alternative is not adjacent to the Tom Thumb Food Store, where a release occurred in 1986. Therefore, the South Alternative has less potential encountering unexpected contamination.

3.5.3.3 NO ACTION ALTERNATIVE

Existing conditions would remain the same as described in **Section 3.5.2**. Therefore, no effects on hazardous materials and wastes would occur.

3.6 Infrastructure and Transportation

3.6.1 Definition of the Resource

Infrastructure consists of the systems and physical structures that enable a population in a specified area to function. Infrastructure is wholly man-made with a high correlation between the type and extent of infrastructure and the degree of which an area is characterized as “urban” or developed. The availability of infrastructure and its capacity to support growth are generally regarded as essential to the economic growth of an area. The infrastructure components discussed in this EA are utilities such as electricity, natural gas, potable water, sanitary sewer, stormwater management, communications, and solid waste management.

Transportation refers to roadway, rail, and air systems and the movement of vehicles on these transportation systems. Transportation components discussed in this EA include vehicle, bicycle, and pedestrian facilities.

3.6.2 Affected Environment

Infrastructure. The extent and condition of various utilities within and adjacent to the project area are provided in the following subsections.

Electricity. The electrical distribution system within the project area consists of aboveground transmission lines with wood poles and pole mounted transformers. The overhead transmission lines within Okaloosa Island are north and south of U.S. 98, while the overhead transmission

lines within Eglin AFB are south of U.S. 98. Electricity within the project area is supplied by Gulf Power (Gulf Power 2018).

Natural Gas. Okaloosa Gas District is the primary natural gas provider in Okaloosa County. Its service area includes the project area. An underground natural gas service line and aboveground natural gas valves are within the project area on the north side of U.S. 98.

Potable Water. Potable water systems in Florida are regulated by FDEP, which, along with the Florida Safe Drinking Water Act, ensures compliance with standards identified in the Safe Drinking Water Act (42 USC §§ 201, 300 et seq.) and the National Primary Drinking Water Regulations. Potable water is supplied to the project area by Okaloosa County Water and Sewer. All potable water supplied by Okaloosa County is sourced from groundwater drawn from the Floridan Aquifer and is treated using chlorine at each well (Okaloosa County 2019a). Potable water service lines are located throughout the project area. USCG Station Destin sources its potable water from a well near the project area (USEPA 2017).

Sanitary Sewer. The sanitary sewer service within Santa Rosa Island is operated and maintained by Okaloosa County Water and Sewer (Okaloosa County 1998). There is a sanitary sewer service line and pump station north of U.S. 98 (Eglin AFB 2011).

Stormwater Management. The Okaloosa Master Stormwater Management Plan (Okaloosa County 2003) provides a framework for addressing stormwater processes in Okaloosa County. The county's Stormwater Division is responsible for the operation and maintenance of all stormwater systems within the county's jurisdiction, which includes unincorporated areas. The stormwater infrastructure within the Okaloosa Island portion of the project area consists of dispersed drainage ditches and retention basins north and south of U.S. 98, and intermittent drain grates direct stormwater to retention and infiltration basins. There are no stormwater systems on Eglin AFB within the project area; however, infiltration of surface stormwater is promoted by sandy soils.

Communications. There is an underground telecommunications fiber line on the south side of U.S. 98 within the project area.

Solid Waste Management. Solid waste within the unincorporated area of Okaloosa County is managed by the Okaloosa County Public Works Department, which maintains a franchise agreement with Waste Management for household trash, recyclables, and yard waste at curbside disposal (Okaloosa County 2015a). Okaloosa County also is responsible for removing trash and pet waste from existing trashcans at public beach access points throughout Santa Rosa Island, including at the Airman Beach, Matterhorn Beach, and Princess Beach Eglin AFB-designated beach access point parking areas and associated beach areas. It is the responsibility of FDOT to clear the roadway of any heavy debris along U.S. 98 in the event of a natural disaster (Okaloosa County 2013).

The landfills within Okaloosa County are the Baker and Wright landfills, which are permitted to accept yard waste and maintain FDEP permits to accept debris from natural disasters. All other solid waste within Okaloosa County is transferred to Waste Management's Springhill Landfill in

Campbellton, Jackson County, Florida. The designated recycling facility for Okaloosa County is the Emerald Coast Utility Authority's Material Recovery Facility at Escambia County's Perdido Landfill in Cantonment, Florida (Okaloosa County 2017).

Transportation.

Roadways. U.S. 98 is a primary east-west arterial road that runs 671 miles from the Alabama-Florida state line to southern Florida and is the longest U.S. route in Florida. The portion of U.S. 98 within the project area is a four-lane roadway with a grass median that separates the westbound lanes from the eastbound lanes. The speed limit for U.S. 98 along the project area ranges from 35 to 55 mph. Gabion mats and sheet piles are located along U.S. 98 on Santa Rosa Island to protect it during storms. FDOT is responsible for maintaining U.S. 98 and roadway safety conditions within the U.S. 98 right-of-way (Okaloosa Island) and easement (Eglin AFB).

Two telemetered traffic monitoring sites exist within the project area. One is at mile marker 15.4, which is approximately 3.3 miles east of Brooks Bridge, and the other is just west of Marler Bridge. In 2018, the two-way annual average daily traffic measurement at these sites were 42,462 vehicles and 45,000 vehicles (very similar), and the one-way annual average daily traffic measurements also were almost evenly split between westbound and eastbound traffic (FDOT 2019e, FDOT 2019f).

Bicycle Facilities. There are no bicycle facilities within the project area. Bicycle facilities along the project area include an intermittently marked bicycle lane on the eastbound side of U.S. 98 from Pier Road to the elevated pedestrian walkway above U.S. 98 (approximately 0.3 mile), an intermittently marked bicycle lane on the westbound side of U.S. 98 between Pier Road and the central portion of the project area (approximately 2.8 miles), and paved shoulders on both sides of U.S. 98 where there are no bicycle lanes. The bicycle lanes and paved shoulders offer cyclists little to no protection from vehicle traffic.

Pedestrian Facilities. Pedestrian facilities within and adjacent to the project area include an approximately 0.1-mile-long sidewalk along the north side of U.S. 98 (0.3 miles east of Pier Road) and an approximately 0.6-mile-long sidewalk along the south side of U.S. 98 (from Pier Road to Okaloosa County Tourist Development Council Visitor's Welcome Center [Eglin AFB property line]). The sidewalks are narrow, cross several driveways, and offer little to no protection from vehicle traffic. The only signalized crosswalk within the project area is a four-way crosswalk at the intersection of U.S. 98 and Pier Road. Additionally, there is a pedestrian overpass approximately 0.3 mile east of Pier Road where pedestrians can cross U.S. 98.

Multi-Use Pathways. There are no multi-use pathways within the project area. The project area is a gap in the 263-mile Great Northwest Coastal Trail Corridor, which is a FGTS Land Trail Priority. Therefore, FDEP Office of Greenways and Trails has identified the project area as a location that should have a multi-use trail to support the FGTS. Community connectivity pathways adjacent to the project area include: 1) a pedestrian walkway on the eastbound (south) side of Marler Bridge that connects to a sidewalk along U.S. 98 in Destin, and 2) the

proposed replacement for Brooks Bridge, which includes a multi-use pathway in each direction between Okaloosa Island and Fort Walton Beach.

Parking. There are no parking lots within the North Alternative project area. The South Alternative project area includes three Eglin AFB-designated beach access points with parking areas (i.e., Airman Beach, Matterhorn Beach, and Princess Beach). The three Eglin AFB-designated beach access point parking areas within the South Alternative project area are open sandy areas along the south side of U.S. 98. Access to the Eglin AFB-designated beach access point parking areas requires an Eglin AFB Beach Permit, and permit compliance is monitored by Eglin AFB Security Forces. Use of the Eglin AFB-designated beach access point parking areas is heaviest during the summer and sometimes exceeds capacity. West Jetties Parking, which is closed, has poor ingress and egress (i.e., short turn lane into the parking area and small paved driveway area to transition from U.S. 98 to the gravel parking area), lacks an entrance sign, and is only accessible via the eastbound lanes of U.S. 98. Eglin AFB is responsible for the parking areas at the Eglin AFB-designated beach access points.

The North and South Alternative project areas are close to several non-permit public parking lots such as Emerald Coast Convention Center, Wayside [Boardwalk] Park, John Beasley Park, Little Marler Park, Ross Marler Park, and Veterans Park (see **Figures 2-2** through **2-5**).

Eglin AFB placed semi-permanent barriers along the north and south sides of U.S. 98 west of Marler Bridge to prevent vehicles from illegally parking along this portion of U.S. 98. Currently, Eglin AFB is considering a permanent FDOT-approved engineering solution for a long-term remedy.

3.6.3 Environmental Consequences

3.6.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Infrastructure. Under the North Alternative, relocation of utility poles with overhead electricity would be required, resulting in short-term, negligible, adverse impacts on the electrical system. The natural gas pipeline and valves, potable water lines, and sanitary sewer pipes and pump station would be marked prior to construction of the pathway and avoided or protected during construction; therefore, no impacts on this infrastructure are likely to occur. The pathway would cross and often be adjacent to the stormwater drainage ditches north of U.S. 98. Construction and operation of the pathway is not expected to increase the demand for utility services.

The North Alternative would add approximately 18 acres of impervious surface, which could result in long-term, minor, adverse impacts on stormwater management due to increased sheetflow, increased stormwater flow in the ditches, and reduced capacity of the soils to absorb or infiltrate stormwater. **Section 3.12.3.1** contains additional information on impacts from stormwater runoff.

Construction contractors would be responsible for the disposal of solid waste during construction. Okaloosa County would continue to remove trash and pet waste from the trashcans at the Airman Beach, Matterhorn Beach, and Princess Beach Eglin AFB-designated

beach access point parking areas and beach areas, as well as the trashcans at the Okaloosa County-managed parks and public parking lots near the project area. The amount of additional solid waste generated at these trashcans is expected to be minor, but Okaloosa County would add or redistribute trashcans as deemed necessary. Okaloosa County would remove heavy debris on the pathway following a natural disaster.

Transportation. Short-term, negligible, adverse impacts on transportation within the North Alternative project area would be expected from construction of the pathway. Some phases of construction may temporarily block access to Gulf Islands National Seashore (Okaloosa Area), USCG Station Destin, and commercial properties along U.S. 98; however, construction of the pathway would be phased to minimize disruption of access to these properties. Additionally, increased construction truck and construction worker traffic could cause a temporary increase in traffic volumes or slowdowns along U.S. 98. Okaloosa County would coordinate pathway and associated infrastructure design and construction timing with FDOT, Eglin AFB, and USCG Station Destin to avoid conflicts with roadway infrastructure (e.g., gabion mats and sheet piles along U.S. 98), parking barriers (e.g., west of Marler Bridge), approved projects (e.g., Brooks Bridge replacement), operations, and training events to minimize short-term impacts. Additionally, the management actions in **Section 4.3.6** would be followed.

Long-term, minor, beneficial impacts on transportation would occur following completion of the pathway along the North Alternative. A continuous multi-use pathway along the length of the project area would provide pedestrians and cyclists a safer means of travelling along U.S. 98. The pathway design would include a combination of open space (sand and grass), safety barriers (where necessary in accordance with the FDOT *Design Manual*), bollards, and signs to separate pathway users from U.S. 98 and prevent vehicles from parking on the pathway. Signs would be posted along the pathway in select areas noting that parking on the pathway and outside of designated parking spaces is prohibited. Traffic control devices for the pathway (e.g., signs, signals, markings) would be selected and placed in accordance with FHWA's *Manual of Uniform Traffic Control Devices*. The pathway also would assist in the completion of the Great Northwest Coastal Trail Corridor.

The pathway would attract new users that may slightly increase traffic and require parking. However, U.S. 98 already has average traffic volumes of over 40,000 vehicles per day, and the addition of the new pathway user traffic would be negligible. Additionally, some people might prefer to use the pathway rather than drive, especially for short distances. Existing parking areas along and near the North Alternative project area would supply parking for pathway users. The bicycle facilities (i.e., bicycle lanes and paved shoulders) along U.S. 98 would remain, but the majority of the 0.1-mile-long sidewalk on the north side of U.S. 98 would be replaced by the wider and longer pathway.

3.6.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Infrastructure. Unlike the North Alternative, no utility poles for overhead electricity would require relocation. The stormwater infrastructure, underground potable water lines, and underground telecommunications fiber line would be marked prior to construction of the

pathway and avoided or protected. No impacts on the underground natural gas pipeline and wastewater service lines to the north of U.S. 98 would occur. Construction and operation of the pathway is not expected to increase the demand for utility services.

The pathway would add approximately 16 acres of impervious surface, which could result in long-term, minor, adverse impacts on stormwater management because more stormwater would flow to the retention basin at Pier Road, the capacity for the soils to absorb or infiltrate water would become more limited, and increased sheet flow of stormwater would occur.

Section 3.12.3.2 contains additional information on impacts from stormwater runoff.

Construction contractors would be responsible for the disposal of solid waste during construction. Okaloosa County would continue to remove trash and pet waste from the trashcans at the Airman Beach, Matterhorn Beach, and Princess Beach Eglin AFB-designated beach access point parking areas and associated beach areas, as well as the trashcans from the Okaloosa County-managed parks and public parking lots near the project area. The amount of additional solid waste generated at these trashcans is expected to be minor, but Okaloosa County would add or redistribute trashcans as deemed necessary. Okaloosa County would remove heavy debris on the pathway following a natural disaster.

Transportation. Similar short-term, negligible, adverse impacts on transportation within the project area would be expected from construction of the pathway as described for the North Alternative. Some phases of construction may temporarily block access to public parks, the Eglin AFB-designated beach access point parking areas, and commercial properties along the South Alternative project area; however, construction of the pathway would be phased to minimize the disruption of access to these properties. Additionally, increased construction truck and construction worker traffic could cause a temporary increase in traffic volumes or slowdowns along U.S. 98. Okaloosa County would coordinate pathway and associated infrastructure design and construction timing with FDOT, Eglin AFB, and commercial properties to avoid conflicts with roadway infrastructure (e.g., gabion mats and sheet piles along U.S. 98), parking barriers (e.g., west of Marler Bridge), approved projects (e.g., Brooks Bridge replacement), operations, and training events to minimize short-term impacts. The management actions in **Section 4.3.6** would be followed.

Long-term, moderate, beneficial impacts on transportation would occur following completion of the pathway along the South Alternative. Beneficial changes include: 1) a continuous multi-use pathway along the length of the project area, 2) upgraded parking areas at three Eglin AFB-designated beach access points, and 3) upgraded ingress/egress and associated safety features for West Jetties Parking. The pathway also would assist in the completion of the Great Northwest Coastal Trail Corridor.

Like the North Alternative, the South Alternative would provide pedestrians and cyclists a safer means of travelling along U.S. 98. The pathway design would include a combination of open space (sand and grass), safety barriers (where necessary in accordance with the FDOT *Design Manual*), bollards, and signs to separate pathway users from U.S. 98 and prevent vehicles from parking on the pathway. Signs would be posted along the pathway in select areas, including at the Eglin AFB-designated beach access parking areas, noting that parking on the pathway and

outside of designated parking spaces is prohibited. Traffic control devices for the pathway (e.g., signs, signals, markings) would be selected and placed in accordance with FHWA's *Manual of Uniform Traffic Control Devices*.

Additional vehicle traffic from the pathway users is anticipated to be minor, in comparison to the average traffic volumes of over 40,000 vehicles per day on U.S. 98, and parking would be accommodated via existing parking areas along and near the South Alternative project area. The bicycle facilities (i.e., bicycle lanes and paved shoulders) along U.S. 98 would remain, but the majority of the 0.6-mile-long sidewalk along the south side of U.S. 98 would be replaced by the wider and longer pathway.

The South Alternative includes upgrade of the parking areas at three Eglin AFB-designated beach access points (i.e., Airman Beach, Matterhorn Beach, Princess Beach). The parking areas would be upgraded with a pervious stabilized base to prevent vehicles from sinking, curbing to contain the stabilized base, parking curb stops to designate the parking spaces, and protection (e.g., bollards, fence, parking curb stops) to prevent vehicles from parking on the pathway. The upgraded parking areas would be sized to match the approximate area currently being used for vehicle parking at these beach access points. The Matterhorn Beach and Princess Beach upgraded parking areas would be designed to accommodate 7 to 15 vehicles and the Airman Beach upgraded parking area would be designed to accommodate 6 to 10 vehicles. No upgrades would occur at West Jetties Parking because it is closed and already contains a pervious stabilized base. The upgraded parking areas would be positioned between the pathway and U.S. 98. The final location, size, and design of the upgraded parking areas would be determined during final design and require Eglin AFB approval.

The South Alternative includes an upgraded ingress/egress (i.e., improved driveway) and associated safety features (e.g., safety barrier) for West Jetties Parking. The type of upgraded ingress/egress and associated safety features would be determined during final design if the South Alternative were selected for implementation.

3.6.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pathway would not be constructed and utility services would continue in their current state. Although no impacts on utilities would occur, long-term, minor, adverse impacts on bicycle and pedestrian facilities would continue because the current facilities are unable to safely support pedestrians and cyclists. A gap in the Great Northwest Coastal Trail Corridor would remain.

3.7 Land Use

3.7.1 Definition of the Resource

Land Use. Land use refers to real property classifications that indicate either natural conditions or the types of human activity occurring on a land parcel. In many cases, land use descriptions are codified in master planning and local zoning laws and can be managed using a variety of land use planning tools (i.e., zoning, easement, right-of-way, subdivision regulations, deed restriction, and covenants). Land use planning ensures appropriate growth and compatible uses

among adjacent property parcels; however, the meanings of various land use descriptors vary among jurisdictions. Natural conditions of property could be categorized as unimproved, undeveloped, preservation, or conservation areas. Human land use categories could include residential, commercial, industrial, agricultural, institutional, and recreational.

In appropriate cases, the location and extent of a proposed action needs to be evaluated for its potential effects on a project site and adjacent land uses. The foremost factor affecting a proposed action in terms of land use is its compliance with applicable land use zoning regulations. Other relevant factors include matters such as existing land use at the project site, the types of land use on adjacent properties and their proximity to a proposed action, the duration of the proposed activity, and its permanence.

Recreation. Recreational resources include areas and infrastructures designated by local, state, and federal planning entities to offer visitors and residents diverse opportunities to enjoy leisure activities. Recreation areas range from natural and relatively undisturbed areas to highly developed sites with permanent infrastructure. Land-based recreational resources include open space, parklands, hiking and biking trails, and coastal beaches. Aquatic recreational resources include recreational fishing and boating areas and water sport areas.

Air Force Manual 32-7003 classifies unimproved USAF-managed lands into three categories that describe the degree of public access for all areas that are suitable for outdoor recreation. The categories are Open Areas, Restricted Areas, and Off Limits Areas.

Coastal Zone. The federal Coastal Zone Management Program addresses the nation's coastal zone through a voluntary partnership between the federal government and coastal and Great Lakes states and territories. Authorized by the CZMA (16 USC § 1451 et seq., as amended), the program aims to protect, restore, and responsibly develop the nation's diverse coastal communities and resources. The coastal zone refers to the coastal waters and the adjacent shorelines, including islands, transitional and intertidal seas, salt marches, wetlands, and beaches.

Generally, federal consistency requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone, be consistent with enforceable policies of a state's federally approved coastal management program. Federal actions include federal agency activities, federal license or permit activities, and federal financial assistance. Federal agency activities must be consistent to the maximum extent practicable with the enforceable policies of a state's coastal management program.

3.7.2 Affected Environment

OKALOOSA ISLAND

Land Use. The portion of the project area west of Eglin AFB is an unincorporated area managed by Okaloosa County. The unincorporated land within the project area is composed of four classified areas or zones (i.e., B-1, Private Residential; B-2, Apartment, Hotel Court, and Hotel; B-3, Light Commercial and Concession; and B-4, Parks, Beaches, and Freeway) and

Recreation. Because this portion of the project area is entirely within the FDOT right-of-way (Okaloosa Island), the project area is not within a specific county zoning district. The current and future land uses adjacent to the project area within unincorporated Okaloosa County include B-3 (Light Commercial and Concession) and Recreation/Public Land (Eglin AFB 2019).

Recreation. There are several unrestricted beach access points within Okaloosa Island. The public uses near-shore areas of the Gulf and Choctawhatchee Bay for boating, fishing, and other water-related activities. The following recreation facilities are adjacent to the non-Eglin AFB portion of the project area:

- *Okaloosa Island Fishing Pier.* The Okaloosa Island Fishing Pier is south of Pier Road, is privately managed, and stretches more than 0.25 mile into the Gulf of Mexico. The pier is open 24 hours per day/7 days per week, except during the winter months (from mid-October through mid-March) when it operates daily from 5 a.m. to 9 p.m. The pier is used mainly for saltwater fishing activities. The parking lot just north of the pier can accommodate approximately 90 vehicles (Okaloosa Island 2019).
- *Wayside Park.* Wayside Park, also referred to as The Boardwalk by locals, is managed by Okaloosa County Parks Division and offers several pavilions, 41 picnic tables, restrooms with changing rooms, volleyball nets, a children's playground, restaurants, dune walkovers/beach access points, and approximately 500 parking spaces. The park is south of U.S. 98 and is adjacent to the east of the Okaloosa Island Fishing Pier (Okaloosa County 2015c).
- *John Beasley Park.* John Beasley Park is south of U.S. 98, managed by the Okaloosa County Parks Division, and features 2 dune walkovers/beach access points, 2 large pavilions, 12 picnic tables, restrooms with changing rooms, and a parking lot that can accommodate 208 vehicles (Okaloosa County 2015b).
- *Gulf Islands National Seashore.* The Gulf Islands National Seashore is monitored and managed by the National Park Service (NPS). The portion of the Gulf Island National Seashore within the project area is referred to as the Okaloosa Day Use Area and is north of U.S. 98. The recreation area includes amenities such as a parking area with approximately 200 spaces, picnic areas, public restrooms with outdoor showers, and a boat launch for non-motorized vessels (i.e., kayaks, canoes, and paddleboards). The Okaloosa Day Use Area is open year-round from 8 a.m. to sunset daily (NPS 2018).

To improve intermodal connectors by closing gaps in the statewide paved trail system and increase the reliability of Florida's transportation system, FDEP has identified the project area as being a portion of a Land Trail Priority under the FGTS Plan. Therefore, the FDEP Office of Greenways and Trails has identified the project area as a location that should have a multi-use trail to support the FGTS.

Coastal Zone. The FCMP consists of nine state agencies and five regional water management districts who implement 24 statutes to protect and enhance the state's natural, cultural, and economic coastal resources. FDEP directs the FCMP and the Florida State Clearinghouse

coordinates select federal agency consistency reviews. The coastal zone in Florida is defined as the entire state—all 67 counties and adjacent territorial seas. Under the FCMP, permits are required for erosion control devices, excavations, or erection of structures water-ward of the Coastal Construction Control Line. This line demarks the landward extent of the potential inland impacts of erosion because of a 100-year storm event. The Okaloosa Island portion of the project area is landward of the Coastal Construction Control Line; however, it is within the coastal zone of Florida (FDEP 2019c).

EGLIN AFB

Land Use. Eglin AFB controls 4,760 acres of Santa Rosa Island. This portion of the project area is entirely within the FDOT easement, which is maintained and managed by FDOT and subject to various FDOT standards regarding land use.

The *Eglin AFB Comprehensive Range Plan Land Use Plan* established three broad categories of land uses for the Eglin AFB Range. These land use categories include Armament Hazard, or areas that encompass land associated with delivery of ordnance; Maneuver, or areas that include land outside Armament Hazard areas that are necessary to accommodate mission training; and Auxiliary, or areas used for functions such as administrative, communication, electronic warfare, and analysis operations. Each land use category is further subdivided based on the primary functional land use within that category. Current land use categories on Eglin AFB within the project area are primarily Maneuver-Amphibious, with small areas of Auxiliary-Outgrant, Auxiliary-Range Support, and Auxiliary-Recreation, and Auxiliary-Operational Mission (Eglin AFB 2014).

Recreation. The Eglin AFB outdoor recreation program provides recreational opportunities to the public in a manner that is compatible with existing land uses and the military mission; however, areas typically open to recreation are sometimes closed for training or testing purposes. A public access map is published on the Eglin AFB iSportsman website (<https://eglin.isportsman.net>) and is updated multiple times a day to provide notification of closures or changes in recreational land uses (Jackson Guard 2019a). The western and southern portions of the Eglin AFB portion of the project area are classified as a recreation area open to all forms of recreation except hunting (Jackson Guard 2019a). The following is a list of beach access points and recreational areas adjacent to the project area and within the Eglin AFB boundary:

- *Airman Beach, Matterhorn Beach, and Princess Beach.* These beaches and beach access points offer limited, unpaved parking and no additional amenities. Visitors are required to obtain a beach permit and watch a short informational video about safety and natural resource conservation (Jackson Guard 2019b).
- *Eglin Beach Park.* Eglin Beach Park is just west of the Marler Bridge; is open during the summer months; and features four large pavilions, a central deck area, restrooms with showers, and multiple beach access points. Parking is only available for DoD personnel and their guests. All visitors to the park are required to obtain a beach permit and watch

a short informational video about safety and natural resource conservation (Jackson Guard 2019b).

Authorized public recreation on Santa Rosa Island consists of fishing, swimming, sunbathing, and beach walking. The public can access the recreation areas via four access points for beach access, and recreational users are instructed to stay below the primary dune line. Recreation types that are unauthorized on Santa Rosa Island include beach driving, sand dune sledding, night camping, and campfires (USAF 2017). Permits for Eglin AFB outdoor recreational activities are required to lawfully access lands designated for public use.

Coastal Zone. Similar to Okaloosa Island, the Eglin AFB portion of the project area is within the coastal zone of Florida; therefore, the installation is required to comply with applicable components of the FCMP to the extent practicable.

3.7.3 Environmental Consequences

Impacts on land use, recreation, and the coastal zone would be considered significant if the Proposed Action resulted in the following:

Land Use

- Noncompliance with existing land use plans or policies.
- Preclusion of the viability of existing land use.
- Preclusion of continued use or occupation of an area.
- Incompatibility with adjacent land use to the extent that public health or safety is threatened.
- Conflict with planning criteria established to ensure the safety and protection of human life and property.

Recreation

- Interference with the use or function of, or otherwise diminish the value of, recreation areas.

Coastal Zone

- Noncompliance with applicable coastal zone policies including the requirements of the CZMA and FCMP.
- Deterioration of Florida's coastal ecosystems by negatively affecting coastal resources through one or more of the 24 enforceable statutes of the FCMP.

3.7.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND

Land Use. Short-term, negligible, adverse impacts on land use would occur within Okaloosa Island under the North Alternative because construction could temporarily block access to commercial, residential, and recreational properties. Construction would be phased and communicated with property owners to minimize access issues.

The pathway would be designed to avoid utilities and other incompatible land use areas; and would not be incompatible with adjacent land uses. This portion of the pathway would be entirely within the FDOT right-of-way (Okaloosa Island), which is designated for transportation purposes, and the pathway would replace the majority of the existing sidewalk north of U.S. 98 in Okaloosa Island; therefore, no land use changes would occur.

Recreation. Short-term, negligible, adverse impacts on recreation would occur under the North Alternative because construction could partially block access to recreation areas such as the Gulf Islands National Seashore. Construction would be phased to maximize access to the Gulf Islands National Seashore.

Long-term, minor, beneficial impacts would occur on recreation following completion of the pathway because access to the Gulf Islands National Seashore, located north of U.S. 98, would be improved for pedestrians and cyclists travelling along the pathway. Additionally, the pathway would connect a gap in the Great Northwest Coastal Trail Corridor of the FGTS, providing a greater recreational experience through a continuous and safe trail.

Coastal Zone. The Proposed Action would take place within the jurisdictional concerns of FDEP and therefore requires a consistency determination with respect to Florida's Coastal Zone Management Plan and the CZMA. Eglin AFB prepared and submitted a coastal consistency determination to address the potential impacts of the Proposed Action on the coastal zone and consistency with the FCMP (see **Appendix B**). The coastal consistency determination noted that the Proposed Action would not affect the majority of coastal uses or resources including beach and shore preservation, growth policy, state and regional planning, emergency management, state lands, state parks and preservers, land acquisition for conservation or recreation, historical resources, transportation finance and planning, energy resources, land and water management, public health, mosquito control, building construction standards, and aquaculture. The Proposed Action would be consistent with state and regional planning policy, state lands regulation, land acquisition guidelines, the Florida Greenways and Trails Program, and commercial development and capital improvements policy. Although negligible to minor impacts could occur on transportation administration, water resources, outdoor recreation and conservation lands, pollutant discharge prevention and removal, fish and wildlife conservation, environmental control, and soil and water conservation, the Proposed Action would be consistent with the enforceable policies of the FCMP. **[[Preparer's Note: Text will be updated upon receipt of a response from the State of Florida.]]**

EGLIN AFB

Land Use. Short-term, minor, adverse impacts on land use within Eglin AFB would occur under the North Alternative because construction may temporarily block the access road for USCG Station Destin. Because there are no Eglin AFB ranges north of U.S. 98, it is not anticipated that construction would conflict with the Comprehensive Range Plan Land Use Plan or current Maneuver or Auxiliary land uses. The pathway would be designed to avoid utilities and other incompatible land use areas. This portion of the pathway would be entirely within the FDOT easement (Eglin AFB), which would be a continuation of the current land use. Therefore, no

permanent changes in land use would occur, and no long-term, adverse impacts on land use within Eglin AFB would occur.

Recreation. Because there are no beach access points or public areas within Eglin AFB north of U.S. 98, construction and operation of the pathway would not impact public access areas or permanently change recreational land uses. Therefore, no short- or long-term, adverse impacts on recreation would occur.

Long-term, minor, beneficial impacts would occur on recreation. The pathway would connect a gap in the Great Northwest Coastal Trail Corridor of the FGTS, providing a greater recreational experience through a continuous and safe trail. The North Alternative would improve access between the north side of U.S. 98 and the Marler Bridge pedestrian walkway by providing a passage under Marler Bridge that would connect the pathway to the pedestrian walkway.

Coastal Zone. Coastal zone effects would be as described for the Okaloosa Island portion of the North Alternative.

3.7.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND

Land Use. Under the South Alternative, short-term, negligible impacts on land use would occur within Okaloosa Island because construction could temporarily block access to commercial, residential, and recreational properties. However, construction would be phased and communicated with property owners to minimize access issues.

The pathway would be designed to avoid utilities and other incompatible land use areas to the extent feasible, and the pathway would not be incompatible with adjacent land uses. This portion of the pathway would be entirely within the FDOT right-of-way (Okaloosa Island), which is designated for transportation purposes, and the pathway would replace the majority of the existing sidewalk south of U.S. 98 in Okaloosa Island; therefore, no land use changes would occur.

Recreation. Short-term, negligible, adverse impacts on recreation would occur under the South Alternative because construction could partially block access to recreational areas on Okaloosa Island. Construction would be phased and communicated to minimize adverse impacts.

Long-term, minor, beneficial impacts on recreation would occur following completion of the pathway because access to Okaloosa Island recreational areas south of U.S. 98 (e.g., Wayside Park, John Beasley Park) would be improved for pedestrians and cyclists. Additionally, the pathway would connect a gap in the Great Northwest Coastal Trail Corridor of the FGTS, providing a greater recreational experience through a continuous and safe trail.

Coastal Zone. Coastal zone effects would be as described for the Okaloosa Island portion of the North Alternative.

EGLIN AFB

Land Use. Short-term, minor, adverse impacts on land use at Eglin AFB would occur under the South Alternative because of temporary access restrictions during construction. Okaloosa County would coordinate pathway design and construction with Eglin AFB to avoid impacts on access to Eglin AFB training/testing areas and Eglin AFB-designated beach access points south of U.S. 98. The pathway would be designed to avoid utilities and other incompatible land use areas to the extent feasible. This portion of the pathway would be entirely within the FDOT easement (Eglin AFB), which would be a continuation of the current land use. Therefore, no changes in land use would occur, and no long-term, adverse impacts on Eglin AFB land use would be anticipated.

Recreation. Construction of the pathway would be phased to maximize the availability of the Eglin AFB-designated beach access points within the project area; however, short-term closures to beach access points may occur during construction of the pathway, and partial to full closures of beach access point parking areas may occur while the parking areas are being upgraded. These temporary closures could result in short-term, minor, adverse impacts on recreation at Eglin AFB. Okaloosa County would be responsible for the management actions listed in **Section 4.3.7** and would coordinate with Eglin AFB regarding advanced notice to the public via the Public Access Map of temporary restricted access and closures within Eglin AFB.

Long-term, minor, beneficial impacts on recreation would occur because access to the Eglin AFB-designated beach access points would be improved for pedestrians and cyclists and vehicle parking at the Eglin AFB-designated beach access points would be improved. Additionally, the pathway would provide connectivity between recreation areas along the pathway; and connect a gap in the Great Northwest Coastal Trail Corridor of the FGTS, providing a greater recreational experience through a continuous and safe trail.

Coastal Zone. Coastal zone effects would be as described for the Okaloosa Island portion of the North Alternative.

3.7.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pathway would not be constructed, and Okaloosa County and Eglin AFB land use designations would continue in their current state. Additionally, all recreation areas and the coastal zone would remain unchanged. Therefore, no land use, recreation, or coastal zone impacts would occur.

3.8 Noise

3.8.1 Definition of the Resource

Noise is any sound that is undesirable because it interferes with communication, is intense enough to damage hearing, or is otherwise intrusive. Noise can be intermittent or continuous, steady, or impulsive, and can involve a number of sources and frequencies. Human responses to similar noise events vary depending on the type and characteristics of the noise, distance between the noise source and receptor, time of day, and the noise sensitivity of the individual. Sensitive noise receptors could include specific locations (e.g., schools, housing, hospitals) or

an expansive area (e.g., nature preserves, conservation areas, historic preservation districts) in which occasional or persistent sensitivity to noise above ambient levels exist.

Sound intensity is quantified using decibels (dB), which is a measure of sound pressure level. The dB is a logarithmic unit that expresses the ratio of a sound pressure level to a standard reference level. In some instances, “A-weighting” may be applied to the dB to approximate a frequency response expressing the perception of sound by the human ear. The unit for this type of measurement is A-weighted decibels (dBA). Sounds encountered in daily life and their approximate noise levels are provided in **Table 3-6**.

Table 3-6. Common Sounds

Outdoor	Sound Level (dBA)	Indoor
Motorcycle	100	Subway train
Tractor	90	Garbage disposal
Noisy restaurant	85	Blender
Downtown (large city)	80	Ringling telephone
Freeway traffic	70	TV audio
Normal conversation	60	Sewing machine
Rainfall	50	Refrigerator
Quiet residential area	40	Library

Source: USEPA 1971

The range of audible sound levels for humans is 0 to 130 dBA. Most humans can just barely perceive a noise level change of 3 dBA and the threshold for perception of a noise level change is 5 dBA. A noise level that increases by 10 dBA typically is perceived as being twice as loud, and a noise level that decreases by 10 dBA is perceived as being half as loud. Atmospheric conditions such as wind, temperature gradients, and humidity can change how sound propagates over large distances and can affect the level of sound received at a given location. Ground surfaces also can affect sound propagation. For instance, sound travelling over an acoustically absorptive surface such as grass weakens at a greater rate than sound traveling over pavement. Barriers such as buildings and topography that block the line of sight between a noise source and receptor can also weaken the propagation of sound (USEPA 1971).

Equivalent sound level (L_{eq}) and day-night sound level (DNL) also are metrics used to describe noise. L_{eq} is the average sound level in dB of an event or period of time. DNL is the average sound energy in a 24-hour period with a penalty of 10 dB added to nighttime (10 p.m. to 7 a.m.) levels. DNL is a useful descriptor because it: (a) averages ongoing yet intermittent noise, and (b) measures total energy over a 24-hour period. DNL provides a measure of the overall acoustical environment, but it does not directly represent the sound level at any given time.

The Noise Control Act of 1972 established a national policy to promote an environment free from noise that jeopardizes human health and welfare. It directs federal agencies to comply with applicable federal, state, and local noise control regulations. The minimum requirement states that constant noise exposure for workers must not exceed 90 dBA over an 8-hour period. The

highest allowable sound level to which workers can be constantly exposed is 115 dBA and exposure to this level must not exceed 15 minutes within an 8-hour period. The standard limits instantaneous exposure to 140 dBA (Okaloosa County 2019b). Eglin AFB is required to comply with local noise control regulations for off-installation areas only. Military training activities such as munitions and demolition training and aircraft operations are exempt from local noise control regulations. The Okaloosa County noise ordinance states that noise levels are not to exceed 60 dBA from 7 a.m. to 10 p.m. and 55 dBA from 10 p.m. to 7 a.m. (Okaloosa County 2019b). Construction activities are exempt from the not-to-exceed level from 7 a.m. to 10 p.m., and other activities such as aircraft activity, utility operation, hunting, and law enforcement activities are completely exempt from the noise ordinance (Okaloosa County 2019b).

Construction noise can cause an increase in sound that is well above ambient levels. A variety of sounds is emitted from construction equipment such as loaders, trucks, and pavers. Noise levels associated with common types of construction equipment are listed in **Table 3-7**. Construction equipment typically exceeds the ambient sound levels by 20 to 25 dBA in an urban environment and up to 35 dBA in a quiet suburban area. Construction noise is short-term because it only results when construction activities are occurring.

Table 3-7. Average Noise Levels for Common Construction Equipment

Construction Category and Equipment	Predicted Noise Level at 50 feet (dBA)	Predicted Noise Level at 250 feet (dBA)	Predicted Noise Level at 500 feet (dBA)	Predicted Noise Level at 1,000 feet (dBA)
Clearing and Grading				
Grader	80 to 93	66 to 79	60 to 73	54 to 67
Truck	83 to 94	69 to 80	63 to 74	57 to 68
Backhoe	72 to 93	58 to 79	52 to 73	46 to 67
Construction				
Concrete Mixer	74 to 88	60 to 74	54 to 68	48 to 62
Paver	86 to 88	72 to 74	66 to 88	60 to 62
Dozer/Tractor/ Front Loader	75 to 80	61 to 66	55 to 60	49 to 54

Sources: USEPA 1971, TRS Audio 2019

3.8.2 Affected Environment

OKALOOSA ISLAND

Wind and surf are the major natural sound sources that make up the ambient noise environment of the Okaloosa Island portion of the project area. Man-made noise sources include vehicles, aircraft flyovers, commercial and recreational vessels in Santa Rosa Sound and the Gulf of Mexico, and other noise sources associated with commercial, residential, and recreational activities. Because the Okaloosa Island portion of the project area is a developed tourist area, normal ambient noise levels may be higher than ambient noise levels in rural or undeveloped areas such as on Eglin AFB. The project area is well outside of the 65 dB DNL noise contour for Eglin AFB Main Base/Destin-Fort Walton Beach Airport and, therefore, does not typically experience noise from aircraft operations above 65 dB DNL (Eglin AFB 2018). Noise sensitive

receptors near the Okaloosa Island portion of the project area include people at nearby hotels north and south of U.S. 98; Gulf Islands National Seashore north of U.S. 98; and John Beasley Park, Wayside Park, Okaloosa Island Fishing Pier, and residences south of U.S. 98.

EGLIN AFB

The portion of Eglin AFB within the project area is mostly undeveloped and the primary noise source is road traffic on U.S. 98. Other noise sources such as military training at the ranges at the beaches, ground maintenance activities, and natural noise sources such as bird and animal vocalizations and wind and surf also are present. Because the project area within Eglin AFB is mostly undeveloped, ambient noise levels are lower than the ambient noise levels of the Okaloosa Island portion of the project area. Noise sensitive receptors near the Eglin AFB portion of the project area include recreation areas such as Matterhorn Beach, Princess Beach, Airman Beach, and Eglin Beach Park, which are south of U.S. 98.

3.8.3 Environmental Consequences

This section discusses the environmental consequences of noise from construction and operations; potential changes to land use compatibility from noise; and the potential for human annoyance from noise. Impacts on biological resources and sensitive species from noise are discussed in **Section 3.2**. Impacts on noise would be considered significant if the Proposed Action were to result in the violation of applicable federal, state, or local noise regulations; create appreciable areas of incompatible land use; or result in noise that would negatively affect the health of the community.

3.8.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND

Construction under the North Alternative would result in short-term, negligible to minor, adverse impacts on the ambient noise environment within Okaloosa Island. Construction would require the use of heavy equipment that would generate temporary noise. Construction of the pathway would require excavation, grading, and paving. Heavy equipment such as those identified in **Table 3-7** would be used and would cause short-term increased noise levels in the construction area. Individual pieces of equipment would be expected to produce noise levels between 72 and 94 dBA at a distance of 50 feet. Any noise generated would decrease with increasing distance from the construction activities.

The nearest noise-sensitive receptor to the North Alternative project area is Gulf Islands National Seashore, which is immediately adjacent to the North Alternative. Construction noise, such as paving and clearing activities, in this area would increase ambient noise levels. However, construction would be intermittent and temporary and the noise-generating construction activities would be continuously advancing along U.S. 98 and, therefore, would only affect the sensitive-noise receptor for a short time.

All construction associated with the pathway on Okaloosa Island would be conducted in the context of a commercialized developed area, where traffic, tourist activity, and other types of noise are typical. To prevent noise impacts on noise-sensitive receptors such as Gulf Islands

National Seashore, the following BMPs, along with the management actions presented in **Section 4.3.8**, could be implemented:

- Limit construction to normal weekday business hours.
- Ensure that all heavy construction equipment includes all factory-equipped noise abatement components such as muffler, engine enclosures, engine vibration isolators, or other sound dampening supplements.
- Turn off all idling equipment when not in use.
- Maintain uniform noise levels and avoid impulsive noises.
- Require construction and demolition personnel, and particularly equipment operators, to wear personal hearing protection to limit exposure to noise and ensure compliance with Occupational Safety and Health Administration (OSHA) standards.
- Maintain good relationships with the community, publish/distribute notices before noisy operations occur, and provide the community with frequent updates as to when and where construction actions would take place.

Given the temporary nature of construction and the existing noise environment, the adverse impacts from construction noise would be short term and negligible to minor.

Long-term, intermittent, negligible to minor, adverse noise impacts would occur due to general maintenance and repair of the pathway. Noise from heavy equipment would be produced during maintenance and repair activities such as sand removal and repairs of the pathway and safety barriers. This noise would be temporary and would end upon the completion of the maintenance activity. Similar BMPs as identified for construction would be implemented, as needed, to reduce noise during maintenance activities. Long-term, constant noise would not be produced from operation of the pathway.

EGLIN AFB

Short-term, negligible to minor, adverse impacts on the noise environment within Eglin AFB would occur under the North Alternative. These impacts would be similar to those described for Okaloosa Island. The noise impacts resulting from construction within the Eglin AFB portion of the project area could be slightly greater because the project area within Eglin AFB is undeveloped and experiences lower ambient noise levels than the Okaloosa Island portion of project area. BMPs to limit noise impacts, such as those listed for Okaloosa Island, and the management actions listed in **Section 4.3.8** would be implemented to the greatest possible extent. Noise would return to normal levels following completion of construction.

Long-term, intermittent, negligible to minor, adverse impacts on noise would occur due to temporary heavy equipment use during pathway maintenance and repair activities (e.g., sand removal, barrier repair). However, long-term, constant noise would not be produced from operation of the pathway.

3.8.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND

Under the South Alternative, short-term, negligible to minor, adverse impacts on noise within the Okaloosa Island portion of the project area would occur due to pathway construction. Impacts would be similar to those described for the North Alternative. To minimize noise impacts on noise-sensitive receptors such as John Beasley Park, Wayside Park, Okaloosa Island Fishing Pier, hotels, and residences, the BMPs listed in **Section 3.8.3.1** and the management actions listed in **Section 4.3.8** would be implemented. Long-term, intermittent, negligible to minor, adverse impacts on noise within Okaloosa Island would occur because of temporary heavy equipment use during pathway maintenance and repair. Long-term, constant noise would not be produced from operation of the pathway.

EGLIN AFB

Under the South Alternative, short-term, negligible to minor, adverse impacts on noise at Eglin AFB would occur due to pathway construction. Impacts would be similar to those described for Eglin AFB under the North Alternative. To minimize noise impacts on noise-sensitive receptors such as Matterhorn Beach, Princess Beach, Airman Beach, and Eglin Beach Park, the BMPs listed in **Section 3.8.3.1** and the management actions listed in **Section 4.3.8** would be implemented. Long-term, intermittent, negligible to minor, adverse impacts on noise at Eglin AFB would occur due to temporary heavy equipment use during pathway maintenance and repair. Long-term, constant noise would not be produced from operation of the pathway.

3.8.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pathway would not be constructed and any impacts on noise because of pathway construction and maintenance and repair activities would not occur. Noise conditions would continue in their current state.

3.9 Safety

3.9.1 Definition of the Resource

A safe environment is one in which there is no, or an optimally reduced, potential for death, serious bodily injury or illness, or property damage. Potentially unsafe situations or environments exist when a hazard is exposed to a potentially susceptible population. The degree of exposure depends on the proximity of the hazard to the population and the severity of the hazard. Safety addresses the well-being, safety, and health of members of the public, contractors, and USAF personnel throughout implementation of a proposed action.

There are a number of DoD and USAF documents that outline construction site and operational safety, and aim to reduce the risk of illness, injury, death, and property damage. The OSHA, USEPA, and state and regional occupational health and safety agencies also serve to safeguard the health and safety of civilian and military personnel. Standards specified by these agencies include the amount and type of training required for participation in construction activities, the required use of personal protective equipment (PPE), administrative controls,

engineering controls, availability of safety data sheets, and permissible exposure limits for workplace stressors.

AFI 91-202, *The USAF Mishap Prevention Program*, ensures that USAF operational and construction procedures meet or exceed OSHA and Air Force Occupational Safety and Health guidance as well as other federal safety and health requirements. Air Force Manual 91-203, *Air Force Occupational Safety, Fire, and Health Standards*, provides specific work procedures for a safe workplace and details safety components of construction work including civil engineering activities, motor vehicle operations and maintenance, materials handling, mishap prevention, fire prevention, and tools and machinery operations.

Additionally, FDOT's *2018 Highway Safety Plan* includes goals to provide safety and security for Florida residents, visitors, and businesses in an effort to reduce traffic crashes, fatalities, and serious injuries with an ultimate target goal of zero deaths. To help reach safety goals, FDOT established the Florida Pedestrian and Bicycle Safety Program to increase safety awareness and skills among pedestrians, bicyclists, and motorists who share the road (FDOT 2018b).

3.9.2 Affected Environment

Naturally occurring potential health and safety hazards within Northwest Florida include wildlife such as snakes and insects, naturally occurring fires, and climatic conditions. Potential man-made health and safety hazards include aircraft noise exposure, fire/explosions, and ground traffic conditions that may contribute to motor vehicle accidents. The project area is in the southeastern Florida panhandle, along the Gulf coast, which experiences a range of climatic conditions throughout the year and the most common natural disasters are hurricanes, tropical storms, tropical depressions, wildfires, and floods.

The speed limit for U.S. 98 along the project area ranges from 35 to 55 mph. Bicycle facilities along the project area include an intermittently marked bicycle lane on the eastbound side of U.S. 98 from Pier Road to the elevated pedestrian walkway above U.S. 98 (approximately 0.3 mile), an intermittently marked bicycle lane on the westbound side of U.S. 98 between Pier Road and the central portion of the project area (approximately 2.8 miles), and paved shoulders on both sides of U.S. 98 where there are no bicycle lanes. The bicycle lanes and paved shoulders offer cyclists little to no protection from vehicle traffic. The pedestrian pathways within and along the project area consist of an approximately 0.1-mile-long sidewalk along the north side of U.S. 98 (0.3 miles east of Pier Road) and an approximately 0.6-mile-long sidewalk along the south side of U.S. 98 (from Pier Road to the Eglin AFB property line). The sidewalks are narrow, cross several driveways, and offer little to no protection from vehicle traffic.

Review of FDOT's Crash Analysis Reporting System data and University of Florida's Signal Four Analytics data identified 24 vehicle/pedestrian and vehicle/cyclist accidents along U.S. 98 between Brooks Bridge and Marler Bridge from 2012 through 2018. Seven of those accidents involved fatalities (FDOT 2019a; University of Florida 2019).

The safety program at Eglin AFB ensures the safety of USAF personnel and the public on Eglin AFB by regulating mission activities. AFI 91-202 implements Air Force Policy Directive 91-2, *Safety Programs*, which applies to all activities that occur on Eglin AFB.

USAF, Okaloosa County, FDOT, and contractor personnel are required to follow applicable OSHA regulatory requirements, except if working on Eglin AFB where DoD- or USAF-specific requirements may apply. Personnel are required to review potentially hazardous workplace operations; monitor exposure to workplace chemicals (e.g., petroleum products and hazardous materials), physical exposure (e.g., noise propagation and falls), and biological agents (e.g., infectious waste, wildlife, and poisonous plants); recommend and evaluate controls (e.g., prevention, administrative, and engineering) to ensure personnel are properly protected or unexposed; and provide a medical surveillance program to perform occupational health physicals for workers subject to accidental chemical exposures. It is the responsibility of the employer to ensure that personnel are up to date on all applicable requirements and that available safety equipment is applied and used to the appropriate extent. PPE may include safety glasses, hard hats, respirators, gloves, durable pants, long-sleeved shirts, fire protection, and safety-toe shoes.

3.9.3 Environmental Consequences

Impacts on safety would be considered significant if the Proposed Action were to:

- Substantially increase risks associated with the safety of the local community, construction personnel, or USAF personnel.
- Introduce new health or safety risks for which Okaloosa County or USAF is not prepared or does not have adequate management and response plans in place.

3.9.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Under the North Alternative, short-term, minor, adverse impacts on safety would occur during construction. Impacts would result from exposure of workers to the inherent safety hazards associated with construction. Examples of such safety hazards include slips, trips, and falls; exposure to hot, cold, and wet conditions; biological hazards from poisonous plants and insects; and fire, mechanical, vision, noise, and respiratory hazards. Safety impacts on construction personnel would be dependent on construction times, activity levels, activity types, and length of construction period.

Due to the use of large, powerful, noisy pieces of equipment, construction is inherently dangerous. To minimize safety risks, safety standards required by OSHA, DoD, and USAF, and adherence to the management actions listed in **Section 4.3.9**, would be followed during construction. Workers would be required to wear appropriate PPE such as reflective vests, ear protection, safety-toe boots, hard hats, gloves, and other safety gear. To avoid safety impacts to the public, areas undergoing construction would be fenced and appropriately marked with signs and placards when required. Trucks, tractors, graders, and other heavy equipment used in construction would use roads appropriately and personnel would make all reasonable effort to protect the safety of the public.

Long-term, moderate, beneficial impacts on safety would result from implementation of the North Alternative. Pedestrians and cyclists would have a safe pathway, separated from U.S. 98,

which extends the length of the project area and connects with adjacent pathways. High-speed and leisure cyclists would be permitted to use all bicycle facilities within and adjacent to the project area, including bicycle lanes, paved shoulders, and the pathway. Based on the speed limit of U.S. 98 and narrow width and lack of protection of the bicycle lanes and paved shoulders, it is assumed many of the leisure cyclists would prefer to use the pathway. The location of the pathway outside the FDOT clear zone, to the extent possible, and the addition of safety devices such as safety barriers, bollards, and traffic control devices would improve safety for pedestrians and cyclists. Okaloosa County would coordinate with FDOT in the event the FDOT clear zone could not be avoided and a variance is required.

The pathway would include removable bollards where driveways intersect with the pathway to keep vehicles from entering/parking on the path. Signs would be posted along the pathway in select areas noting that parking on the pathway and outside of designated parking spaces is prohibited. Traffic control devices for the pathway (e.g., signs, signals, markings) would be selected and placed in accordance with FHWA's *Manual of Uniform Traffic Control Devices* (FHWA 2012). Additionally, the pathway would comply with Americans with Disabilities Act standards.

Long-term, negligible, adverse impacts on safety could result from the addition of the pathway users. As noted in **Section 1.2**, the pathway is expected to attract approximately 37,800 users annually. Pathway users could access the pathway by a variety of methods (e.g., directly from adjacent hotels and residences, indirectly from nearby hotels and residences, and indirectly via driving to the project area and using a parking lot). Pathway users traveling to and from the pathway could increase the number of vehicles, cyclists, and pedestrians on local roads and sidewalks, which could increase the potential for an accident. Additionally, it is anticipated that accidents on the pathway, such as a cyclist running into a pedestrian, could occur. However, in balance, the beneficial effects of the pathway would outweigh the adverse effects from the addition of the pathway users.

3.9.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Short-term, minor, adverse impacts on safety would occur during construction. Impacts would be identical to those described under the North Alternative. To minimize safety risks, safety standards required by OSHA, DoD, and USAF, and adherence to the management actions listed in **Section 4.3.9**, would be followed during construction. Construction workers would be required to wear appropriate PPE. To avoid safety impacts to the public, areas undergoing construction would be fenced and appropriately marked with signs and placards when required. Trucks, tractors, graders, and other heavy equipment used in construction would use roads appropriately and personnel would make all reasonable effort to protect the safety of the public.

Long-term, moderate, beneficial and long-term, negligible, adverse impacts on safety would occur and would be similar to those described under the North Alternative. However, the South Alternative would have additional long-term safety benefits associated with an upgraded ingress/egress (i.e., improved driveway) and associated safety features (e.g., safety barrier) for

West Jetties Parking (currently closed). The beneficial safety effects of the pathway would outweigh the adverse safety effects from the addition of pathway users.

3.9.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pathway would not be constructed and Okaloosa County and Eglin AFB safety trends and procedures would continue in their current state.

3.10 Socioeconomics

3.10.1 Definition of the Resource

Socioeconomics refers to the basic attributes and resources associated with the human environment and the economy, particularly characteristics of population and economic activity. There are several indicators of economic conditions for a specific geographic area, such as demographics, employment characteristics, and income, which provide key insights into socioeconomic conditions that might be affected by a proposed action. Data also identify employment by industry or trade and unemployment trends. Data on personal income in a region are used to compare the before and after effects of any jobs created or lost because of a proposed action. Data on industrial, commercial, and other sectors of the economy provide baseline information about the economic health of a region.

3.10.2 Affected Environment

OKALOOSA ISLAND AND EGLIN AFB

For the purpose of this analysis, the ROI is Okaloosa County. Data for the State of Florida are included for comparison.

Demographics. U.S. Census population data from 2010 and 2018 were used to analyze the spatial levels within Okaloosa County (see **Table 3-8**). The population of Okaloosa County has increased approximately 15 percent from 2010 to 2018, which is slightly greater than the estimated 13 percent increase for the State of Florida. There is an upward population trend for Okaloosa County and Florida (USCB 2019b).

Table 3-8. Population Data for 2010 and 2018

	Okaloosa County	Florida
2010 Population	180,825	18,804,580
2018 Population*	207,269	21,299,325
Percent Change	14.6%	13.3%

Source: USCB 2019b

Note: * The 2018 population data is based on estimates from the 2018 United States Census Bureau Population Estimates, which represent 1-year estimates from 2018 and are intended to provide a more precise estimate of current conditions across all spatial levels.

Economic Activity (Employment and Earnings). The estimated employed civilian population within Okaloosa County is 85,823 people (USCB 2017). As of 2017, the government workforce consisted of about 17,250 people within Okaloosa County (USCB 2017). In 2016, Eglin AFB

employed 22,226 military, civilians, and contractors; supported 37,172 military dependents and 14,443 USAF retirees; and generated 7,564 jobs (Eglin AFB 2019).

Table 3-9 presents the civilian workforce by industry of employment. The average household income for Florida was \$50,883 and \$59,955 in Okaloosa County (USCB 2017). The education, health, and social services industry employs the most people in Okaloosa County (16.9 percent). Other industries that have high employment within Okaloosa County include arts, entertainment, and recreation and retail trade.

Table 3-9. Employment Characteristics by Industry for 2013–2017

Industry	Okaloosa County	Florida
Civilian population 16 years old and over in the labor force	85,823	9,018,570
Percent Employed by Industry		
Agriculture, forestry, fishing, and hunting and mining	0.6%	1.0%
Construction	7.7%	7.1%
Manufacturing	4.6%	5.1%
Wholesale trade	1.6%	2.7%
Retail trade	12.7%	13.1%
Transportation and warehousing, and utilities	4.5%	5.2%
Information	1.0%	1.9%
Finance, insurance, real estate, and rental and leasing	6.9%	7.7%
Professional, scientific, management, administrative and waste management services	12.5%	12.9%
Education, health, and social services	16.9%	21.0%
Arts, entertainment and recreation	14.1%	12.3%
Other services (except public administration)	5.9%	5.3%
Public administration	11.0%	4.3%

Source: USCB 2017

Note: Numbers present in this table are percentages based on estimates from the 2013-2017 American Community Survey 5-year Estimates.

Tourism. Tourism is a major contributor to the economy of Florida. In 2017, 948,379 Florida jobs were supported by tourism, and an additional 219,000 jobs were supported by Florida’s tourism supply chain, making tourism the fifth largest employment industry in Florida for that year (Eglin AFB 2019). In 2018, Florida supported 127 million visitors who contributed \$85.9 billion to Florida’s economy (Visit Florida 2019). Tourism within Florida has continually increased yearly since 2010. In 2017, 22.6 million tourists visited Northwest Florida, spending \$8.7 billion and supporting 132,000 jobs in that area (Rockport Analytics 2019). Okaloosa County was ranked 11th for visitor spending among all Florida counties. As of 2012, there were 155 properties with

11,921 units offering accommodations to visitors in the Fort Walton Beach, Okaloosa Island, and Destin areas. Of those properties and units, approximately 31 percent of the properties were on Santa Rosa Island and accounted for 36 percent of the total units. Overall, Florida's tourism industry promotes a healthy job market, contributes to public education and government services by making up 13.4 percent of yearly Florida tax revenue, helps relieve the tax burden of Florida residents, and benefits Florida businesses (Rockport Analytics 2019).

As stated in **Section 1.2**, 5,775,175 residents and visitors used Florida's 547 miles of state trails and 110 miles of the Florida Greenway from 2016 to 2017. Per the FGTS Five-Year Strategic Plan for Economic Development, trails are an economic asset to the community, provide free recreation for people of all ages and fitness levels, and offer opportunities to study nature or local history. The trails within the FGTS attract many local and non-local visitors to the area, which benefits local businesses. Studies show that the longer a trail is the farther people will travel to visit it, the longer they will stay, and the more money they will spend. The project area is a gap in the 263-mile Great Northwest Coastal Trail Corridor and has been identified as a Land Trail Priority by the FDEP Office of Greenways and Trails (FDEP 2019d).

3.10.3 Environmental Consequences

Impacts on socioeconomics would be considered significant if changes associated with the Proposed Action substantially affected the local economy, employment, or economic stability in the region.

The impacts on socioeconomics are the same regardless of land ownership; therefore, the impacts for Okaloosa Island and Eglin AFB are described together.

3.10.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Under the North Alternative, short-term, minor, beneficial impacts on the local economy within the ROI would occur because of expenditures during the pathway construction. Construction of the pathway would provide temporary direct increases in income for local construction workers and indirect increases in retail trade revenues through the purchase of equipment, supplies, and materials. It is anticipated that construction work would be completed by the labor force within Okaloosa County, which includes approximately 6,600 construction workers. The construction workforce in the ROI would be sufficient to support the construction of the pathway. There would be no impact on population during the construction period because all construction personnel would be from the region.

Long-term, minor, beneficial impacts would occur on the local economy within Okaloosa County because of increased pedestrian and cyclist connectivity between Fort Walton Beach and Destin and increased accessibility to recreational facilities on Santa Rosa Island. Following completion of the pathway, pedestrians and cyclists would have safer and more reliable means for travelling throughout Santa Rosa Island. It is expected that the pathway would result in increased recreational facility use and an increase in pedestrian and cyclist movement throughout Santa Rosa Island, which in turn would benefit nearby hotels, restaurants, stores,

attractions/activities, parks, beach access areas, and the communities of Fort Walton Beach and Destin. A safe multi-use pathway could encourage minority and low-income populations as well as children and elderly members of the public who may not be comfortable with the current pedestrian and cyclist infrastructure to use the pathway and take advantage of the other recreational opportunities adjacent to the project area. The increased use of the pathway would positively contribute to the local economy, including the tourism industry of Florida.

3.10.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Socioeconomic impacts associated with construction of the pathway under the South Alternative would be identical to those described for the North Alternative.

3.10.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, existing socioeconomic conditions would remain the same as described in **Section 3.10.2**; therefore, no impacts would occur.

3.11 Environmental Justice

3.11.1 Definition of the Resource

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies' actions substantially affecting human health or the environment do not exclude persons, deny persons benefits, or subject persons to discrimination because of their race, color, or national origin. EO 12898 was created to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no groups of people, including racial, ethnic, or socioeconomic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, tribal, race, ethnicity, and the poverty status of populations near a proposed action. Such information aids in evaluating whether or not a proposed action would render vulnerable any of the groups targeted for protection in the EO.

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, directs federal agencies to identify and assess environmental health and safety risks to children, prioritize children's health, and ensure that federal standards take special risks to children into account. Children are considered to be more sensitive than the adult population to certain environmental risks including airborne toxins, safety in regard to construction and demolition, and noise. Activities occurring near areas that may tend to have a higher population of children than the typical residential areas at any given time, such as schools, churches, and recreation areas, may intensify potential risks.

As defined by CEQ, minority populations include the following: Black or African American, American Indian and Alaska Native, Asian, Native Hawaiian and Other Pacific Islander, and multi-race that includes one of the aforementioned races; and Hispanic or Latino (CEQ 1997).

Low-income populations are those whose household income is less than or equal to twice the federal poverty level, or threshold. For 2018, the federal poverty threshold for a two-person household under 65 years of age was \$16,889 (USCB 2019a).

3.11.2 Affected Environment

OKALOOSA ISLAND AND EGLIN AFB

For the purpose of this analysis, the ROI is Okaloosa County. Data for the State of Florida are included for comparison.

The percent minority population within Okaloosa County is 21.2 percent. The minority population within Florida is 24.3 percent. The percentage of families living below the poverty line in Okaloosa County is 8.3 percent, while the percentage of families living below the poverty line within Florida is 15.5 percent. The percentage of children (i.e., individuals under 18 years of age) living within Okaloosa County is 22.3 percent compared to 20.3 percent for Florida. The percentage of Hispanic or Latino populations in Okaloosa County is 8.7 percent compared to 24.7 percent in Florida. **Table 3-10** provides details on race, ethnicity, and poverty within Okaloosa County and Florida (USCB 2017).

Table 3-10. Race, Ethnicity, and Poverty Characteristics

Characteristic	Okaloosa County	Florida
Total Population	197,591	20,278,447
Under 18 Years of Age	22.3%	20.3%
Over 65 Years of Age	15.1%	19.4%
Percent Minority Populations		
White	78.8%	75.7%
Black or African American	9.8%	16.1%
American Indian and Alaska Native	0.6%	0.3%
Asian	2.9%	2.7%
Native Hawaiian or Other Pacific Islander	0.2%	0.1%
Other Race	3.4%	2.6%
Two or More Races	4.3%	2.5%
Hispanic or Latino	8.7%	24.7%
Poverty Characteristics		
Median Household Income	\$59,955	\$50,883
Families Living Below the Poverty Line	8.3%	15.5%

Source: USCB 2017

Note: Numbers presented in this table are based on estimates from the 2013–2017 5-year American Community Survey.

Santa Rosa Island is an area heavily trafficked by tourists and is subject to population and demographic fluctuations based on the tourist season. There are a limited number of permanent residents within Santa Rosa Island. Facilities on the island consist mostly of hotels, events

centers, recreation areas, and tourist attractions (including a boardwalk/shopping center and an adventure aquarium). There are no permanent or temporary residences within the project area on Eglin AFB; the only facilities include recreation areas and USCG Station Destin. Additionally, Santa Rosa Island is part of the National Park Service Gulf Islands National Seashore.

3.11.3 Environmental Consequences

The potential for disproportionate impacts on environmental justice populations are determined by comparing the percentage of the environmental justice population in the ROI with the percentage in the community of comparison. If the percentage of the environmental justice population within the ROI is greater than or equal to the percentage within the community of comparison, then disproportionate impacts on that population could be present if the Proposed Action has a potential to impact that population. However, if the percentage of the environmental justice population within the ROI is less than the percentage within the community of comparison, there would be no disproportionate impacts. The impacts on environmental justice are the same regardless of land ownership; therefore, the impacts for Okaloosa Island and Eglin AFB are described together.

3.11.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

As explained in **Section 3.11.2**, Okaloosa County has a lower percentage of minorities, families living below the poverty line, and Hispanic or Latino populations as compared to the State of Florida. The percentage of children living in Okaloosa County is roughly equal to the percentage in the State of Florida. As such, there would be no disproportionate impacts on environmental justice populations from the North Alternative.

3.11.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Identical to the North Alternative, there would be no disproportionate impacts on environmental justice populations from the South Alternative.

3.11.3.3 NO ACTION ALTERNATIVE

No disproportionate impacts on environmental justice populations would occur because Okaloosa County has a lower or equal percentage of environmental justice populations as compared to the State of Florida.

3.12 Water Resources

3.12.1 Definition of the Resource

Water resources include groundwater, surface water, wetlands, floodplains, and their relationship to water quality in the area of the Proposed Action. It also includes water quality programs that are enforced as part of water resources protection regulations. Evaluation of water resources examines the quantity and quality of the resource and its demand for various purposes.

Groundwater. Groundwater is water that collects or flows beneath the Earth's surface, filling the porous spaces in soil, sediment, and rocks. It is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. In Florida, groundwater originates from rain and is an essential resource often used for potable water consumption, agricultural irrigation, and industrial applications. Groundwater typically is described in terms of its depth from the surface, aquifer or well capacity, water quality, surrounding geologic composition, and recharge rate.

Groundwater resources and activities that could impact groundwater quality are regulated under FDEP's Groundwater Protection and Aquifer Protection Programs and include permitting and monitoring requirements for discharging to groundwater, including zones of discharge, wellhead protection areas, injection wells, and water wells (FAC Chapters 62-520–62-532). In addition, each water management district implements a Minimum Flows and Levels Program to ensure that water withdrawals for human use do not adversely affect Florida's water-dependent natural systems. Minimum Flows and Levels are applied in the water use permitting programs to ensure water withdrawals do not cause significant harm to water resources or the environment. Within the project area, the Northwest Florida Water Management District (NFWFMD) issues water use permits or consumptive use permits authorizing water use and withdrawal of specified amounts of water from groundwater and surface water sources (FAC Chapter 40A-2).

Surface Water. Surface water includes natural, modified, and constructed water confinement and conveyance features above groundwater that may or may not have a defined channel and discernable water flows. These features are generally classified as streams, springs, wetlands, natural and artificial impoundments (ponds and lakes), and constructed drainage canals and ditches. Because the project area occurs on a barrier island, surface water also includes surf zone, freshwater, marine waters, and the coastal zone.

Stormwater is an important component of surface water systems because of its potential to introduce sediments and other contaminants that could degrade lakes, rivers, and streams. Stormwater flows, which can be exacerbated by high proportions of impervious surfaces associated with buildings, roads, and parking lots, are important to the management of surface water. Stormwater systems provide the benefit of reducing sediments and other contaminants that would otherwise flow directly into surface waters.

The Clean Water Act (CWA) (33 USC §1251 et seq., as amended) establishes federal limits, through the National Pollutant Discharge Elimination System (NPDES) on the amounts of specific pollutants that are discharged to surface waters to restore and maintain the chemical, physical, and biological integrity of the water. An NPDES permit would be required for any change in the quality or quantity of wastewater discharge or stormwater runoff from construction sites where 1 or more acres would be disturbed.

Per Section 401 of the CWA, any applicant for a federal license or permit to conduct any activity, including the construction or operation of facilities that could result in any discharge into the navigable waters, is required to provide the licensing or permitting agency a certification from the state in which the discharge originates or will originate. In addition to supplying Section 401 water quality certification, Part IV, Management and Storage of Surface Waters, of Florida

Statutes Chapter 373, Water Resources mandates a state permitting process. Permitting under Florida Statutes Chapter 373 is administered by FDEP and NFWFMD. Within the project area, permitting is under the jurisdiction of FDEP in accordance with an operating agreement between the two agencies.

USEPA has delegated authority to the FDEP for the issuance of NPDES stormwater permits. The Florida NPDES stormwater program requires construction site operators engaged in activities that disturb 1 acre or more to obtain coverage under a Construction Generic Permit for storm water discharges from construction activities. Construction or demolition that necessitates a permit requires preparation of a Notice of Intent to discharge stormwater and a SWPPP that is implemented during construction. FAC Chapters 62-621 and 62-330 address NPDES permitting and Florida Environmental Resource Permits, respectively.

Energy Independence and Security Act (EISA) Section 438 (42 USC § 17094) establishes stormwater design requirements for federal construction projects that disturb a footprint greater than 5,000 square feet of land. Additional guidance is provided in the USEPA Technical Guidance on Implementing the Stormwater Runoff Requirements for Federal Projects under EISA Section 438.

Water quality standards are regulated by USEPA under the federal Safe Drinking Water Act (42 USC §§ 201, 300 et seq.) and the CWA. Section 303(d) of the CWA requires states to identify and develop a list of impaired water bodies where technology based and other required controls have not provided attainment of water quality standards. Section 305(b) of the CWA requires states to assess and report the quality of their water bodies. The state of Florida combined their 303(d) and 305(b) lists into one report referred to as the Integrated Report. The Integrated Report identifies water bodies that are impaired and do not meet designated uses, and it establishes total maximum daily loads for the pollutants of concern.

Water quality standards also are regulated by FDEP under the following FAC Chapters:

- 62-302 (Surface Water Quality Standards)
- 62-4 (Antidegradation policy in Rule 62-4.242)
- 62-303 (Impaired Waters Rule)
- 62-55 and 62-550 (Drinking Water Quality Standards)
- 62-604 (Wastewater).

Wetlands. Wetlands are an important natural system and habitat because of the diverse biologic and hydrologic functions they perform. These functions include water quality improvement, groundwater recharge and discharge, pollution mitigation, nutrient cycling, wildlife habitat provision, and erosion protection.

Wetlands are protected as a subset of waters of the United States under Section 404 of the CWA. The term “waters of the United States” has a broad meaning under the CWA and incorporates deepwater aquatic habitats and special aquatic habitats (including wetlands). The U.S. Army Corps of Engineers defines wetlands as “those areas that are inundated or saturated with ground or surface water at a frequency and duration sufficient to support, and that under

normal circumstances do support, a prevalence of vegetation typically adapted to life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas” (33 CFR § 328).

EO 11990, *Protection of Wetlands*, requires that federal agencies provide leadership and take actions to minimize or avoid the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. Federal agencies are to avoid new construction in wetlands, unless the agency finds there is no practicable alternative to construction in the wetland, and the proposed construction incorporates all possible measures to limit harm to the wetland.

DoD Instruction 4715.03, *Natural Resources Conservation Program*, includes requirements for the protection of natural resources, including wetlands, on land controlled by the DoD.

The Florida Environmental Resource Permit Program regulates projects in, on, or over wetlands or other surface waters. Dredge and fill of wetlands in Florida requires a CWA Section 404 permit and a Florida Environmental Resource Permit (FAC Chapters 62-312 and 346).

Floodplains. Floodplains are areas of low-level ground present along rivers, stream channels, large wetlands, or coastal waters. Such lands might be subject to periodic or infrequent inundation due to rain events. Floodplain ecosystem functions include natural moderation of floods, flood storage and conveyance, groundwater recharge, and nutrient cycling. Floodplains also help to maintain water quality and often are home to a diverse array of plants and animals. In their natural vegetated state, floodplains slow the rate at which the incoming overland flow reaches the main water body.

Flood potential is evaluated by the Federal Emergency Management Agency (FEMA), which defines 100-year and 500-year floodplains. The 100-year floodplain is the area that has a 1 percent chance of inundation by a flood event in a given year while 500-year floodplains have a 0.2 percent chance of inundation in a given year.

EO 11988, *Floodplain Management*, requires federal agencies to determine whether a proposed action would occur within a floodplain. This determination typically involves consultation of FEMA Flood Insurance Rate Maps, which contain enough general information to determine the relationship of a project area to nearby floodplains. EO 11988 directs federal agencies to avoid floodplains to the maximum extent possible wherever there is a practicable alternative.

3.12.2 Affected Environment

OKALOOSA ISLAND AND EGLIN AFB

Groundwater. The principal aquifer underlying the project area is the Floridan aquifer. The Upper and Lower Floridan aquifers are a thick sequence of Paleogene carbonate rock in the southeastern U.S., underlying the entire state of Florida. The Floridan aquifer is the primary source for domestic or public water supply for Okaloosa County (NFWMD 2012). The Floridan aquifer is a confined, deep, low-permeability aquifer. Water from the Floridan aquifer is the primary source because of its high quality water. Through much of the Florida panhandle, the

depth to the water table in the Floridan aquifer varies widely because of its confined nature and surface topography (Pratt et al. 1996).

The coastal area of Water Supply Planning Region II, which includes the project area, has been designated as a Water Resource Caution Area because of declining Floridan aquifer levels along the coast of Okaloosa County (NFWFMD 2012). This designation by the NFWFMD requires withdrawal permittees to implement water conservation measures and maximize their water use efficiency, and permittees are subject to increased water use reporting requirements. The designation also prohibits the use of the Floridan aquifer for nonpotable purposes (NFWFMD 2008). There are no drinking water wells within the project area.

Surface Water. Brackish ponds and many other small wetlands occur in the project area, but there are no natural surface freshwater bodies within the project area. After heavy rainfall, the ponds may become fresh for brief periods. Except for a few roadside ditches along U.S. 98, no well-developed drainages exist within the project area, but numerous coves and inlets may be found along the northern edge of the island. Depending on local topography, surface water drains into Choctawhatchee Bay, Santa Rosa Sound, or the Gulf of Mexico (see **Figures 2-2 through 2-5**). All coastal waters of the Gulf of Mexico were previously considered impaired for mercury in fish. However, FDEP expects that all marine waters will be delisted for mercury impairment in the near future due to implementation of a statewide management program (FDEP 2016). Portions of Choctawhatchee Bay are considered impaired due to fecal coliform, nutrient levels, bacteria, and/or iron (FDEP 2019e).

Marine surface waters near the project area include waters from the shoreline to the offshore extent of the littoral zone (3 NM offshore). Ocean water in the area typically has a salinity equal to or greater than 35 parts per thousand. Dissolved inorganic ions in Gulf of Mexico waters over the continental shelf include sodium, chlorine, magnesium, potassium, calcium, and phosphate (SAIC 1997). Turbidity, which refers to suspended materials in the water column that affect water clarity, generally decreases from nearshore to offshore, and bottom turbidity measurements tend to be higher than turbidity levels at the surface.

Wetlands. Wetlands occur throughout the project area. Due to the nature of the barrier island environment and the effects of storm surge, wetlands may shift or become covered with sand over short periods of time. Several types of wetlands may occur, including the following:

- Estuarine wetlands
- Salt marshes
- Inland wetlands
 - Basin wetlands
 - Depression marshes
 - Freshwater marshes.

The salt marsh community is found wherever tidal saltwaters have frequent access and where the direct wave action is limited. This community consists of narrow fringes along the northwestern margin and narrow bands along the intertidal areas of the island. Tree and shrub species are limited and usually consist of sea myrtle (*Baccharis halimifolia*), wax myrtle (*Myrica*

cerifera), and sea oxeye (*Borrchia frutescens*). Herbaceous species include common reed (*Phragmites australis*) and black needle rush (*Juncus roemerianus*). Soils associated with this community are level, poorly drained muck or sandy clay loams underlain by loamy sand (Eglin AFB 2019).

The majority of the wetlands are inland wetlands, which can be categorized as basin wetlands, depression marshes, and freshwater marshes. All of these wetland types have similar characteristics. They are characterized as shallow, closed basins with outlets present usually only in times of high water. They are composed of peat or sand substrate, are usually inundated, and have woody or herbaceous vegetation. Most of the wetlands in the project area are depression marshes. Depression marshes are shallow, generally seasonal, rounded depressions. These wetlands are dominated by plants tolerant of anaerobic substrate conditions (saturation or inundation for more than 10 percent of the growing season). Peaty soil accumulates in the deepest sections where water is most persistent. Herbaceous vegetation is often found in concentric zones (Eglin AFB 2019).

Some small, isolated freshwater marshes occur on Santa Rosa Island. These wetlands are usually found in low troughs and swales behind the dune line. Tree and shrub species are generally absent but may be found adjacent to the marshes. The vegetative community consists mostly of grasses, sedges, rushes, and other herbaceous plants. Maidencane (*Panicum hemitomom*) and beakrushes (*Rhynchospora* sp.) are the dominant plant species present. Soils are nearly level and are very poorly drained (Eglin AFB 2019).

Wetlands surveys were conducted in the project area on June 4, 2019. Some of the wetlands were classified as coastal interdunal swales. The wetlands associated with coastal interdunal swales are confined by coastal dunes to the south and U.S. 98 to the north (see **Figures 2-2 through 2-5**). There are 0.42 acre of wetlands within the North Alternative and 0.64 acre within the South Alternative. The project area has been impacted by previous road reconstruction activities following past tropical storms and hurricanes, including in some areas, the placement of large linear, gabion baskets underground and immediately adjacent to the roadway to prevent road scouring during major storm events. In addition, these areas continue to be impacted by maintenance equipment used for mowing as well as by activities associated with underground utilities. As a result, the soils within the project area have been compacted. Therefore, these natural interdunal swales can and do hold water for long enough periods to support a variety of wetland vegetation.

Floodplains. The entire project area occurs within the 100-year floodplain (also referred to as a Special Flood Hazard Area). The entire Florida panhandle coast is designated as Flood Zone V, which is a FEMA flood insurance rate zone corresponding to coastal floodplains subject to hazards from storm waves. The federal government allows development within Special Flood Hazard Areas as long as the development complies with local, state, and federal floodplain management ordinances (FEMA 2011).

3.12.3 Environmental Consequences

A proposed action could have significant impacts on water resources if it were to substantially affect water quality, reduce water availability, or reduce supply to existing users; endanger public health or safety by creating or worsening health or flood hazard conditions; threaten or damage unique hydrologic characteristics; overdraft groundwater basins; exceed the safe annual yield of water supply sources; or violate applicable laws or regulations that protect water resources. Evaluations must identify if the action is reasonable in scope, has suitable alternatives (where applicable), and if implementation of the action would result in a satisfactory result with respect to the purpose and need for the action.

The impacts on water resources are the same regardless of land ownership; therefore, the impacts for Okaloosa Island and Eglin AFB are described together.

3.12.3.1 NORTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Groundwater. Short- and long-term, negligible, direct, adverse impacts on surficial aquifers would be expected from implementation of the North Alternative. Short-term impacts on groundwater could occur from an accidental spill during construction or maintenance activities. Based on existing soil conditions (medium to high permeability sand and gravel), a spill or release of hazardous materials from equipment used during construction could impact groundwater quality. However, the potential for contaminant discharges from equipment to reach the groundwater table would be minimized through the use of appropriate BMPs and prompt response to discharges. All equipment would be maintained according to the manufacturer's specifications, and the potential for contamination to occur would be minimized through the implementation of Eglin AFB's or a project-specific SPCC Plan, as applicable.

Minor grading and surface paving associated with pathway construction would not be anticipated to intersect the local groundwater table, which is approximately 5 feet below ground surface. The Proposed Action would not entail the installation of new groundwater wells or increase the demand for potable water from existing groundwater wells. The wellhead protection zones around the existing groundwater wells would be respected. Because of the surficial nature of the Proposed Action, no effects on the Floridan aquifer would be anticipated.

Construction of the pathway could impact groundwater recharge from reduced recharge of the aquifer system. Surface water runoff would be attenuated during and following construction with the use of temporary or permanent drainage management features and standard practices in accordance with FDOT's 2019 *Standard Specifications for Road and Bridge Construction* and Eglin AFB Range Road Management Plan (USACE 1995) and a SWPPP. Implementation of BMPs, adherence to the management actions listed in **Section 4.3.10**, and conformance with EISA requirements would avoid or minimize impacts on groundwater resources within the project area. As a result, impacts on groundwater would be negligible.

Surface Water. Short- and long-term, minor, adverse, direct impacts on surface water could occur because of construction and operation of the pathway. Without implementation of proper

controls, blading and other ground disturbing activities could result in erosion and sedimentation creating suspended sediment loads in runoff and downstream surface waters. Proper grading techniques, implementation of standard BMPs and erosion and sediment controls, and adherence to the management actions listed in **Section 4.3.10** would minimize the transport of sediment to nearby surface waters.

The FDEP regulates earthwork activities that would alter, divert, impede, or otherwise change the flow of surface waters through the Florida Environmental Resource Permit Program. Stormwater controls and BMPs would be implemented in accordance with permit requirements and an Erosion and Sediment Control Plan, as applicable (FAC Chapter 62-330). The pathway would involve more than 9,000 square feet of impervious surface; therefore, a Florida Environmental Resource Permit would be required. Final design of the pathway would be necessary to determine whether a general permit (e.g., Minor Activities within Existing Rights-of-Way or Easements [FAC Chapter 62-330.447] or an individual permit (FAC Chapter 62-330.054) would apply.

Construction of the pathway and associated infrastructure, as well as maintenance and repair activities that disturb 1 acre or more, would be regulated under the FDEP Construction Generic Permit. Permit-required BMPs and a SWPPP would be implemented to minimize potential impacts on surface water. Additionally, construction of the pathway and associated infrastructure would involve an area greater than 5,000 square feet; therefore, the requirements of Section 438 of the EISA would apply. BMPs would be incorporated into the design of maintenance and repair activities to reduce the amount of stormwater runoff, promote ground infiltration, and reduce the potential for erosion. Stormwater would be managed in accordance with federal, state, and local requirements and the SWPPP and Erosion and Sediment Control Plan.

In addition to the identified direct impacts, the potential exists for indirect impacts on surface waters. Stormwater runoff from the project area discharges to water bodies (Choctawhatchee Bay and Santa Rosa Sound) that have a total maximum daily load allocation and are listed as impaired under Section 303(d) of the CWA. However, any increase in surface water runoff due to the Proposed Action would be attenuated with the use of temporary or permanent drainage management practices. It is anticipated that implementation of an effective SWPPP, standard construction practices, and adherence to the management actions listed in **Section 4.3.10** would prevent stormwater run-off from construction areas from entering surface waters. These measures would avoid or minimize any indirect adverse impacts on downstream Section 303(d)-listed, impaired waterways.

Wetlands. Short- and long-term, negligible, adverse, direct impacts on wetlands would occur from deposition of fill materials or increased sedimentation into wetlands. Most of the nearby wetlands would be avoided during design, but up to 0.42 acre of wetlands would be filled under the North Alternative. These wetlands are located along the proposed pathway and are unavoidable. There is no practicable alternative to construction in the wetland. However, pathway construction would be conducted in a manner such that activities would have negligible impacts on wetlands to the maximum extent practical. Pertinent local, state, and federal permits

would be obtained, as needed, for the proposed activities including work that could occur in jurisdictional drainages, waterways, or wetlands. Mitigation requirements, if any, would be determined during permitting. Permit-required controls and BMPs would be implemented to minimize impacts. Consultation with FDEP and U.S. Army Corps of Engineers, as appropriate, would be taken to minimize wetland impacts and identify potential avoidance, minimization, and conservation measures. Due to the impact on wetlands, a CWA Section 404 permit and a Florida Environmental Resource Permit would be obtained prior to construction, as well as maintenance and repair actions that would impact wetlands.

Floodplains. The North Alternative would result in short- and long-term, minor, adverse impacts on the 100-year floodplain. The entire project area (18 acres) is within the 100-year floodplain. Construction within the floodplain is unavoidable because the entire Florida panhandle coast is within the floodplain. Therefore, there are no practicable alternatives for avoiding the floodplain. The North Alternative would not situate critical infrastructure within the floodplain and would not affect existing flood heights or floodplain limits.

3.12.3.2 SOUTH ALTERNATIVE

OKALOOSA ISLAND AND EGLIN AFB

Groundwater. Short- and long-term, negligible, direct, adverse impacts on surficial aquifers would be expected from implementation of the South Alternative. Impacts on groundwater and associated avoidance measures would be similar to those described for the North Alternative.

Surface Water. Short- and long-term, minor, adverse, direct impacts on surface water could occur because of construction and operation of the pathway under the South Alternative. Impacts on surface water and associated avoidance measures would be similar to those described for the North Alternative.

Wetlands. Short- and long-term, negligible, adverse, direct impacts on wetlands would occur from deposition of fill materials or increased sedimentation into wetlands. Most of the nearby wetlands would be avoided during design, but up to 0.64 acre of wetlands would be filled under the South Alternative. These wetlands are located along the proposed pathway and are unavoidable. There is no practicable alternative to construction in the wetland. Impacts on wetlands and associated avoidance measures would be similar to those described for the North Alternative.

Floodplains. The South Alternative would result in short- and long-term, minor, adverse impacts on the 100-year floodplain. The entire project area (16 acres) is within the 100-year floodplain. Construction within the floodplain is unavoidable because all of the Florida panhandle coast is within the floodplain. Therefore, there are no practicable alternatives for avoiding the floodplain. The South Alternative would not situate critical infrastructure within the floodplain and would not affect existing flood heights or floodplain limits.

3.12.3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the pathway would not be constructed along U.S. 98; therefore, no impacts on groundwater, surface water, wetlands, or floodplains would occur.

3.13 Cumulative Effects

Federal regulations implementing NEPA (40 CFR §§ 1500–1508) require that the cumulative effects of a proposed action be assessed. CEQ regulations implementing the procedural provisions of NEPA define cumulative effects as follows (40 CFR § 1508.7):

“The impact on the environment, which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”

A cumulative effect could be additive (i.e., the net adverse cumulative effect is strengthened by the sum of individual effects), countervailing (i.e., the net adverse cumulative effect is less because of the interaction between beneficial and adverse individual effects), or synergistic (i.e., the net adverse cumulative effect is greater than the sum of the individual effects). Cumulative effects could result from individually minor, but collectively significant, actions that take place over time. Cumulative effects are most likely to occur when there is an overlapping geographic location and a coincidental or sequential timing of events.

3.13.1 Projects Considered for Potential Cumulative Effects

This section discusses the potential for cumulative effects caused by implementation of the Proposed Action when combined with other past, present, and reasonably foreseeable future actions occurring near the project area.

Cumulative effects may occur when there is a relationship between a proposed action and other actions expected to occur in a similar location or during a similar period. This relationship may or may not be obvious. The effects may be incremental and result in cumulative impacts. Actions overlapping with or in proximity to the Proposed Action can reasonably be expected to have more potential for cumulative effects on “shared resources” than actions that may be geographically separated. Similarly, actions that coincide in the same timeframe tend to offer higher potential for cumulative effects.

In this EA, Okaloosa County and USAF have made an effort to identify actions on or near the project area that are under consideration and in the planning stage. These actions are included in the cumulative effects analysis to the extent that details regarding such actions exist and the actions have potential to interact with the Proposed Action. Although the level of detail available for future actions varies, this approach provides the decision maker with the most current information to evaluate the consequences of the alternatives. This EA addresses cumulative effects to assess the incremental contribution of the Proposed Action to impacts on affected resources from all factors.

3.13.1.1 PAST ACTIONS

Past actions are those actions, and their associated impacts, that occurred within the geographical extent of cumulative effects and have shaped the current environmental conditions of the project area. CEQ regulations do not require the consideration of the individual effects of all past actions to determine the present effects of past actions. The effects of past actions are

now part of the existing environment and are included in the affected environment described in **Sections 3.1** through **3.12**.

3.13.1.2 PRESENT AND REASONABLY FORSEEABLE FUTURE ACTIONS

Actions considered for cumulative impacts with the Proposed Action include commercial and recreational activities, the Brooks Bridge Replacement, ongoing Santa Rosa Island Range Complex development, and ongoing training activities at Eglin AFB. Brief discussion on these projects follows. To minimize the potential for impacts, management actions (see **Section 4**) would be implemented and any required mitigation measures would be applied.

Commercial and Recreational Activities. The Okaloosa Island community east of Eglin AFB is a 1.7-square mile tourist-oriented community that contains commercial, residential, and recreational areas such as hotels, resorts, restaurants, the Emerald Coast Convention Center, shopping areas, condominiums, tourist attractions, and parks. There are several public beach access points within the project area that provide recreational access to the coast. Tourism in the area has the potential to increase, which would result in ongoing commercial and recreational activity.

Brooks Bridge Replacement. A Final EA and FONSI were approved in April 2019 for replacement of Brooks Bridge, which carries U.S. 98 over Santa Rosa Sound and the Gulf Intracoastal Waterway in Okaloosa County. The proposed touch downs for the bridge are Perry Avenue on the west end of the bridge in Fort Walton Beach, and near Santa Rosa Boulevard, extending to Pier Road, on the east end of the bridge. The proposed bridge includes a barrier-protected 12-foot multi-use path in both directions. Construction is funded to begin in calendar year 2021 (FDOT Fiscal Year 2022). The bridge would be designed to meet USCG navigational clearances of 65 feet vertically and 150 feet horizontally and include the construction of stormwater treatment facilities (FDOT 2019d).

Santa Rosa Island Range Development. The Santa Rosa Island Range consists of 4,760 acres of Santa Rosa Island, which includes a 4-mile strip east of Fort Walton Beach, and a restricted-access 13-mile section extending west to Navarre Beach. A Range EA was prepared in March 2019 to analyze the proposed update to Eglin AFB's maximum annual levels of munitions testing and training activities on Santa Rosa Island, which include 15 test sites for surface-to-air missile testing, electronic countermeasures and electronic systems testing, open-air hardware-in-the-loop testing, ground testing and training, surf zone testing and training, and laser use. The project also includes authorizing potential future construction, demolition, storm cleanup, and maintenance activities as necessary throughout the range (Eglin AFB 2019).

3.13.2 Cumulative Effects on Resources

The following analysis examines the cumulative effects on the environment that would result from the incremental impacts of the Proposed Action, in addition to other past, present, and reasonably foreseeable future actions. This analysis assesses the potential for an overlap of impacts with respect to project schedules or affected areas. This section presents a qualitative analysis of the cumulative effects. Cumulative effects for the action alternatives analyzed in this EA are identical unless otherwise stated.

Air Quality. Short-term, minor, adverse cumulative impacts on air quality may occur from construction associated with the Proposed Action and cumulative projects and would be dependent on construction periods. If, for instance, the construction of the pathway overlapped with bridge construction, construction dust or equipment exhaust would be additive and would lead to cumulative air quality effects. Although the General Conformity Rule does not apply to the Proposed Action, estimated emissions of all criteria pollutants are well below the *de minimis* level. The Proposed Action and cumulative projects would not contribute appreciably to long-term, adverse cumulative impacts on air quality because ongoing maintenance and repair actions would be limited.

Biological Resources. Short-term, minor, adverse cumulative impacts from the Proposed Action and Brooks Bridge replacement would occur because of temporary soil disturbance and increase in noise levels due to construction, which may affect vegetation and wildlife. Furthermore, designated critical habitat for the Gulf sturgeon occurs within the Santa Rosa Sound. Construction on the Brooks Bridge could cause short-term, direct, adverse impacts on this species from increased underwater noise (i.e., drilling for foundations and demolition of existing structures). To minimize impacts from construction, activities should occur outside of the Gulf sturgeon migration (March to May). Long-term, minor, adverse cumulative impacts would occur on biological resources habitats from the Proposed Action and cumulative projects. Intermittent maintenance activities could result in minor erosion and sedimentation events and could affect vegetation and small, less-mobile species.

Long-term, intermittent, minor, adverse cumulative impacts on wildlife would result from temporary increases in the ambient noise environment during maintenance and repair activities and cumulative actions. Vegetation and wildlife (including aquatic species) near the Proposed Action, Brooks Bridge replacement, and proposed additional training activities on Santa Rosa Island could be displaced or removed; or undergo habitat loss, alteration, and degradation from proposed activities. Population growth and increased tourism on Santa Rosa Island could potentially cause an increase in recreational activity that could disturb wildlife and impact habitat used by sensitive species (e.g., piping plover wintering sites). Long-term, minor, beneficial impacts on vegetation and wildlife would result from reduced erosion from stabilized areas; the addition of fencing for Eglin AFB protective buffers and areas; and reduced erosion from replacement of Brooks Bridge. Biological resources occurring on Eglin AFB property are actively managed to protect sensitive species and habitat.

Cultural Resources. Because no cultural or historic properties are located within or adjacent to the project area, no cumulative impacts would be expected.

Geological Resources. Short- and long-term, minor, adverse cumulative impacts on geological resources would occur from the Proposed Action and cumulative projects. Intermittent, minor impacts on soils would occur from disturbance and erosion from the use of vehicles and equipment during pathway and bridge construction and maintenance activities. Soils also could be impacted from the testing and training activities that occur throughout Santa Rosa Island. Soil disturbance would not be expected to exceed individual project boundaries and would not result in significant impacts on geological resources because BMPs, erosion and sediment

controls, and other management measures would be implemented. Long-term, minor, beneficial cumulative impacts may occur because of ground and shoreline stabilization measures as part of the Proposed Action and the Brooks Bridge replacement project.

Hazardous Materials and Wastes. Long-term, intermittent, negligible, adverse cumulative impacts from the Proposed Action and cumulative projects would occur from the temporary use of hydraulic fluids and petroleum products during operation and maintenance of the pathway. Additionally, intermittent, adverse impacts could occur if pesticides and herbicides are used under the cumulative projects. Construction crews and operations and maintenance teams would implement BMPs to reduce the potential for spills and ensure quick clean ups. Hazardous materials and wastes would be handled, stored, and disposed of in accordance with applicable regulations and approved plans.

Infrastructure and Transportation. Short- and long-term, intermittent, minor, adverse cumulative impacts on stormwater drainage infrastructure could occur from increased sedimentation and erosion during construction, maintenance, and repair activities for the pathway and bridge; however, impacts would be minimized through the use of BMPs.

Long-term, intermittent, minor, adverse cumulative impacts on transportation could result from temporary road closures, reduced mobility, or partially or fully blocked access roads from maintenance and repair activities within the area. Long-term, minor, beneficial cumulative impacts would occur from the pathway and bridge replacement, which would improve pedestrian and cyclist travel along U.S. 98 on Santa Rosa Island and into Fort Walton Beach and Destin.

Land Use. Short-term, negligible, adverse impacts would occur on land use and access to recreation areas because of the Proposed Action and cumulative projects from temporary road closures or temporarily closures of existing parking areas while the pathway and upgraded parking areas are constructed. Closures within the project area would be temporary and infrequent, and other areas would remain open for public access. Long-term, negligible, adverse cumulative impacts on land use would occur from the Proposed Action and cumulative projects. The Proposed Action would not result in changes to the type or extent of land use. However, the Brooks Bridge replacement project would require conversion of up to 7.52 acres of residential, commercial, county-owned, and Eglin AFB-owned lands to transportation right-of-way (Okaloosa Island) or easement (Eglin AFB); an impact FHWA considers insignificant. Areas of Eglin AFB within Santa Rosa Island that are open to the public and used for recreation could be closed temporarily during pathway construction and maintenance and repair activities, restricting certain recreational opportunities during the time of closure.

Noise. Short-term, minor, adverse cumulative impacts on the noise environment could occur from the Proposed Action and cumulative projects because the pathway construction period and the Brooks Bridge construction period have the potential to overlap. In which case, noise generated from Brooks Bridge replacement would add to the noise generated from the Proposed Action and the existing noise environment. Noise from military testing and training operations on Santa Rosa Island could coincide with the Proposed Action and cumulative

projects, which would result in short-term, intermittent, cumulative impacts on noise within the area.

Safety. Short- and long-term, intermittent, negligible, adverse impacts on safety would occur from implementation of the Proposed Action and cumulative projects. Testing and training activities associated with the Santa Rosa Island Range Development project could potentially cause a safety risk to the public. For actions occurring on Eglin AFB with safety risks, procedures are in place to minimize or eliminate risks to the public. Such measures include the designation of areas as temporarily or permanently “restricted” or “closed” to the public. Any temporary closure would be infrequent and of short duration, and would therefore not likely result in significant cumulative safety impacts.

Socioeconomics. Short-term, minor, beneficial cumulative impacts would occur from the Proposed Action and cumulative projects because construction and demolition would temporarily benefit the local economy and increase local employment levels. The pathway and Brooks Bridge replacement project would result in long-term, minor, beneficial cumulative impacts on socioeconomics in the area because of increased pedestrian and cyclist connectivity between Fort Walton Beach and Destin, and increased access to recreational facilities on Santa Rosa Island.

Environmental Justice. No disproportionate impacts on environmental justice populations would occur from the Proposed Action and cumulative projects because Okaloosa County has a lower or equal percentage of environmental justice populations as compared to the State of Florida.

Water Resources. Long-term, minor, adverse cumulative impacts on water resources could occur from the Proposed Action and cumulative projects. Demolition, construction, and maintenance activities have the potential to deposit fill materials or increase sedimentation in groundwater and surface water. The cumulative increase in impervious surfaces from the pathway and cumulative projects would be a minor contribution in the context of the entire watershed but could be noticeable on a localized level. The incorporation of BMPs and appropriate design strategies would be expected to reduce impacts on groundwater and surface water. Additionally, long-term, minor, adverse impacts would occur on wetlands as 0.89 acre would be lost because of the Brooks Bridge replacement. No further long-term impacts on wetlands or impacts on the 100-year floodplain would be anticipated.

3.13.3 Irreversible and Irretrievable Commitment of Resources

NEPA requires the identification of irreversible and irretrievable commitment of resources that would be involved in the implementation of a proposed action. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the effects that the uses of these resources could have on future generations. Irreversible effects primarily result from the use or destruction of specific resources (e.g., energy and minerals) that cannot be replaced within a reasonable timeframe. Irretrievable resource commitments involve the loss in value of an affected resource that cannot be restored because of a proposed action (e.g., extinction of a threatened or endangered species or the disturbance of a cultural site).

Environmental consequences from the Proposed Action are considered short-term and temporary. Construction of the pathway would require consumption of materials typically associated with road construction (e.g., asphalt, fencing, and metal). Okaloosa County and Eglin AFB do not expect the amount of these materials used to significantly decrease the availability of these resources. In the long-term, small amounts of nonrenewable resources would be used such as petroleum products during maintenance activities; however, these amounts would not be appreciable and are not expected to affect the availability of these resources.

4. Management Practices

The following is a list of regulations, plans, permits, and management actions associated with the Proposed Action. The USAF Environmental Impact Analysis Process for this EA identified the need for these requirements, and Eglin AFB cooperated to develop them. These requirements are, therefore, considered to be part of the Proposed Action and would be implemented through the Proposed Action's initiation.

4.1 Plans

The following plans would be followed or required for the Proposed Action:

- *FDOT Design Manual*
- *FDOT Standard Plans for Road and Bridge Construction*
- *FDOT Standard Specifications for Road and Bridge Construction*
- *Florida Erosion and Sediment Control Designer & Reviewer Manual*
- *FDOT Safety and Loss Prevention Manual*
- *FDOT 2018 Highway Safety Plan*
- *FHWA Manual of Uniform Traffic Control Devices*
- *FDEP FGTS Plan*
- *SWPPP (FAC Chapter 62-621.300)*
- *Eglin AFB ICRMP*
- *Eglin AFB Integrated Natural Resources Management Plan*
- *Eglin AFB Integrated Solid Waste Management Plan*
- *Eglin AFB Hazardous Waste Management Plan*
- *Eglin AFB SPCC Plan.*

4.2 Regulations and Permits

The following regulations and permits would be followed or required for the Proposed Action:

- Section 404 CWA Permit for dredge and fill of wetlands and waters of the United States (33 USC §§ 1251–1376)
- Environmental Resource Permit for dredge and fill of wetlands (FAC Chapters 62-312 and 346)
- State of Florida Construction Generic Permit for storm water discharges from construction activities (FAC Chapter 62-621.300)
- Base Civil Engineering Work Clearance Request, AF Form 103
- CZMA Consistency Determination (Florida Statutes, Chapter 380, Part II)
- NHPA Section 106 consultation with the Florida SHPO (16 USC § 470)
- ESA Section 7 consultation with the USFWS and NMFS (16 USC § 1536)
- Occupational Safety and Health Act (29 USC § 651)
- Other permits and authorization through FDOT and Okaloosa County, as needed.

4.3 Management Actions

Under the Proposed Action, Okaloosa County would be responsible for implementing the following management actions. The portions of the project area (i.e., Eglin AFB or Okaloosa Island) where these management actions apply is provided in parenthesis after each management action.

4.3.1 Air Quality

- Application of water sprays, revegetation of disturbed areas, and use of geotextiles would be utilized as needed to minimize fugitive particulate emissions during ground-disturbing activities in accordance with the *Florida Erosion and Sediment Control Designer & Reviewer Manual* and *Standard Specifications for Road and Bridge Construction*. (Applies Eglin AFB and Okaloosa Island.)
- All construction equipment would be maintained in proper working condition according to the manufacturer's specifications; vehicles would be maintained and inspected on a weekly basis in order to ensure good operating conditions. (Applies within Eglin AFB and Okaloosa Island.)

4.3.2 Biological Resources

- Prior to initiation of construction, construction personnel must receive an Eglin AFB NRO-approved environmental briefing and user groups will review the Santa Rosa Island Environmental Guidebook. A record of these briefings will be included in Eglin AFB's annual report. (Applies within Eglin AFB.)
- Surveys would be required before and after construction activities that may affect protected species or sensitive habitat. (Applies within Eglin AFB.)
- Design plan measures to help prevent and control dissemination of invasive species including: the prohibition of natural hay or straw bales; requirements for sod and fill material inspection; and certification from the Department of Agriculture and Consumer Services, Division of Plant Industry, stating that the sod, mulch, and fill materials are free from noxious weeds, including soda apple and cogon grass prior to incorporation into the project. (EO 13112, FAC Chapter 5B-57, and FDOT *Standard Specifications for Road and Bridge Construction*) (Applies within Eglin AFB and Okaloosa Island.)
- Only certified weed-free vegetative material would be used if brought in from off Santa Rosa Island. (Applies within Eglin AFB and Okaloosa Island.)
- Vehicles/equipment would be washed before transport onto Santa Rosa Island. (Applies within Eglin AFB and Okaloosa Island.)
- Selection of native species for any new plantings on the island would be coordinated with the Eglin AFB NRO. (Applies within Eglin AFB.)
- In accordance with Eglin AFB and FDOT Wildlife Guidelines, all equipment staging and storage areas would be intentionally sited so as to minimize disturbance on any listed plant or animal species or their respective habitat. Per Eglin AFB and FDOT regulations, information signs would be posted in active construction areas alerting crews to the potential presence of protected species. Contractors would familiarize work crews with the appearance of potential protected species and instruct work crews not to disturb

these species. Other safeguards such as predator-proof waste containers would be utilized during construction. Work crews would be instructed to stop work if protected animal species are encountered and to only resume work once the species leave the area. Certain species or activities, such as nesting within or near the project area, may require further consultation with the FDOT District Environmental Administrator, Eglin AFB NRO, FWC, or USFWS. (Applies within Eglin AFB and Okaloosa Island.)

- In compliance with sea turtle-friendly lighting requirements, low-pressure sodium lights and/or low frequency light colors (e.g., red and amber) would be used. All lights would be shielded from the beach and directed landward. (Applies within Eglin AFB and Okaloosa Island.)
- All construction personnel must stay within the project area while working. (Applies within Eglin AFB.)
- No nighttime construction or maintenance would occur during sea turtle nesting season (May 1 through October 31). (Applies within Eglin AFB and Okaloosa Island.)
- Areas of known sea turtle nesting would be avoided or an appropriate buffer must be posted. (Applies within Eglin AFB and Okaloosa Island.)
- Several shorebird species occur on Santa Rosa Island at various locations and times of the year. Critical habitat for piping plover would be avoided, as well as nests of other species, to ensure nesting birds are not disturbed. Shorebird surveys and monitoring is routinely conducted by Eglin AFB NRO personnel during the nesting season (March 1 to August 31), but these surveys are not comprehensive and all nests may not be located. Additional surveys may be required for specific activities and would be coordinated with the Eglin AFB NRO. Shorebird nests with the potential to be damaged or disturbed by mission activities must be marked and avoided. (Applies within Eglin AFB.)
- Coordinate with the Eglin AFB NRO prior to conducting construction, demolition, storm cleanup, or maintenance activities. (Applies within Eglin AFB.)
- Disturbance of locations with perforate lichen would be prohibited. Note that no perforate lichen were identified within the Eglin AFB portion of the project area during a lichen survey conducted on June 4, 2019. (Applies within Eglin AFB and Okaloosa Island.)
- Upon locating a dead, injured, or sick individual of an endangered or threatened species within the project area, initial notification must be made to the USFWS Law Enforcement Office in Tallahassee and the FWC at 888-404-3922. Additional notification must be made to the USFWS Ecological Services Field Office at Panama City at 850-769-0552. Care should be taken in handling sick or injured individuals and in the preservation of specimens in the best possible state for later analysis of cause of death or injury. (Applies within Eglin AFB and Okaloosa Island.)

4.3.3 Cultural Resources

- Should archeological material be inadvertently discovered during construction, all actions in the immediate vicinity would cease and efforts would be taken to protect the archeological site find from further impact as detailed in the provisions for unanticipated discoveries in the Eglin AFB *ICRMP*. (Applies within Eglin AFB.)

4.3.4 Geological Resources

- FDOT site design plans and permits would include site-specific management requirements for erosion and sediment control BMPs such as silt fencing, sand bags, rock bags, sediment traps, sediment basins, synthetic bales, floating and staked turbidity barriers, application of water sprays, revegetation of disturbed areas, and use of geotextiles, as needed. (FAC Chapters 62-621 and 62-346, and FDOT *Standard Specifications for Road and Bridge Construction*) (Applies within Eglin AFB and Okaloosa Island.)
- Stormwater management controls, inspections, and required remedial actions would be implemented as necessary in accordance with the project SWPPP. (FAC Chapter 62-621.300) (Applies within Eglin AFB and Okaloosa Island.)
- Construction activities would be sequenced to limit length of soil exposure. (Applies within Eglin AFB and Okaloosa Island.)
- Areas of existing vegetation that would not be disturbed by construction activities would be marked and identified. (Applies within Eglin AFB.)
- Digging without authorization from 96 Civil Engineer Group/Civil, Environmental and Infrastructure Engineering personnel is prohibited on Santa Rosa Island. (Applies within Eglin AFB.)

4.3.5 Hazardous Materials and Wastes

- Transport, storage, use, and disposal of hazardous materials and wastes should be coordinated with 96 Civil Engineer Group/Civil, Environmental and Infrastructure Engineering personnel and disposed of appropriately according to regulations and Eglin AFB *Hazardous Waste Management Plan*. (Applies within Eglin AFB.)
- Hazardous materials are to be properly managed in accordance with all applicable environmental compliance regulations and plans. (Applies within Eglin AFB and Okaloosa Island.)
- Immediately notify the Eglin AFB Environmental Restoration Section in the event soil that is discolored or has a chemical odor or unusual debris is encountered. (Applies within Eglin AFB.)
- Construction debris generated on Santa Rosa Island would be managed in accordance with AFI 32-7042, *Waste Management*, and Eglin AFB's *Integrated Solid Waste Management Plan*. (Applies within Eglin AFB.)
- Refueling of machinery would be completed in compliance with Eglin AFB's or a project-specific SPCC Plan, as applicable, and all vehicles would have drip pans beneath them during storage to contain minor spills and drips. (Applies within Eglin AFB.)
- No refueling or storage of heavy equipment would take place within 100 feet of any drainage. (Applies within Eglin AFB and Okaloosa Island.)
- Okaloosa County would manage the storage, use, and disposal of construction materials in accordance with current practices and management schemes. Materials would be stored in containers that meet federal, state and local requirements. Secondary containment systems would be employed as necessary to prevent or limit accidental spills. (Applies within Eglin AFB and Okaloosa Island.)

4.3.6 Infrastructure and Transportation

- Coordination with all utility providers would be required prior to any ground-disturbing activities in an effort to minimize potential conflicts between utility providers. (Applies within Eglin AFB and Okaloosa Island.)

4.3.7 Land Use

- Provide advanced notice to the public of temporary restricted access and closures via the public access map published on the Eglin AFB iSportsman website (<https://eglin.isportsman.net>). (Applies within Eglin AFB.)

4.3.8 Noise

- Construction and demolition would occur primarily during normal weekday business hours. (Applies within Eglin AFB and Okaloosa Island.)
- Heavy equipment mufflers would be properly maintained and in good working order. (Applies within Eglin AFB and Okaloosa Island.)
- Construction and demolition personnel, and particularly equipment operators, would don adequate personal hearing protection to limit exposure and ensure compliance with Air Force Occupational Safety and Health Standard 48-20. (Applies within Eglin AFB.)

4.3.9 Safety

- The Occupational Safety and Health Act (29 USC § 651) specifies the amount and types of training required for workers, standard work protocols and procedures, the use of protective equipment, the implementation of engineering controls, and maximum exposure limit for workplace stressors. (Applies within Eglin AFB and Okaloosa Island.)
- The FDOT *Safety and Loss Prevention Manual (2018)* addresses jobsite safety and includes items such as safe work practices, protective equipment, and incident reporting and investigation procedures. (Applies within Eglin AFB and Okaloosa Island.)
- The FDOT *2018 Highway Safety Plan* defines a system and process for managing the roadway system to achieve the highest level of highway safety. (Applies within Eglin AFB and Okaloosa Island.)

4.3.10 Water Resources

- Relocation of drinking water and wastewater infrastructure would be coordinated with local utility service providers and the 96th Range Group to ensure no conflict or damage is experienced. (Applies within Eglin AFB.)
- Stormwater management controls, inspections, and required remedial actions, as necessary, would occur in accordance with the project SWPPP. (FAC Chapter 62-621.300) (Applies within Eglin AFB and Okaloosa Island.)
- The direct release of chemicals or metals into water bodies or wetlands is prohibited. (Applies within Eglin AFB and Okaloosa Island.)

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A

Agency Coordination and
Public Involvement



Cultural Resource Assessment Survey and Consultation Letter to Florida SHPO



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 96TH TEST WING (AFMC)
EGLIN AIR FORCE BASE FLORIDA

FEB 27 2020

Maria D. Rodriguez
Chief, Environmental Management Branch
96 CEG/CEIE
501 DeLeon Street, Suite 101
Eglin AFB FL 32542-5105

Timothy A. Parsons, Division Director
State Historic Preservation Officer
Division of Historic Resources
R.A. Gray Building
500 South Bronough Street
Tallahassee FL 32399-0250

Re: Phase I Archaeological Survey (SR 30), Eglin Air Force Base (AFB), Okaloosa County, Florida
(CR-19-0006)

Dear Mr. Parsons

Enclosed with this letter is a copy of the report, *Cultural Resource Assessment Survey for the State Road 30 (US 98) Bridge to Bridge Multi-Use Path, Okaloosa County, Florida* (CR-19-0006) produced by Search, Inc., January 2020. This work was carried out as part of Eglin's ongoing effort to identify historic properties, in accordance with Section 106 of the National Historic Preservation Act.

A Phase I cultural resource assessment survey in support of a proposed multi-use path to be constructed within the existing right-of-way of State Road (SR) 30 (US 98) beginning approximately one-half mile east of Brooks Bridge and abutting the southwestern end of the Destin Bridge in Okaloosa County, Florida was carried out in August of 2019. The project included one survey area encompassing a total of 103 acres mostly owned by Eglin AFB. The project is funded by Okaloosa County.

The project Area of Potential Effects (APE) was developed to consider any visual, audible and atmospheric effects that project may have on historic properties. The archaeological and architectural survey included the entire APE. The archaeological testing included pedestrian archeological survey and subsurface testing within the existing SR 30 right-of-way. Subsurface testing was limited due to the presence of ground disturbance from underground utilities. Previously identified archaeological sites within the area included (8OK00031) overlapping the APE and two archaeological sites adjacent to the current right-of-way but outside the APE (8OK00406 and 8OK02239). Four shovel tests were excavated within the vicinity of the previously recorded archaeological sites and all yielded no cultural material. No further archaeological work is recommended. No architectural resources were present within the APE, therefore no further architectural work is recommended.

The APE has no cultural integrity and lacks significance. Due to lack of cultural material recovered and distance from previously recorded cultural resources, the proposed Bridge to Bridge Multi-Use path will not have an adverse effect to the sites. No further work is recommended.

Eglin AFB is again pleased to work with you in protecting the cultural resources of the base and the state of Florida. If your office does not respond within 30 days, it is assumed you concur with the determinations and recommendations presented here. My points of contact for this report are Ms. Catherine Nolan, 96 CEG/CEIEA, (850) 882-6020, catherine.nolan.3@us.af.mil, or Ms. Rhena Shreve, 96 CEG/CEIEA, rhena.shreve.1@us.af.mil, (850) 883-2102.

Sincerely


MARIA D. RODRIGUEZ, NH-04
Chief, Environmental Management Branch

3 Attachments:

1. Report, *Cultural Resource Assessment Survey for The State Road 30 (US 98) Bridge To Bridge Multi-Use Path* (Two copies)
2. Digital Report CD (Two copies)
3. Florida Division of Historical Resources (DHR) cultural resource assessment survey (CRAS)

Florida SHPO Response Letter



FLORIDA DEPARTMENT of STATE

RON DESANTIS
Governor

LAUREL M. LEE
Secretary of State

Maria D. Rodriguez
Chief, Environmental Management Branch
Elgin AFB, FL 32542-5105

March 31, 2020

RE: DHR Project File No.: 2020-0924, Received by DHR: March 4, 2020
Cultural Resource Assessment Survey for the State Road 30 (US 98) Bridge to Bridge Multi-Use Path, Okaloosa County, Florida

Dear Ms. Rodriguez:

Our office received and reviewed the above referenced project for possible effects on historic properties listed, or eligible for listing, on the *National Register of Historic Places* (NRHP). The review was conducted in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and its implementing regulations in *36 CFR Part 800: Protection of Historic Properties*.

In August of 2019 SEARCH, Inc. personnel performed a Phase I archaeological survey of 103 acres for a proposed multi-use path along State Road 30/U.S. 98 in Okaloosa County, Florida. The survey was conducted on behalf of HDR engineering, Inc., and Okaloosa County. Most of the project area is on property owned by Eglin Air Force base (AFB). SEARCH encountered no cultural resources within the area of potential effect (APE) during their investigation. One previously recorded site (8OK0031) partially overlaps the survey area, while two previously recorded sites (8OK0406 and 8OK2239) are adjacent to the State Road 30/U.S. 98 right-of-way, though outside the APE. No evidence of any of the previously recorded sites was observed during the survey. SEARCH concluded that this project will have no effect on cultural resources listed, or eligible for listing, in the NRHP, and recommends no additional work in the APE.

Based on the information provided, our office concurs with the presented survey results and recommendations. Further, we find the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

If I can be of any further help, or if you have any questions about this letter, please feel free to contact Clete Rooney at Cleteus.Rooney@dos.myflorida.com.

Sincerely,

A handwritten signature in blue ink that reads "Timothy A. Parsons" with "For" written below it.

Timothy A. Parsons, Ph.D.
Director, Division of Historical Resources
and State Historic Preservation Officer

Division of Historical Resources
R.A. Gray Building • 500 South Bronough Street • Tallahassee, Florida 32399
850.245.6300 • 850.245.6436 (Fax) • FLHeritage.com





PUBLIC NOTICE

POTENTIAL TO IMPACT WETLANDS/FLOODPLAINS EGLIN AFB, SANTA ROSA ISLAND, FLORIDA

On behalf of the U.S. Air Force, Okaloosa County is preparing an Environmental Assessment (EA) to consider the potential consequences to the human and natural environment associated with construction and operation of a paved multi-use pathway within the Florida Department of Transportation right-of-way along U.S. 98 on Santa Rosa Island from Pier Road to Marler Bridge. Some of the proposed pathway would be on Eglin Air Force Base. The purpose of the proposed action is to enable safe, two-way, multi-use travel along this portion of U.S. 98 in a way that promotes quality of life and economic development, improves community connectivity, and adds to the Florida Greenways and Trails System.

Construction is subject to Executive Order 11990, Protection of Wetlands, and Executive Order 11988, Floodplain Management, requirements and objectives because up to approximately 0.64 acre of wetlands and 18 acres of floodplains may be potentially impacted. U.S. Air Force requests advance public comment to determine if there are any public concerns regarding the project's potential to impact wetlands and floodplains. U.S. Air Force also would like to solicit public input or comments on potential project alternatives. The proposed project will be analyzed in a forthcoming EA and the public will have the opportunity to comment on the EA when it is released.

The public comment period ends on Nov. 29th, 2019. Please submit comments to Mr. Mike Spaits, 96 Test Wing Public Affairs, 101 W. D Ave, Room 238, Eglin AFB, Florida 32542 or email: michael.spaits@us.af.mil. Tel: 850-882-2836.

NF-1 1067094



B

Coastal Consistency
Determination



FEDERAL COASTAL ZONE MANAGEMENT ACT CONSISTENCY DETERMINATION

Introduction:

This document provides the State of Florida with the U.S. Air Force's determination of consistency for the Proposed Action, including both action alternatives, with the Florida Coastal Management Program under the Coastal Zone Management Act (CZMA) Section 307 and 15 Code of Federal Regulations (CFR) Part 930 sub-part C. The information in this Consistency Determination is provided pursuant to 15 CFR § 930.39 and Section 307 of the CZMA, 16 United States Code (USC) Part 1456, as amended, and its implementing regulation 15 CFR Part 930.

This Consistency Determination addresses the Proposed Action for the proposed bridge to bridge multi-use pathway on Santa Rosa Island, Florida. The project area includes portions of unincorporated Okaloosa County and Eglin Air Force Base (AFB) (**Figure 1**).

Proposed Federal Agency Action:

The Proposed Action is within the Florida Department of Transportation (FDOT) right-of-way (on Okaloosa Island) and easement (on Eglin AFB) and includes the construction and operation of a paved multi-use pathway along U.S. 98 on Santa Rosa Island. The pathway would be 4.3 miles long and 12 feet wide, and span between Pier Road (location of the east touchdown for the proposed Brooks Bridge replacement [separate project]) and Marler Bridge. The Proposed Action has a northern and a southern alternative that both include construction of the pathway, safety barriers where necessary, environmental fencing to protect Eglin AFB protective buffers and areas (protected species and habitat areas), and upgraded parking areas at three Eglin AFB-designated beach access points adjacent to the proposed pathway (**Figures 2 through 5**). The project area (construction area), including laydown areas (i.e., staging and storage of equipment and supplies), would be up to 40 feet wide along the proposed pathway; however, the pathway and associated infrastructure would occupy approximately half the width of the project area. The project area would be grubbed and graded prior to construction. The Proposed Action also includes general maintenance and repair of the pathway, safety barriers, environmental fencing, upgraded parking areas, and Eglin AFB property fencing adjacent to the pathway; installation of signage and enforcement of parking restrictions along the pathway; and sand removal and erosion control for the pathway and upgraded parking areas.

Federal Review:

The 24 Florida Statutes of the Florida Coastal Management Program are addressed in **Table 1** as part of this consistency review. After review of Florida’s statutes and regulations, the U.S. Air Force has made a determination that this activity would be consistent with the Florida Coastal Management Program.

Pursuant to 15 CFR § 930.41, the Florida State Clearinghouse has 60 days from receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension, in writing, under 15 CFR § 930.41(b). Florida’s concurrence will be presumed if Eglin AFB does not receive its response on the 60th day from receipt of this determination.

Table 1. Florida Coastal Management Program Consistency Review

Statute	Scope	Consistency
Chapter 161 <i>Beach and Shore Preservation</i>	This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.	Although the pathway would be sited in proximity to the coast line, it would not be sited seaward of the Coastal Construction Control Line. As such, a Coastal Construction Control Line permit would not be applicable. The Proposed Action would not affect beach and shore management and would have no impact on the restoration and maintenance of critically eroded beaches.
Chapter 163, Part II <i>Growth Policy; County and Municipal Planning; Land Development Regulation</i>	Provides for the implementation of comprehensive planning programs to guide and control future development of the state.	The Proposed Action would not affect local government and Okaloosa County comprehensive plans. Local and county governments were provided the opportunity to review the Draft Environmental Assessment (EA) for consistency with their comprehensive plans.
Chapter 186 <i>State and Regional Planning</i>	Provides direction for the delivery of governmental services, a means for defining and achieving the specific goals of the state, and a method for evaluating the accomplishment of those goals in regard to the state comprehensive plan.	The Proposed Action would be within the FDOT right-of-way (on Okaloosa Island) and FDOT easement (on Eglin AFB). FDOT is a participating agency for the EA, which was provided to various state agencies for review. The Proposed Action would be consistent with state plans for water use, land development, and transportation.

Statute	Scope	Consistency
<p>Chapter 252 <i>Emergency Management</i></p>	<p>Directs the state to reduce the vulnerability of its people and property to natural and manmade disasters; prepare for, respond to and reduce the impacts of disasters; and decrease the time and resources needed to recover from disasters.</p>	<p>The Proposed Action would not affect the state’s vulnerability to natural disasters.</p> <p>The Proposed Action would not affect state emergency response and evacuation procedures.</p> <p>The Proposed Action would not affect the ability of the state to respond to or recover from natural or man-made disasters.</p>
<p>Chapter 253 <i>State Lands</i></p>	<p>Addresses the acquisition, administration, management, control, supervision, conservation, protection, and disposition of all state lands.</p>	<p>The project area includes private, county, and federal land and does not include state land. The Proposed Action would not affect state lands.</p>
<p>Chapter 258 <i>State Parks and Preserves</i></p>	<p>Addresses the state’s administration of state parks, aquatic preserves, and state recreation areas.</p>	<p>The Proposed Action would not affect Florida state parks, state recreational areas, or aquatic preserves.</p>
<p>Chapter 259 <i>Land Acquisition for Conservation or Recreation</i></p>	<p>Addresses public ownership of natural areas for purposes of maintaining the state’s unique natural resources; protecting air, land, and water quality; promoting water resource development to meet the needs of natural systems and citizens of this state; promoting restoration activities on public lands; and providing lands for natural resource based recreation.</p>	<p>While no land would be acquired for conservation or recreation, the Proposed Action would enhance natural resource-based recreational opportunities. The pathway is expected to attract up to 37,800 users annually and promote up to an estimated 56 percent increase in resident and tourist walking and biking activities. It would be constructed on private, county, and federal land within the FDOT right-of-way (on Okaloosa Island) and FDOT easement (on Eglin AFB) for U.S. 98.</p> <p>The Proposed Action would be consistent with Florida state tourism and outdoor recreation.</p>
<p>Chapter 260 <i>Florida Greenways and Trails Act</i></p>	<p>Statewide system of greenways and trails established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes.</p>	<p>The pathway would create a new trail for recreational purposes. It would be sited to maximize the distance between U.S. 98 and pathway infrastructure and, to the extent possible, be constructed outside the FDOT clear zone. In the event a variance is required, Okaloosa County would coordinate with FDOT. The project area was identified by the Florida Department of Environmental</p>

Statute	Scope	Consistency
		<p>Protection as an area that should have a trail to support a gap in the Great Northwest Coastal Trail Corridor. Therefore, the Proposed Action would be consistent with the <i>Florida Greenway and Trails Act</i>.</p>
<p>Chapter 267 <i>Historical Resources</i></p>	<p>Addresses the management and preservation of the state's archaeological and historical resources.</p>	<p>A 2019 cultural resource assessment survey identified no National Register of Historic Places-eligible or National Register of Historic Places-listed cultural resources within the Proposed Action project area. The cultural resources assessment survey concluded that the Proposed Action would have no effect on cultural resources listed or eligible for listing in the National Register of Historic Places and recommended no additional work within the area of potential effect. On March 31, 2020, the Florida State Historic Preservation Office concurred with the survey results and recommendations.</p> <p>In the event that resources are inadvertently discovered, the Eglin AFB Cultural Resources Office would be notified immediately and further ground disturbing activities would cease in that area. Any identified resources would be managed in compliance with federal law and Eglin AFB's <i>Integrated Cultural Resources Management Plan</i>.</p> <p>Eglin AFB has arrangements with the federally recognized tribes historically affiliated with the Eglin AFB region whereby the tribes do not wish to be contacted for projects in areas that have been surveyed and have no sites significant to them.</p> <p>Therefore, the Proposed Action would not affect archaeological and historical resources of Florida and would be consistent with Florida's statues and regulations regarding the state's archaeological and historical resources.</p>

Statute	Scope	Consistency
<p>Chapter 288 <i>Commercial Development and Capital Improvements</i></p>	<p>Promotes and develops general business, trade, and tourism components of the state economy.</p>	<p>The Proposed Action is expected to attract up to 37,800 users annually and promote up to an estimated 56 percent increase in resident and tourist walking and biking activities. The project area is near Okaloosa County parks as well as restaurants, stores, the Emerald Coast Convention Center, and hotels. These businesses would economically benefit from the pathway's users.</p> <p>The Proposed Action would be consistent with future business opportunities on state lands and the promotion of tourism in the region.</p>
<p>Chapter 334 <i>Transportation Administration</i></p>	<p>Addresses the state's policy concerning transportation administration.</p>	<p>Construction of the pathway would require delivery of materials and removal of debris. Transportation impacts are anticipated to be temporary and minor in nature, and there are no anticipated closures of U.S. 98. Therefore, the Proposed Action would be consistent with Florida state transportation policies.</p>
<p>Chapter 339 <i>Transportation Finance and Planning</i></p>	<p>Addresses the finance and planning needs of the state's transportation system.</p>	<p>The Proposed Action would not affect the finance and planning needs of the Florida transportation system. The pathway would not be funded using resources that could be used for the state's transportation system and would not affect transportation planning.</p>
<p>Chapter 373 <i>Water Resources</i></p>	<p>Addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians.</p>	<p>Okaloosa County would coordinate and be responsible for implementation of all applicable permits in accordance with Florida Administrative Code (FAC).</p> <p>The Proposed Action would affect up to 0.42 and 0.64 acre of wetlands and 16 to 18 acres of the 100-year floodplain, depending on the alternative selected. A Florida Environmental Resource Permit for dredge and fill of wetlands (FAC 62-312 and 346) and Section 404 Clean Water Act Permit for dredge and fill of wetlands (33 USC §§ 1251-1376) would be required.</p>

Statute	Scope	Consistency
		<p>The Proposed Action would add approximately 16 to 18 acres of impervious surface and would increase the potential for impacts on water resources due to an increased rate and volume of stormwater runoff, resulting from an overall increase in impervious surface area. A Stormwater Pollution Prevention Plan (FAC 62-621.300) would be put in place. Release of metals or chemicals into waterways or wetlands would be prohibited. Best Management Practices (BMPs) would be applied to control erosion and stormwater runoff during construction.</p> <p><i>The Florida Erosion and Sediment Control Designer & Reviewer Manual</i> would be followed and applicable permitting requirements would be satisfied in accordance with FAC 62-621 and the National Pollutant Discharge Elimination System. Okaloosa County would submit a Notice of Intent to use the Construction Generic Permit for stormwater discharge under the Florida National Pollutant Discharge Elimination System program prior to construction.</p> <p>Therefore, the Proposed Action would be consistent with Florida's state statutes and regulations regarding water resources.</p>
<p>Chapter 375 <i>Outdoor Recreation and Conservation Lands</i></p>	<p>Addresses the development of a comprehensive multipurpose outdoor recreation plan, with the purpose to document recreational supply and demand, describe current recreational opportunities, estimate the need for additional recreational opportunities, and propose the means to meet the identified needs.</p>	<p>The Proposed Action would enhance natural resource-based recreational opportunities. The pathway is expected to attract up to 37,800 users annually and increase resident and tourist walking and biking activities up to 56 percent.</p> <p>Any temporary closures or restricted access to recreational sites during pathway construction, maintenance, and repair would be communicated to the community with as much advance notice as possible. Temporary closures</p>

Statute	Scope	Consistency
		<p>of the pathway may be necessary for maintenance and repair activities.</p> <p>The Proposed Action would be consistent with the <i>Florida Greenways and Trails Act</i> and opportunities for recreation on Florida state lands.</p>
<p>Chapter 376 <i>Pollutant Discharge Prevention and Removal</i></p>	<p>Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.</p>	<p>There would be no significant impacts from pollutant discharges under the Proposed Action. Construction personnel would follow appropriate BMPs to protect against, or respond to, potential hazardous material or petroleum product spills. BMPs would be followed and include drip mats/pans beneath parked construction equipment. No fuel storage or refueling would occur within 100 feet of surface water drainages.</p> <p>Hazardous waste creation, disposal, and storage on Eglin AFB would be coordinated with the Eglin AFB Environmental Management Branch, Compliance Office and handled in accordance with Eglin AFB's <i>Hazardous Waste Management Plan</i>, which includes immediate notification in the event of a spill. Additionally, all applicable environmental compliance regulations and plans would be followed.</p> <p>Construction debris would be managed in accordance with Eglin AFB's <i>Integrated Solid Waste Management Plan</i>; Air Force Instruction 32-7042, <i>Waste Management</i>; and relevant federal, state, and local regulations.</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.</p>
<p>Chapter 377 <i>Energy Resources</i></p>	<p>Addresses regulation, planning, and development of the energy resources of the state; provides policy to</p>	<p>The Proposed Action would not affect energy resource production, including oil and gas, and/or the transportation of oil and gas.</p>

Statute	Scope	Consistency
	conserve and control the oil and gas resources in the state.	
Chapter 379 <i>Fish and Wildlife Conservation</i>	Establishes the framework for the management and protection of the State of Florida's wide diversity of fish and wildlife resources.	<p>The Proposed Action is not anticipated to have a significant impact on Florida fish and wildlife resources. The majority of impacts would occur from impacting 0.42 to 0.64 acre of wetlands, 3.47 to 6.34 acres of Eglin AFB protective buffers and areas, and 16 to 18 acres of the 100-year floodplain, depending on the alternative selected. Prior to ground disturbance or construction, Okaloosa County would coordinate with the Eglin AFB Natural Resources Office.</p> <p>A 4-foot-high environmental fence would be installed to prevent pathway users from entering and disturbing Eglin AFB protective buffers and areas that protect the federally endangered Florida perforate cladonia (<i>Cladonia perforate</i>), the state-threatened eastern least tern (<i>Sternula antillarum antillarum</i>), and bald eagle (<i>Haliaeetus leucocephalus</i>). Fencing would be placed where the pathway would be within 100 feet of Eglin AFB protective buffers and areas. Surveys of the Eglin AFB portion of the project area found no Florida perforate cladonia, and based on its primarily developed nature and low sand dunes, no Florida perforate cladonia is expected on the Okaloosa Island portion of the project area. Disturbance of Florida perforate cladonia would be prohibited.</p> <p>Prior to construction, maintenance, or storm clean up, coordination with the Eglin AFB Natural Resources Office would occur. Invasive species prevention and control BMPs would adhere to Executive Order 13112, FAC 5B-57, and FDOT's <i>Standard Specifications for Road and Bridge Construction</i>. BMPs include certified weed-free products, washing equipment and vehicles off-site when</p>

Statute	Scope	Consistency
		<p>possible, and using native plants for revegetation.</p> <p>Prior to ground disturbance, species surveys would be completed. Additionally, construction would cease until a protected animal left the area voluntarily or was relocated by a permitted biologist. Any activities not clearly defined would necessitate additional consultation with the Florida Fish and Wildlife Conservation (or U.S. Fish and Wildlife Service), Eglin AFB Natural Resources Office, and FDOT District Environmental Administrator. Conservation measures resulting from these consultations would be followed.</p> <p>All sea turtle precautions would be followed including: sea turtle-friendly lighting, reporting of any sea turtle observations or harassment (adult, hatchling, or egg), avoidance of marked sea turtle nests, and no maintenance or nighttime construction during nesting season (May 1 through October 31.)</p> <p>Applicable conservation measures from the <i>Biological Opinion for Santa Rosa Island Testing and Training Activities Amendment 2</i> would be implemented to avoid impacts on Florida fish and wildlife resources.</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the protection of fish and wildlife resources of the state.</p>
<p>Chapter 380 <i>Land and Water Management</i></p>	<p>Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.</p>	<p>The Proposed Action would be consistent with state and local policies regarding growth and development in the area. The Proposed Action would not include changes to coastal infrastructure (e.g., structures, systems, and facilities built along coastlines) such as capacity increases of existing coastal infrastructure, or use of state funds for infrastructure planning, designing, or construction.</p>

Statute	Scope	Consistency
Chapter 381 <i>Public Health, General Provisions</i>	Establishes public policy concerning the state's public health system.	The Proposed Action would not affect Florida's policy concerning the public health system.
Chapter 388 <i>Mosquito Control</i>	Addresses mosquito control efforts in the state.	The Proposed Action would not affect Florida's mosquito control efforts.
Chapter 403 <i>Environmental Control</i>	Establishes public policy concerning environmental (i.e., pollution) control in the state.	<p>Short-term increases in air emissions would occur from producing airborne dust and other air pollutants during construction. Long-term, negligible air emissions would be produced from general maintenance and repair of the pathway. Although the General Conformity Rule does not apply to actions in Okaloosa County, the annual air emissions from the Proposed Action would be below the General Conformity Rule <i>de minimis</i> threshold surrogate of 100 tons per year of each pollutant. Detailed emissions calculations are provided in Appendix C of the EA.</p> <p>All reasonable precautions would be taken to minimize fugitive particulate (dust) emissions during construction ground disturbance activities in accordance with FAC 62-296. Precautions may include water spray applications, revegetation of disturbed areas, and geotextiles usage. All activities would be done in compliance with the <i>Florida Erosion and Sediment Control Designer and Reviewer Manual</i> and FDOT's <i>Standard Specifications for Road and Bridge Construction</i>. Potential diesel-fueled exhaust emissions from project vehicle engines or construction equipment could be controlled by complying with U.S. Environmental Protection Act mobile and non-road regulations and by minimizing engine idling times.</p> <p>The Proposed Action would affect 0.42 to 0.64 acre of wetlands, 3.47 to 6.34 acres of Eglin AFB protective buffers and areas, and 16 to 18 acres of the 100-year floodplain, depending on the alternative selected. An Environmental</p>

Statute	Scope	Consistency
		<p>Resource Permit for dredge and fill of wetlands (FAC 62-312 and 346) and Section 404 Clean Water Act Permit for dredge and fill of wetlands (33 USC §§ 1251-1376) would be required. Okaloosa County would coordinate all applicable permits in accordance with FAC.</p> <p>Solid waste and construction debris generated during from construction and operation would be managed in accordance with Air Force Instruction 32-7042, <i>Waste Management</i>; Eglin AFB's <i>Integrated Solid Waste Management Plan</i>; and relevant federal, state, and local regulations.</p> <p>Therefore, the Proposed Action would be consistent with Florida policies concerning air quality, water quality, pollution control, solid waste management, and other environmental control efforts.</p>
Chapter 553 <i>Building Construction Standards</i>	Addresses building construction standards and provides for a unified Florida Building Code.	There are no buildings proposed for construction. Therefore, the Proposed Action would not be subject to Florida building construction standards.
Chapter 582 <i>Soil and Water Conservation</i>	Provides for the control and prevention of soil erosion.	<p>The Proposed Action could have minor impacts on soils such as soil compaction and soil disturbance. BMPs would be implemented by construction personnel to reduce the impact on soils. Stormwater management controls, inspections, and required remedial actions would be implemented, as necessary, during ground disturbing activities to minimize potential impacts on soils. These BMPs would be implemented in accordance with the project Stormwater Pollution Prevention Plan (FAC 62-621.300) (See response regarding consistency with <i>Ch. 373, Water Resources</i>).</p> <p>Therefore, the Proposed Action would be consistent with Florida statutes and regulations regarding soil and water conservation efforts.</p>

Statute	Scope	Consistency
Chapter 597 <i>Aquaculture</i>	Establishes public policy concerning the cultivation of aquatic organisms of the state. Addresses the state aquaculture plan, which provides for the coordination and prioritization of state aquaculture efforts, the conservation and enhancement of aquatic resources, and mechanisms for increasing aquaculture production.	The Proposed Action would not affect Florida aquaculture efforts.

Figure 1. Project Area



Figure 2. North and South Alternatives (1 of 4)



Figure 3. North and South Alternatives (2 of 4)

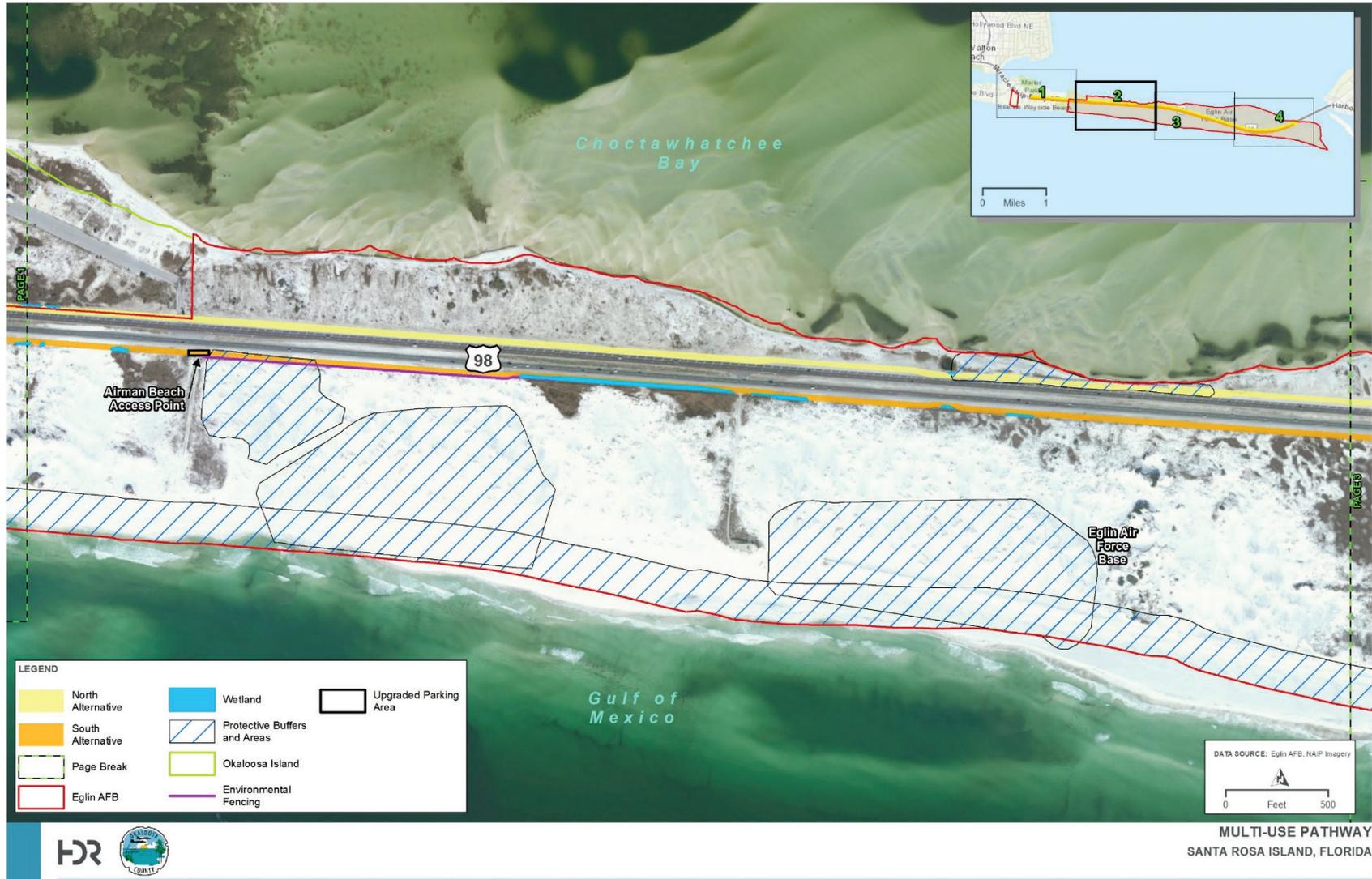
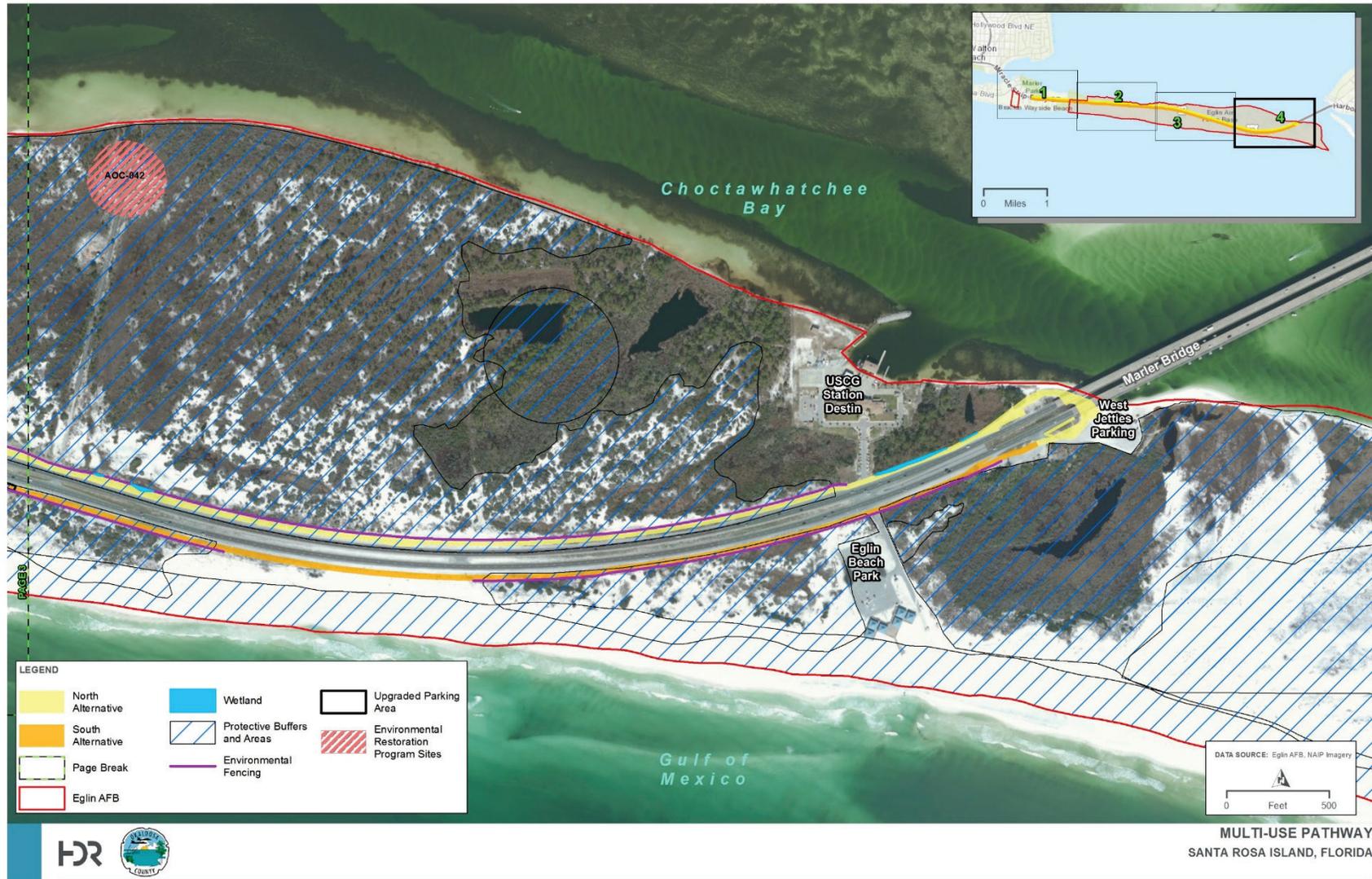


Figure 4. North and South Alternatives (3 of 4)



Figure 5. North and South Alternatives (4 of 4)



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C

Air Emission Calculations



AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: EGLIN AFB
State: Florida
County(s): Okaloosa
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Construct Multi-Use Path

c. Project Number/s (if applicable): NA

d. Projected Action Start Date: 1 / 2021

e. Action Description:

See Section 2 of EA.

f. Point of Contact:

Name: Timothy Didlake
Title: Contractor
Organization: HDR
Email: timothy.didlake@hdrinc.com
Phone Number: 484-612-1124

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

_____ applicable
 not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.555	100	No
NOx	3.293	100	No
CO	3.099	100	No
SOx	0.007	100	No
PM 10	27.762	100	No
PM 2.5	0.157	100	No
Pb	0.000	25	No
NH3	0.001	100	No
CO2e	730.5		

2022 - (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NOx	0.000	100	No
CO	0.000	100	No
SOx	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH3	0.000	100	No
CO2e	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.



Timothy Didlake, Contractor

22 November 2019

DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: EGLIN AFB
State: Florida
County(s): Okaloosa
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Construct Multi-Use Path

- Project Number/s (if applicable): NA

- Projected Action Start Date: 1 / 2021

- Action Purpose and Need:

See Section 1.3 of EA.

- Action Description:

See Section 2 of EA.

- Point of Contact

Name: Timothy Didlake
Title: Contractor
Organization: HDR
Email: timothy.didlake@hdrinc.com
Phone Number: 484-612-1124

- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Construct Multi-Use Path - North Alternative

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

County: Okaloosa
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Construct Multi-Use Path - North Alternative

- Activity Description:

Site grading would occur on an area 4.3 miles (22,704 feet) long by 40 feet wide for a total of 908,160 square feet. Site grading would begin in January 2021 and last for 3 months.

Trenching would occur to construct the new fencing. Trenching would disturb an area 8,400 feet long by 2 feet wide for a total of 16,800 square feet. Trenching would begin in October 2021 and last for 3 months.

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Paving would occur on an area measuring 18 acres (784,080 square feet). Paving would begin in April 2021 and last for 6 months.

- Activity Start Date

Start Month: 1
Start Month: 2021

- Activity End Date

Indefinite: False
End Month: 12
End Month: 2021

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.554976
SO _x	0.007396
NO _x	3.292767
CO	3.098816
PM 10	27.761602

Pollutant	Total Emissions (TONs)
PM 2.5	0.157039
Pb	0.000000
NH ₃	0.001235
CO _{2e}	730.5

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2021

- Phase Duration

Number of Month: 3
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 908160
Amount of Material to be Hauled On-Site (yd³): 0
Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Average Hauling Truck Capacity (yd³): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0687	0.0013	0.3576	0.5112	0.0158	0.0158	0.0062	119.73
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0860	0.0014	0.5212	0.5747	0.0247	0.0247	0.0077	132.93
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0533	0.0012	0.3119	0.3497	0.0121	0.0121	0.0048	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2015	0.0024	1.4660	0.7661	0.0581	0.0581	0.0181	239.53
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1814	0.0026	1.2262	0.7745	0.0491	0.0491	0.0163	262.89
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0407	0.0007	0.2505	0.3606	0.0112	0.0112	0.0036	66.890

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.282	000.002	000.207	003.392	000.006	000.005		000.023	00341.791
LDGT	000.376	000.003	000.373	004.889	000.007	000.006		000.024	00439.705
HDGV	000.832	000.005	000.964	016.217	000.016	000.014		000.046	00814.851
LDDV	000.084	000.003	000.127	002.822	000.004	000.004		000.008	00334.379
LDDT	000.227	000.004	000.365	004.850	000.007	000.006		000.008	00473.628
HDDV	000.423	000.014	004.175	001.653	000.176	000.162		000.028	01559.331
MC	003.040	000.003	000.626	013.017	000.026	000.023		000.052	00392.775

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL} : Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL} : Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite} : Amount of Material to be Hauled On-Site (yd³)

$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)

VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Start Month: 10
Start Quarter: 1
Start Year: 2021

- Phase Duration

Number of Month: 3
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 16800
Amount of Material to be Hauled On-Site (yd³): 0
Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0687	0.0013	0.3576	0.5112	0.0158	0.0158	0.0062	119.73
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0860	0.0014	0.5212	0.5747	0.0247	0.0247	0.0077	132.93
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0533	0.0012	0.3119	0.3497	0.0121	0.0121	0.0048	122.61
Rubber Tired Dozers Composite								

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	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2015	0.0024	1.4660	0.7661	0.0581	0.0581	0.0181	239.53
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1814	0.0026	1.2262	0.7745	0.0491	0.0491	0.0163	262.89
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0407	0.0007	0.2505	0.3606	0.0112	0.0112	0.0036	66.890

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.282	000.002	000.207	003.392	000.006	000.005		000.023	00341.791
LDGT	000.376	000.003	000.373	004.889	000.007	000.006		000.024	00439.705
HDGV	000.832	000.005	000.964	016.217	000.016	000.014		000.046	00814.851
LDDV	000.084	000.003	000.127	002.822	000.004	000.004		000.008	00334.379
LDDT	000.227	000.004	000.365	004.850	000.007	000.006		000.008	00473.628
HDDV	000.423	000.014	004.175	001.653	000.176	000.162		000.028	01559.331
MC	003.040	000.003	000.626	013.017	000.026	000.023		000.052	00392.775

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)

HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONS)
 VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

2.3 Paving Phase

2.3.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
 Start Quarter: 1
 Start Year: 2021

- Phase Duration

Number of Month: 6
 Number of Days: 0

2.3.2 Paving Phase Assumptions

- General Paving Information

Paving Area (ft²): 784080

- Paving Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	8
Rollers Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0687	0.0013	0.3576	0.5112	0.0158	0.0158	0.0062	119.73
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0860	0.0014	0.5212	0.5747	0.0247	0.0247	0.0077	132.93
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0533	0.0012	0.3119	0.3497	0.0121	0.0121	0.0048	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2015	0.0024	1.4660	0.7661	0.0581	0.0581	0.0181	239.53
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1814	0.0026	1.2262	0.7745	0.0491	0.0491	0.0163	262.89
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0407	0.0007	0.2505	0.3606	0.0112	0.0112	0.0036	66.890

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.282	000.002	000.207	003.392	000.006	000.005		000.023	00341.791
LDGT	000.376	000.003	000.373	004.889	000.007	000.006		000.024	00439.705
HDBGV	000.832	000.005	000.964	016.217	000.016	000.014		000.046	00814.851
LDDV	000.084	000.003	000.127	002.822	000.004	000.004		000.008	00334.379
LDDT	000.227	000.004	000.365	004.850	000.007	000.006		000.008	00473.628
HDDV	000.423	000.014	004.175	001.653	000.176	000.162		000.028	01559.331
MC	003.040	000.003	000.626	013.017	000.026	000.023		000.052	00392.775

2.3.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

- CEE_{POL}: Construction Exhaust Emissions (TONs)
- NE: Number of Equipment
- WD: Number of Total Work Days (days)
- H: Hours Worked per Day (hours)
- EF_{POL}: Emission Factor for Pollutant (lb/hour)
- 2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft²)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)
HC: Average Hauling Truck Capacity (yd³)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_P = (2.62 * PA) / 43560$$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft²)
43560: Conversion Factor square feet to acre (43560 ft² / acre)² / acre)

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

1. General Information: The Air Force's Air Conformity Applicability Model (ACAM) was used to perform an analysis to assess the potential air quality impact/s associated with the action in accordance with the Air Force Instruction 32-7040, Air Quality Compliance And Resource Management; the Environmental Impact Analysis Process (EIAP, 32 CFR 989); and the General Conformity Rule (GCR, 40 CFR 93 Subpart B). This report provides a summary of the ACAM analysis.

a. Action Location:

Base: EGLIN AFB
State: Florida
County(s): Okaloosa
Regulatory Area(s): NOT IN A REGULATORY AREA

b. Action Title: Construct Multi-Use Path

c. Project Number/s (if applicable): NA

d. Projected Action Start Date: 1 / 2021

e. Action Description:

See Section 2 of EA.

f. Point of Contact:

Name: Timothy Didlake
Title: Contractor
Organization: HDR
Email: timothy.didlake@hdrinc.com
Phone Number: 484-612-1124

2. Air Impact Analysis: Based on the attainment status at the action location, the requirements of the General Conformity Rule are:

applicable
 not applicable

Total combined direct and indirect emissions associated with the action were estimated through ACAM on a calendar-year basis for the "worst-case" and "steady state" (net gain/loss upon action fully implemented) emissions.

"Air Quality Indicators" were used to provide an indication of the significance of potential impacts to air quality. These air quality indicators are EPA General Conformity Rule (GCR) thresholds (de minimis levels) that are applied out of context to their intended use. Therefore, these indicators do not trigger a regulatory requirement; however, they provide a warning that the action is potentially significant. It is important to note that these indicators only provide a clue to the potential impacts to air quality.

Given the GCR de minimis threshold values are the maximum net change an action can acceptably emit in non-attainment and maintenance areas, these threshold values would also conservatively indicate an actions emissions within an attainment would also be acceptable. An air quality indicator value of 100 tons/yr is used based on the GCR de minimis threshold for the least severe non-attainment classification for all criteria pollutants (see 40 CFR 93.153). Therefore, the worst-case year emissions were compared against the GCR Indicator and are summarized below.

Analysis Summary:

AIR CONFORMITY APPLICABILITY MODEL REPORT RECORD OF AIR ANALYSIS (ROAA)

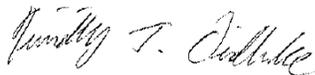
2021

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.552	100	No
NO _x	3.289	100	No
CO	3.097	100	No
SO _x	0.007	100	No
PM 10	27.720	100	No
PM 2.5	0.157	100	No
Pb	0.000	25	No
NH ₃	0.001	100	No
CO _{2e}	729.1		

2022 - (Steady State)

Pollutant	Action Emissions (ton/yr)	AIR QUALITY INDICATOR	
		Threshold (ton/yr)	Exceedance (Yes or No)
NOT IN A REGULATORY AREA			
VOC	0.000	100	No
NO _x	0.000	100	No
CO	0.000	100	No
SO _x	0.000	100	No
PM 10	0.000	100	No
PM 2.5	0.000	100	No
Pb	0.000	25	No
NH ₃	0.000	100	No
CO _{2e}	0.0		

None of estimated emissions associated with this action are above the GCR indicators, indicating no significant impact to air quality; therefore, no further air assessment is needed.



Timothy Didlake, Contractor

22 November 2019

DATE

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

1. General Information

- Action Location

Base: EGLIN AFB
State: Florida
County(s): Okaloosa
Regulatory Area(s): NOT IN A REGULATORY AREA

- Action Title: Construct Multi-Use Path

- Project Number/s (if applicable): NA

- Projected Action Start Date: 1 / 2021

- Action Purpose and Need:

See Section 1.3 of EA.

- Action Description:

See Section 2 of EA.

- Point of Contact

Name: Timothy Didlake
Title: Contractor
Organization: HDR
Email: timothy.didlake@hdrinc.com
Phone Number: 484-612-1124

- Activity List:

	Activity Type	Activity Title
2.	Construction / Demolition	Construct Multi-Use Path - South Alternative

Emission factors and air emission estimating methods come from the United States Air Force's Air Emissions Guide for Air Force Stationary Sources, Air Emissions Guide for Air Force Mobile Sources, and Air Emissions Guide for Air Force Transitory Sources.

2. Construction / Demolition

2.1 General Information & Timeline Assumptions

- Activity Location

County: Okaloosa
Regulatory Area(s): NOT IN A REGULATORY AREA

- Activity Title: Construct Multi-Use Path - South Alternative

- Activity Description:

Site grading would occur on an area 4.3 miles (22,704 feet) long by 40 feet wide for a total of 908,160 square feet. Site grading would begin in January 2021 and last for 3 months.

Trenching would occur to construct the new fencing. Trenching would disturb an area 7,700 feet long by 2 feet wide for a total of 15,400 square feet. Trenching would begin in October 2021 and last for 3 months.

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Paving would occur on an area measuring 16 acres (696,960 square feet). Paving would begin in April 2021 and last for 6 months.

- Activity Start Date

Start Month: 1
Start Month: 2021

- Activity End Date

Indefinite: False
End Month: 12
End Month: 2021

- Activity Emissions:

Pollutant	Total Emissions (TONs)
VOC	0.551980
SO _x	0.007383
NO _x	3.289054
CO	3.097346
PM 10	27.719664

Pollutant	Total Emissions (TONs)
PM 2.5	0.156895
Pb	0.000000
NH ₃	0.001210
CO _{2e}	729.1

2.1 Site Grading Phase

2.1.1 Site Grading Phase Timeline Assumptions

- Phase Start Date

Start Month: 1
Start Quarter: 1
Start Year: 2021

- Phase Duration

Number of Month: 3
Number of Days: 0

2.1.2 Site Grading Phase Assumptions

- General Site Grading Information

Area of Site to be Graded (ft²): 908160
Amount of Material to be Hauled On-Site (yd³): 0
Amount of Material to be Hauled Off-Site (yd³): 0

- Site Grading Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	1	8
Graders Composite	1	8
Other Construction Equipment Composite	1	8
Rubber Tired Dozers Composite	1	8
Scrapers Composite	3	8
Tractors/Loaders/Backhoes Composite	3	8

- Vehicle Exhaust

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

Average Hauling Truck Capacity (yd³): 20 (default)

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.1.3 Site Grading Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0687	0.0013	0.3576	0.5112	0.0158	0.0158	0.0062	119.73
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0860	0.0014	0.5212	0.5747	0.0247	0.0247	0.0077	132.93
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0533	0.0012	0.3119	0.3497	0.0121	0.0121	0.0048	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2015	0.0024	1.4660	0.7661	0.0581	0.0581	0.0181	239.53
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1814	0.0026	1.2262	0.7745	0.0491	0.0491	0.0163	262.89
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0407	0.0007	0.2505	0.3606	0.0112	0.0112	0.0036	66.890

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.282	000.002	000.207	003.392	000.006	000.005		000.023	00341.791
LDGT	000.376	000.003	000.373	004.889	000.007	000.006		000.024	00439.705
HDGV	000.832	000.005	000.964	016.217	000.016	000.014		000.046	00814.851
LDDV	000.084	000.003	000.127	002.822	000.004	000.004		000.008	00334.379
LDDT	000.227	000.004	000.365	004.850	000.007	000.006		000.008	00473.628
HDDV	000.423	000.014	004.175	001.653	000.176	000.162		000.028	01559.331
MC	003.040	000.003	000.626	013.017	000.026	000.023		000.052	00392.775

2.1.4 Site Grading Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL} : Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL} : Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite} : Amount of Material to be Hauled On-Site (yd³)

$HA_{OffSite}$: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)

VMT_{VE} : Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Vehicle Exhaust On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)

WD: Number of Total Work Days (days)

WT: Average Worker Round Trip Commute (mile)

1.25: Conversion Factor Number of Construction Equipment to Number of Works

NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL} : Vehicle Emissions (TONs)

VMT_{WT} : Worker Trips Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

EF_{POL} : Emission Factor for Pollutant (grams/mile)

VM: Worker Trips On Road Vehicle Mixture (%)

2000: Conversion Factor pounds to tons

2.2 Trenching/Excavating Phase

2.2.1 Trenching / Excavating Phase Timeline Assumptions

- Phase Start Date

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Start Month: 10
Start Quarter: 1
Start Year: 2021

- Phase Duration

Number of Month: 3
Number of Days: 0

2.2.2 Trenching / Excavating Phase Assumptions

- General Trenching/Excavating Information

Area of Site to be Trenched/Excavated (ft²): 15400
Amount of Material to be Hauled On-Site (yd³): 0
Amount of Material to be Hauled Off-Site (yd³): 0

- Trenching Default Settings

Default Settings Used: Yes
Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Excavators Composite	2	8
Other General Industrial Equipmen Composite	1	8
Tractors/Loaders/Backhoes Composite	1	8

- Vehicle Exhaust

Average Hauling Truck Capacity (yd³): 20 (default)
Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.2.3 Trenching / Excavating Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0687	0.0013	0.3576	0.5112	0.0158	0.0158	0.0062	119.73
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0860	0.0014	0.5212	0.5747	0.0247	0.0247	0.0077	132.93
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0533	0.0012	0.3119	0.3497	0.0121	0.0121	0.0048	122.61
Rubber Tired Dozers Composite								

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	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2015	0.0024	1.4660	0.7661	0.0581	0.0581	0.0181	239.53
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1814	0.0026	1.2262	0.7745	0.0491	0.0491	0.0163	262.89
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0407	0.0007	0.2505	0.3606	0.0112	0.0112	0.0036	66.890

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.282	000.002	000.207	003.392	000.006	000.005		000.023	00341.791
LDGT	000.376	000.003	000.373	004.889	000.007	000.006		000.024	00439.705
HDGV	000.832	000.005	000.964	016.217	000.016	000.014		000.046	00814.851
LDDV	000.084	000.003	000.127	002.822	000.004	000.004		000.008	00334.379
LDDT	000.227	000.004	000.365	004.850	000.007	000.006		000.008	00473.628
HDDV	000.423	000.014	004.175	001.653	000.176	000.162		000.028	01559.331
MC	003.040	000.003	000.626	013.017	000.026	000.023		000.052	00392.775

2.2.4 Trenching / Excavating Phase Formula(s)

- Fugitive Dust Emissions per Phase

$$PM10_{FD} = (20 * ACRE * WD) / 2000$$

PM10_{FD}: Fugitive Dust PM 10 Emissions (TONs)

20: Conversion Factor Acre Day to pounds (20 lb / 1 Acre Day)

ACRE: Total acres (acres)

WD: Number of Total Work Days (days)

2000: Conversion Factor pounds to tons

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = (HA_{OnSite} + HA_{OffSite}) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

HA_{OnSite}: Amount of Material to be Hauled On-Site (yd³)

HA_{OffSite}: Amount of Material to be Hauled Off-Site (yd³)

HC: Average Hauling Truck Capacity (yd³)

(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)

HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)

0.002205: Conversion Factor grams to pounds

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Vehicle Exhaust On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
 WD: Number of Total Work Days (days)
 WT: Average Worker Round Trip Commute (mile)
 1.25: Conversion Factor Number of Construction Equipment to Number of Works
 NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONS)
 VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
 0.002205: Conversion Factor grams to pounds
 EF_{POL}: Emission Factor for Pollutant (grams/mile)
 VM: Worker Trips On Road Vehicle Mixture (%)
 2000: Conversion Factor pounds to tons

2.3 Paving Phase

2.3.1 Paving Phase Timeline Assumptions

- Phase Start Date

Start Month: 4
 Start Quarter: 1
 Start Year: 2021

- Phase Duration

Number of Month: 6
 Number of Days: 0

2.3.2 Paving Phase Assumptions

- General Paving Information

Paving Area (ft²): 696960

- Paving Default Settings

Default Settings Used: Yes
 Average Day(s) worked per week: 5 (default)

- Construction Exhaust (default)

Equipment Name	Number Of Equipment	Hours Per Day
Pavers Composite	1	8
Paving Equipment Composite	2	8
Rollers Composite	2	6

- Vehicle Exhaust

Average Hauling Truck Round Trip Commute (mile): 20 (default)

- Vehicle Exhaust Vehicle Mixture (%)

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	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	0	0	0	0	0	100.00	0

- Worker Trips

Average Worker Round Trip Commute (mile): 20 (default)

- Worker Trips Vehicle Mixture (%)

	LDGV	LDGT	HDBGV	LDDV	LDDT	HDDV	MC
POVs	50.00	50.00	0	0	0	0	0

2.3.3 Paving Phase Emission Factor(s)

- Construction Exhaust Emission Factors (lb/hour) (default)

Excavators Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0687	0.0013	0.3576	0.5112	0.0158	0.0158	0.0062	119.73
Graders Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0860	0.0014	0.5212	0.5747	0.0247	0.0247	0.0077	132.93
Other Construction Equipment Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0533	0.0012	0.3119	0.3497	0.0121	0.0121	0.0048	122.61
Rubber Tired Dozers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.2015	0.0024	1.4660	0.7661	0.0581	0.0581	0.0181	239.53
Scrapers Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.1814	0.0026	1.2262	0.7745	0.0491	0.0491	0.0163	262.89
Tractors/Loaders/Backhoes Composite								
	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	CH ₄	CO _{2e}
Emission Factors	0.0407	0.0007	0.2505	0.3606	0.0112	0.0112	0.0036	66.890

- Vehicle Exhaust & Worker Trips Emission Factors (grams/mile)

	VOC	SO _x	NO _x	CO	PM 10	PM 2.5	Pb	NH ₃	CO _{2e}
LDGV	000.282	000.002	000.207	003.392	000.006	000.005		000.023	00341.791
LDGT	000.376	000.003	000.373	004.889	000.007	000.006		000.024	00439.705
HDBGV	000.832	000.005	000.964	016.217	000.016	000.014		000.046	00814.851
LDDV	000.084	000.003	000.127	002.822	000.004	000.004		000.008	00334.379
LDDT	000.227	000.004	000.365	004.850	000.007	000.006		000.008	00473.628
HDDV	000.423	000.014	004.175	001.653	000.176	000.162		000.028	01559.331
MC	003.040	000.003	000.626	013.017	000.026	000.023		000.052	00392.775

2.3.4 Paving Phase Formula(s)

- Construction Exhaust Emissions per Phase

$$CEE_{POL} = (NE * WD * H * EF_{POL}) / 2000$$

CEE_{POL}: Construction Exhaust Emissions (TONs)

NE: Number of Equipment

WD: Number of Total Work Days (days)

H: Hours Worked per Day (hours)

EF_{POL}: Emission Factor for Pollutant (lb/hour)

2000: Conversion Factor pounds to tons

DETAIL AIR CONFORMITY APPLICABILITY MODEL REPORT

- Vehicle Exhaust Emissions per Phase

$$VMT_{VE} = PA * 0.25 * (1 / 27) * (1 / HC) * HT$$

VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
PA: Paving Area (ft²)
0.25: Thickness of Paving Area (ft)
(1 / 27): Conversion Factor cubic feet to cubic yards (1 yd³ / 27 ft³)
HC: Average Hauling Truck Capacity (yd³)
(1 / HC): Conversion Factor cubic yards to trips (1 trip / HC yd³)
HT: Average Hauling Truck Round Trip Commute (mile/trip)

$$V_{POL} = (VMT_{VE} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Vehicle Exhaust Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Vehicle Exhaust On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Worker Trips Emissions per Phase

$$VMT_{WT} = WD * WT * 1.25 * NE$$

VMT_{WT}: Worker Trips Vehicle Miles Travel (miles)
WD: Number of Total Work Days (days)
WT: Average Worker Round Trip Commute (mile)
1.25: Conversion Factor Number of Construction Equipment to Number of Works
NE: Number of Construction Equipment

$$V_{POL} = (VMT_{WT} * 0.002205 * EF_{POL} * VM) / 2000$$

V_{POL}: Vehicle Emissions (TONs)
VMT_{VE}: Worker Trips Vehicle Miles Travel (miles)
0.002205: Conversion Factor grams to pounds
EF_{POL}: Emission Factor for Pollutant (grams/mile)
VM: Worker Trips On Road Vehicle Mixture (%)
2000: Conversion Factor pounds to tons

- Off-Gassing Emissions per Phase

$$VOC_P = (2.62 * PA) / 43560$$

VOC_P: Paving VOC Emissions (TONs)
2.62: Emission Factor (lb/acre)
PA: Paving Area (ft²)
43560: Conversion Factor square feet to acre (43560 ft² / acre)² / acre)