

DRAFT
ENVIRONMENTAL ASSESSMENT

FOR

Runway 18-36 Rehabilitation

AT

MYRTLE BEACH INTERNATIONAL AIRPORT (MYR)

Myrtle Beach, South Carolina

Prepared for:

Horry County Department of Airports

and

U.S. Department of Transportation

Federal Aviation Administration

As lead Federal Agency pursuant to the National Environmental Policy Act of 1969

Prepared by:

RS&H, Inc

April 4, 2024

This environmental assessment becomes a federal document when evaluated, signed, and dated by the responsible FAA official.

(Responsible FAA Official)

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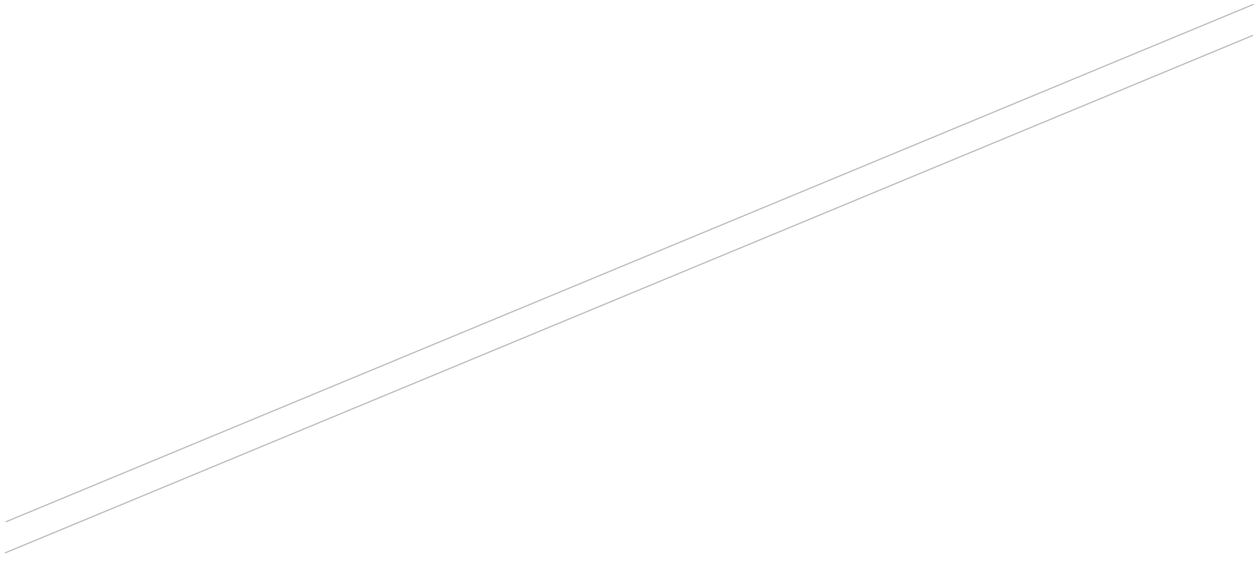
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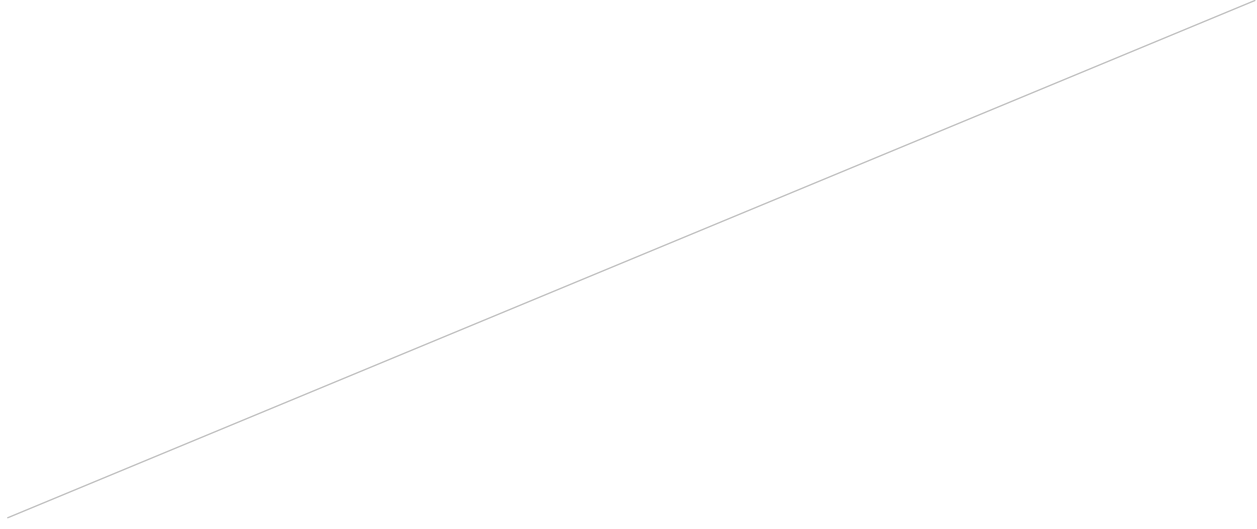
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*INTRODUCTION /
PURPOSE AND NEED*



RS&H

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This Environmental Assessment (EA) evaluates the potential impacts of the Proposed Project on the surrounding environment and has been prepared pursuant to the requirements of Section 102(2)(c) of the National Environmental Policy Act of 1969 (NEPA, 42 United States Code [U.S.C.] §§ 4321-4370); the President’s Council on Environmental Quality (CEQ) Regulations, Title 40, Code of Federal Regulations (CFR), Sections 1500-1508; as well as in accordance with *FAA Order 1050.1F, Environmental Impacts: Policies and Procedures* and *FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. EAs assist federal agencies in determining whether potential environmental impacts are significant. This EA has been prepared to identify and consider the potential environmental impacts of the Proposed Project. The FAA is the lead federal agency to ensure compliance with NEPA for the purpose of the Proposed Project.

Actions by the FAA include airport layout plan (ALP) approval. Considering the proposed improvements that comprise rehabilitation of airfield infrastructure, the federal action includes approval of the ALP of only those portions of the Proposed Project that meet the criteria established in 49 U.S.C. § 47107(a)(16)(B).¹

This EA identifies the potential environmental impacts of the Proposed Project at MYR, which includes the requested federal action described in **Section 1.4**. The EA assesses the impact categories required by FAA Orders 1050.1F and 5050.4B in relationship to the Proposed Project and No Action Alternative, demonstrates how identified impacts can be eliminated or mitigated, and provides the context for public involvement and comment.

1.1 AIRPORT OVERVIEW

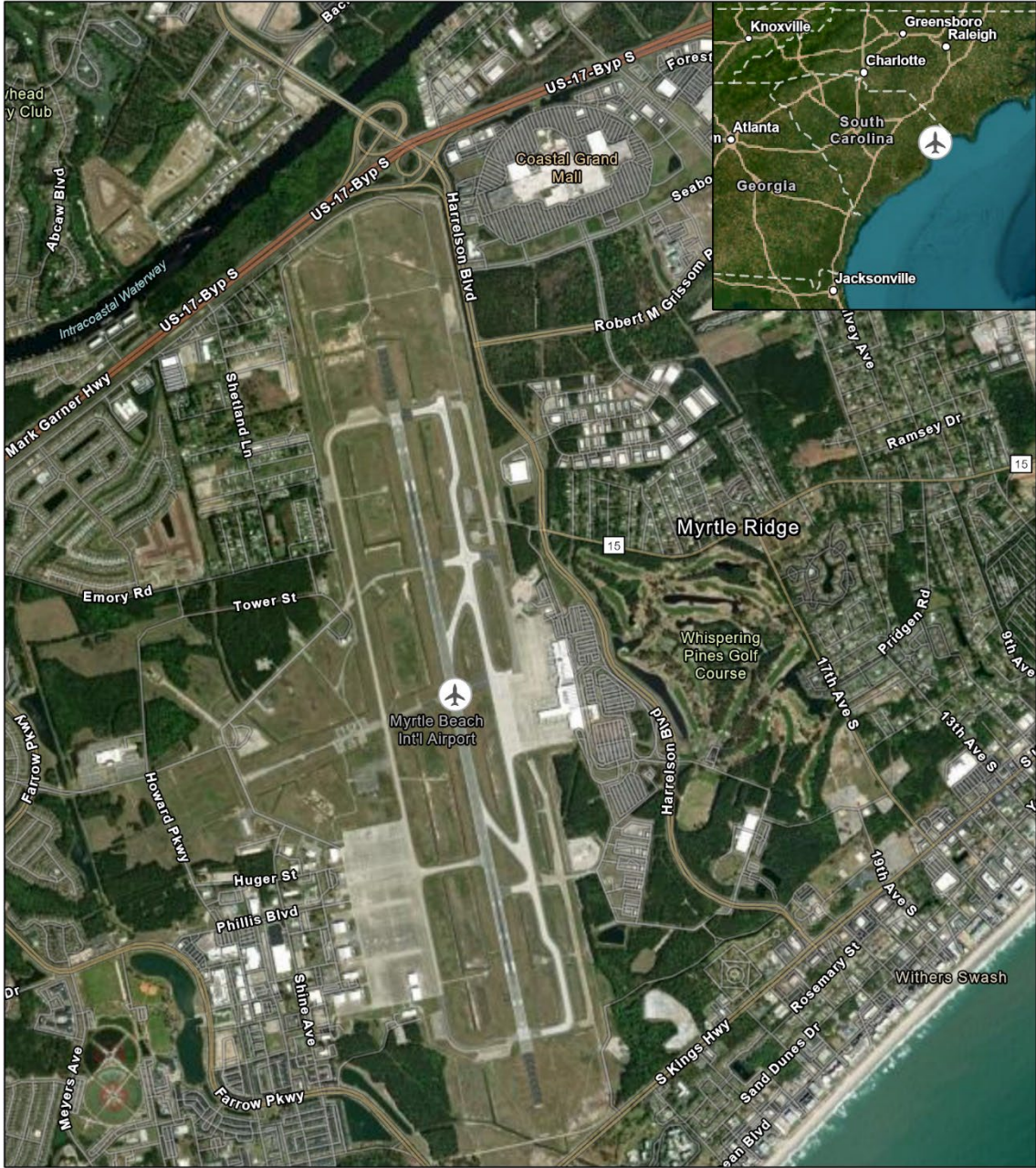
The Myrtle Beach International Airport (MYR or Airport) is managed by the Horry County Department of Airports (HCDA). The Airport is approximately three miles southwest of the central business district of Myrtle Beach, in Horry County, South Carolina. The Airport is bounded by Atlantic Intracoastal Waterway and U.S. Highway 17 to the north, Harrelson Boulevard to the east, U.S. Highway 17 BUS (South Kings Highway) to the south, and Farrow Parkway and Howard Parkway to the west. **Figure 1-1** shows the Airport location. **Figure 1-2** shows MYR’s FAA-approved ALP.

In the National Plan of Integrated Airport Systems, the FAA classifies the Airport as a small hub primary commercial airport (National Plan of Integrated Airport Systems, 2022). The Airport has one runway (Runway 18-36), taxiways, aprons, and other facilities supporting aircraft operations. Runway 18-36 is 9,503 feet long by 150 feet wide. According to the Terminal Area Forecast (TAF), in 2022, the total number of aircraft operations at the Airport was 157,332 (Federal Aviation Administration, 2023).

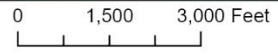
Aircraft operations at the Airport include commercial, corporate/business, general aviation, charter, cargo, recreational, and military flights. **Table 1-1** shows the Airport’s FAA Terminal Area Forecast (TAF) of total operations and enplanements (passengers) from 2022 to 2030.

¹ The Secretary will review and approve or disapprove only those portions of the plan (or any subsequent revision to the plan) that materially impact the safe and efficient operation of aircraft at, to, or from the airport or that would adversely affect the safety of people or property on the ground adjacent to the airport as a result of aircraft operations, or that adversely affect the value of prior Federal investments to a significant extent.

FIGURE 1-1: LOCATION MAP



Sources: ESRI 2023; RS&H 2023

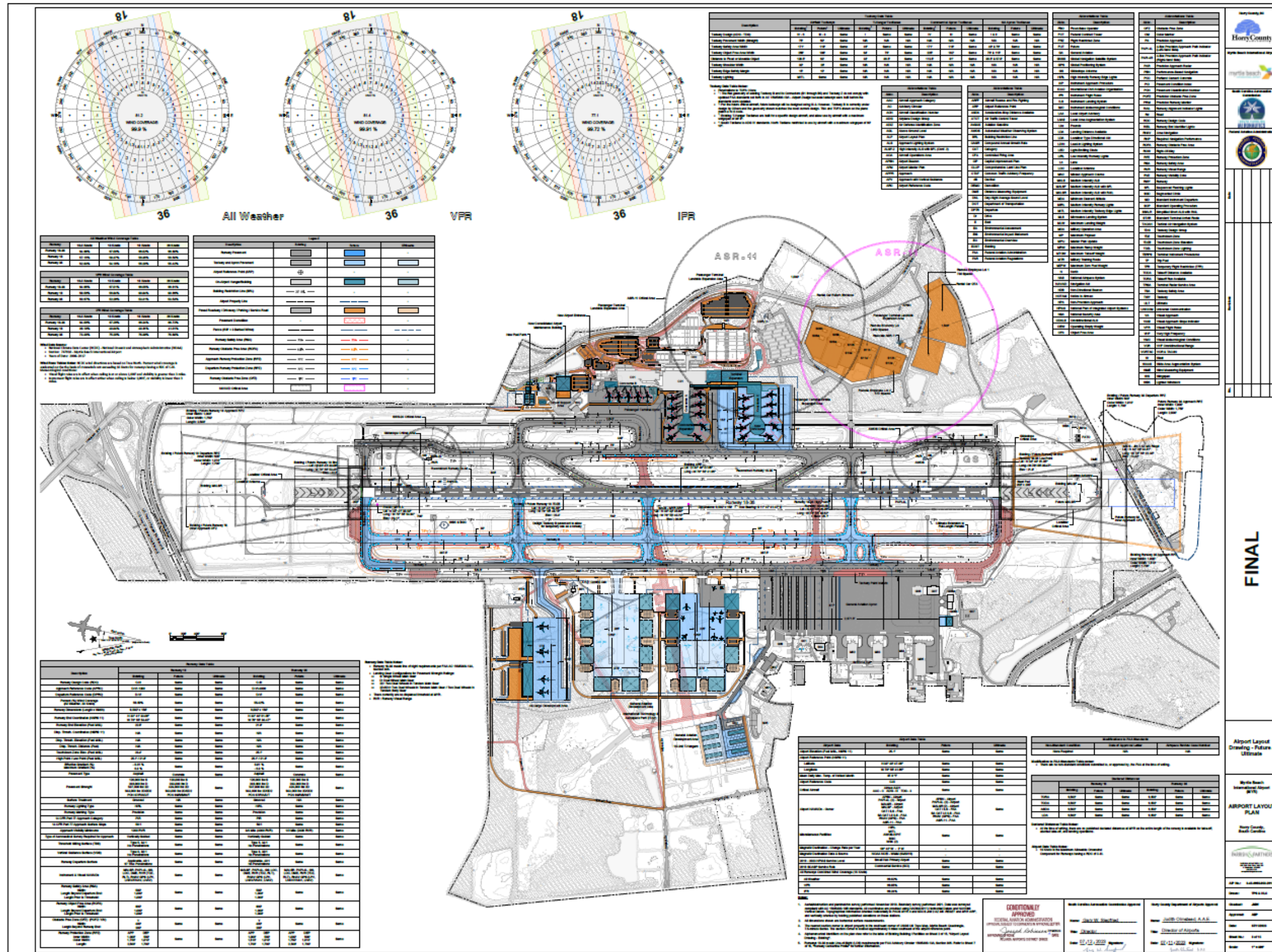


Legend

 Myrtle Beach International Airport



FIGURE 1-2: MYR AIRPORT LAYOUT PLAN



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TABLE 1-1: FAA TERMINAL AREA FORECAST

Year	Total Operations	Enplanements
2022	157,332	1,708,461
2023	124,575	1,713,772
2024	132,470	1,727,370
2025	141,774	1,771,876
2026	143,092	1,818,560
2027	144,325	1,863,435
2028	145,833	1,912,092
2029	147,361	1,961,928
2030	148,893	2,012,183

Source: (Federal Aviation Administration, 2023)

1.2 PURPOSE AND NEED

The purpose of the Proposed Project is to permanently rehabilitate the full depth and width of the Runway 18-36 pavement to continue safe aircraft operations at the Airport. The runway rehabilitation would improve the safety of the runway and extend the life of Runway 18-36 for approximately 20 years.

The project is needed at the Airport because of the degrading and failing runway subbase materials that are contributing to the accelerated reduction in PCI and PCR values and increase in foreign object debris (FOD)² on the runway.

1.2.1 Supporting Data

As a result of Public Law 103-305, Section 107, which thereby amended Title 49, Section 47105 of the United States Code, Assurance No. 11 was added to the FAA Owner Assurance. This Assurance dictates that the Airport Sponsor must assure or certify that it has implemented an effective airport pavement maintenance-management program. Correspondingly, the Airport Sponsor must provide reports that address their pavement condition and the status of their pavement management program to the FAA every three (3) years. Additionally, FAA Advisory Circular 150/5335-5 describes that all publicly used paved runways at all Part 139 certificated airports (i.e., MYR) be assigned pavement classification numbers (PCN) values within (1) year of publication.

The HCDA conducted a Runway 18-36 Pavement Maintenance Program (PMP) in accordance with current FAA requirements described in FAA Advisory Circular (AC) 150/5380-6C - *Guidelines and Procedures for Maintenance of Airport Pavements*, and 150/5380-7B - *Airport Pavement Management Program (PMP)*. There were four components related to the Runway 18-36 PMP: (1) a visual pavement inspection known as a Pavement Condition Index (PCI) Survey used to identify and establish a PCI value;

² FOD - Any object, live or not, located in an inappropriate location in the airport environment that has the capacity to injure airport or air carrier personnel and damage aircraft. (FAA, 2010).

(2) Non-destructive testing (NDT) to support predictive pavement conditions; (3) determination of technical Pavement Condition Rating (PCR) based on the current fleet mix; and (4) update of the PMP that identifies and prioritizes future maintenance, rehabilitation, and/or reconstruction projects for the airside pavements based on the PCI and PCR results.

The PCI studies and PCR values show an accelerated degradation of the runway pavement condition. The pavement degradation rates have disproportionately accelerated on Runway 18-36. The degrading and failing bases contribute to the accelerated PCI and PCR values reduction. Projections show the Runway 18-36 will be in “poor” to “failed” condition in 2027-2028. The HCDA must complete a runway rehabilitation ahead of the 2027-2028 need. See [Appendix A](#) for further information.

1.3 PROPOSED PROJECT

The Proposed Project is the permanent full depth and width runway pavement rehabilitation of Runway 18-36 (see [Figure 1-3](#)). Connected actions to the Proposed Project include the construction of a 6,800-foot-long temporary runway that would be situated between Runway 18-36 and the full parallel Taxiway B to be used during the rehabilitation of Runway 18-36. In addition, the HCDA proposes the construction of taxiway connectors (B3 and B4), 30-footwide temporary runway shoulders, runway edge lighting, and stormwater system improvements (on-Airport stormwater system improvements would be developed during the design phase of the project and in compliance with FAA guidance). As shown in [Figure 1-3](#), the temporary runway would originate at taxiway connector B5 and terminates at taxiway connector B2. After Runway 18-36 rehabilitation is complete, the temporary runway would be converted into a taxiway. To convert the temporary runway to a permanent taxiway, the runway lighting fixtures and runway markings would be removed. Taxiway lighting fixtures and cable and paint the taxiway markings would be installed. To limit the need for reconstruction during the conversion, the conduit and base can infrastructure for the taxiway lighting system would be installed during the initial construction of the temporary runway. No additional pavement or drainage construction is required to convert the temporary runway into a permanent taxiway.

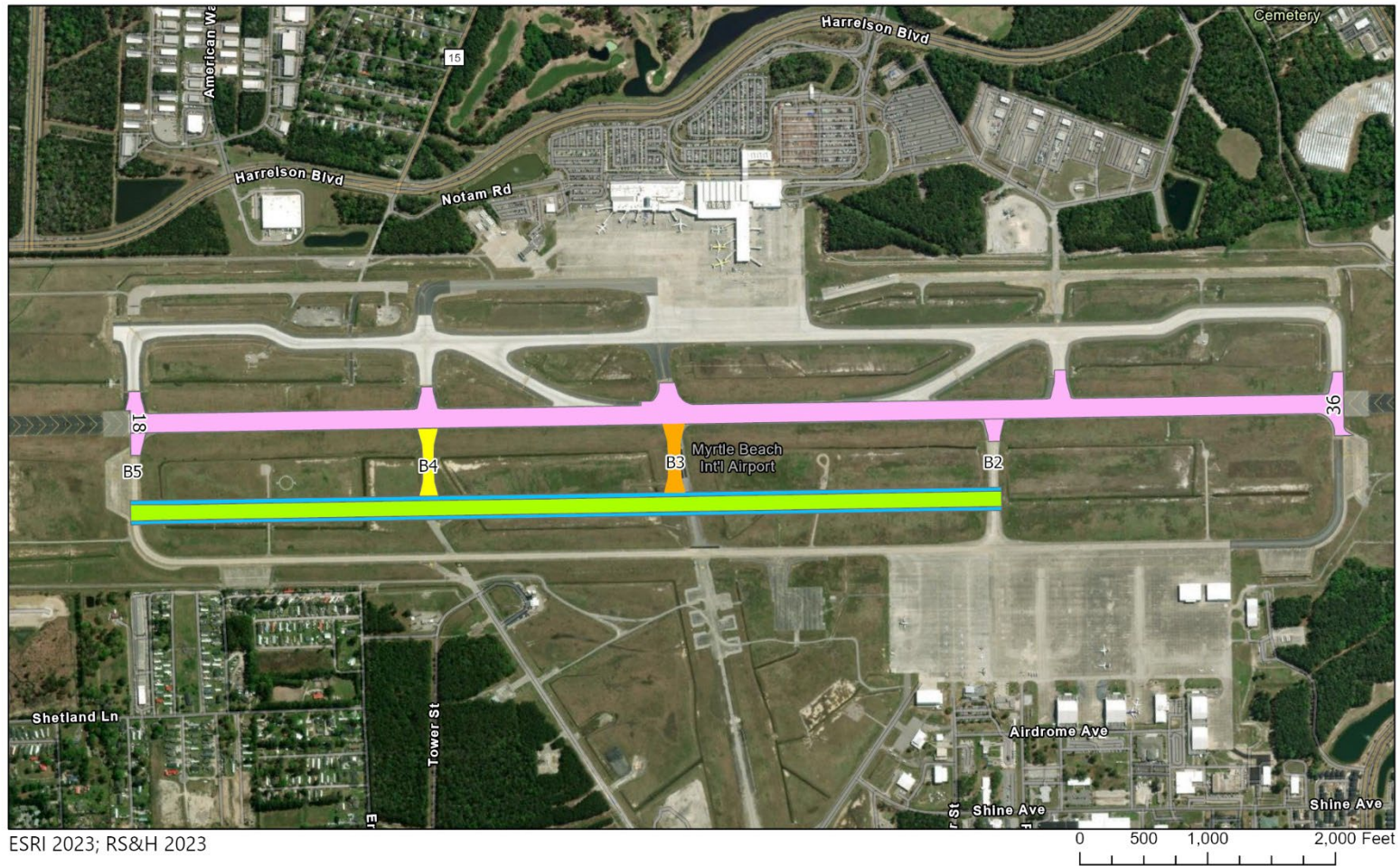
All construction would occur on Airport property. Construction of the temporary runway would begin in 2026. In the fall of 2028, Runway 18-36 rehabilitation construction would begin. For 90 to 120 days of construction, all aircraft operations at MYR would takeoff and land on the temporary runway. Runway 18-36 would reopen in 2029.

The HCDA would seek funding for the Proposed Project from the FAA Airport Improvement Program (AIP), Bipartisan Infrastructure Law (BIL) funds, and HCDA funds (e.g., cash-on-hand match funding). The HCDA intends to submit a grant application to compete for additional AIP Discretionary funds.

1.4 FEDERAL ACTION

The federal action, which is the approval of an updated Airport Layout Plan (ALP), is the construction and operation of the Proposed Project. The federal action is also to ensure that the project does not adversely affect the safety, utility, or efficiency of the Airport. Pursuant to 49 U.S.C. § 47107(a)(16), the FAA Administrator (under authority delegated from the Secretary of Transportation) must approve any revisions or modifications to an ALP before a revision or modification takes effect.

FIGURE 1-3: PROPOSED PROJECT



Legend

-  Runway 18-36 Rehabilitation
-  Temporary Runway
-  Temporary Runway Shoulders (30 feet)
-  Taxiway Connector Rehabilitation
-  Taxiway Connector Construction



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1.5 DOCUMENT ORGANIZATION

This EA is structured to follow the document format described in FAA Orders 1050.1F and 5050.4B. In addition, this document follows the 2020 Council on Environmental Quality (CEQ) National Environmental Policy Act Implementing Regulations regarding an EA not exceeding 75 pages³, not including appendices (CEQ, 2020). **Table 1-2** lists the EA’s chapters and describes the information contained within each.

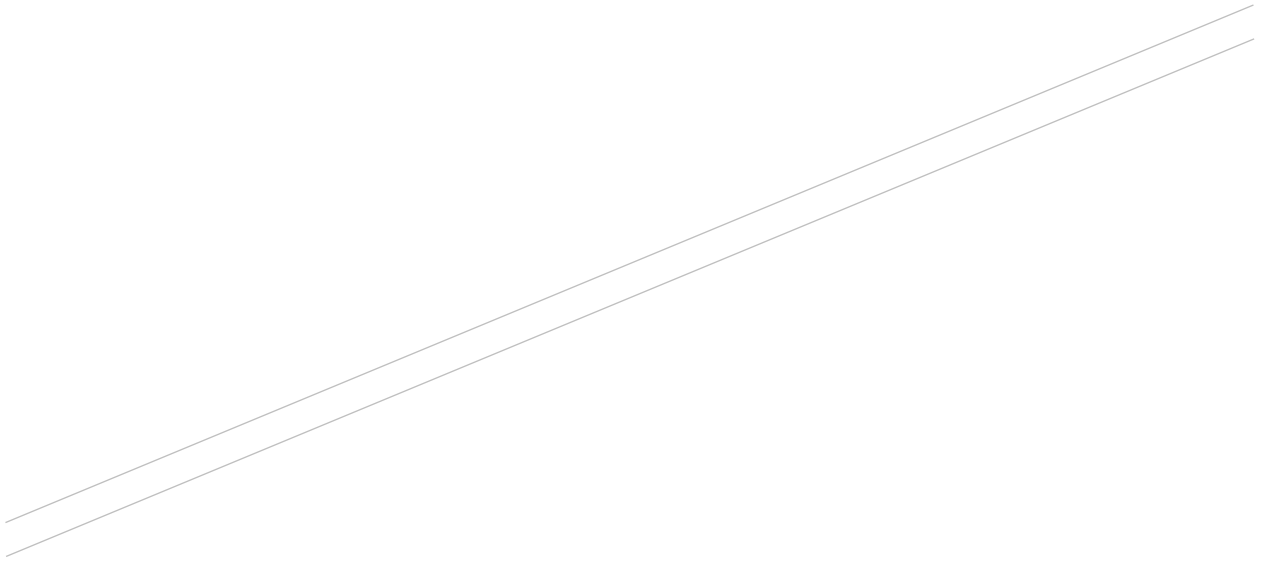
TABLE 1-2: DOCUMENT ORGANIZATION

Chapter	Description
Chapter 1: Introduction / Purpose and Need	This chapter provides an overview of the Airport, discusses the purpose and need of the project, and describes the Proposed Project.
Chapter 2: Alternatives	This chapter presents a description of the No Action Alternative, Preferred Alternative, and a description of each of the alternatives considered in this EA.
Chapter 3: Affected Environment / Environmental Consequences	This chapter presents an overview of the existing environment in the EA’s project study area. It also describes the project’s effects on each environmental resource identified in the FAA Order 5050.4B.
Chapter 4: Agency and Public Involvement	This chapter summarizes the agency and public involvement conducted for this EA.
Chapter 5: List of Preparers	This chapter lists the FAA, HCDA, Airport, and consulting associates who researched, wrote, reviewed, and documented the EA.
Chapter 6: References	This chapter identifies the reference materials used to prepare the EA.
Appendices	The appendices present relevant material, exhibits, and technical reports developed to prepare the EA.

Source: RS&H, 2023.

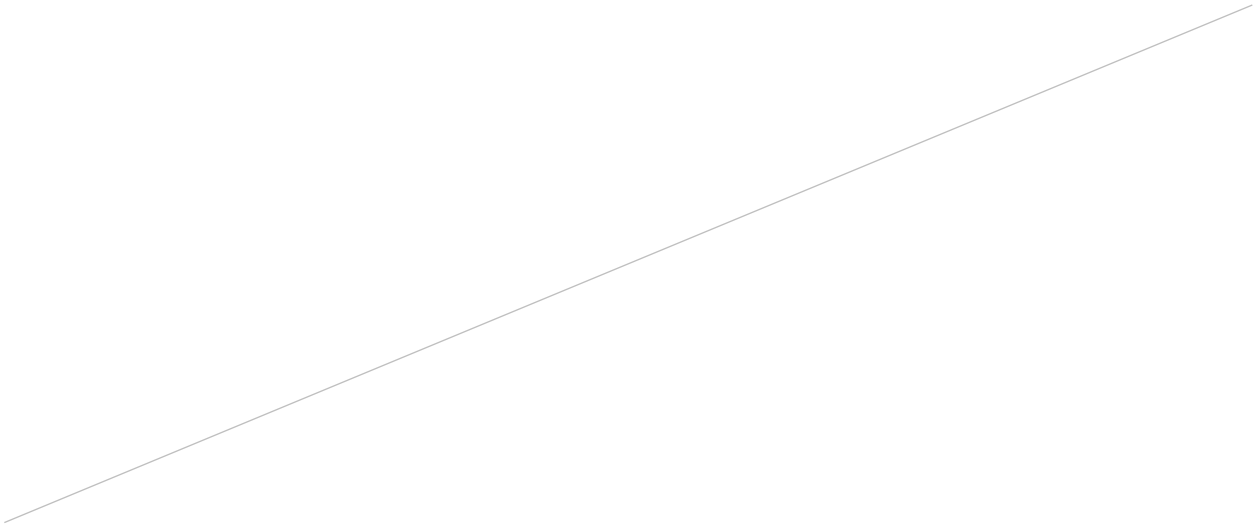
³ “Page” means 500 words and does not include explanatory maps, diagrams, graphs, tables, and other means of graphically displaying quantitative or geospatial information.

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2

ALTERNATIVES



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This chapter describes the alternatives and summarizes the process used to identify, compare, and evaluate the alternatives. Council on Environmental Quality (CEQ) regulations (Title 40 Code of Federal Regulations [C.F.R.] Section 1502.14) regarding the implementation of the National Environmental Policy Act (NEPA) require that federal agencies perform the following tasks:

- » Rigorously explore and objectively evaluate all reasonable alternatives and, for alternatives which were eliminated from detailed study, briefly discuss the reasons for elimination;
- » Devote substantial treatment to each alternative considered in detail, including the Proposed Action, so that reviewers may evaluate their comparative merits;
- » Include reasonable alternatives not within the jurisdiction of the lead agency; and
- » Include the alternative of No Action.

As stated in FAA Order 5050.4B, paragraph 706 (d)(7), an alternative can be eliminated from further consideration when the alternative has been judged “not reasonable.” Whether a proposed alternative is reasonable depends, in large part, upon the extent to which it meets the purpose and need for the Proposed Action (FAA Order 1050.1F, paragraph 7-1.1[e]). As discussed above, 40 C.F.R. 502.14(c)[2020] requires the evaluation of the No Action alternative regardless of whether it meets the stated purpose and need or is reasonable to implement.

2.1 OVERVIEW OF THE ALTERNATIVES SCREENING PROCESS

The alternatives evaluation involves a two-criteria screening process (Criteria 1: Meet the Purpose and Need and Criteria 2: Reasonable and Practicable). Criteria 1 addresses whether the alternative meets the Purpose and Need for the Proposed Project identified in **Chapter 1, Purpose and Need**. Criteria 2 determines whether each alternative was reasonable and practicable regarding comparative safety, environmental, or economic consequences.⁴ Alternatives that did not meet both evaluation criteria were eliminated from further consideration and were not subject to a detailed analysis of environmental impacts in this EA. **Figure 2-1** shows the alternatives screening process.

2.1.1 Alternatives Evaluation Criterion

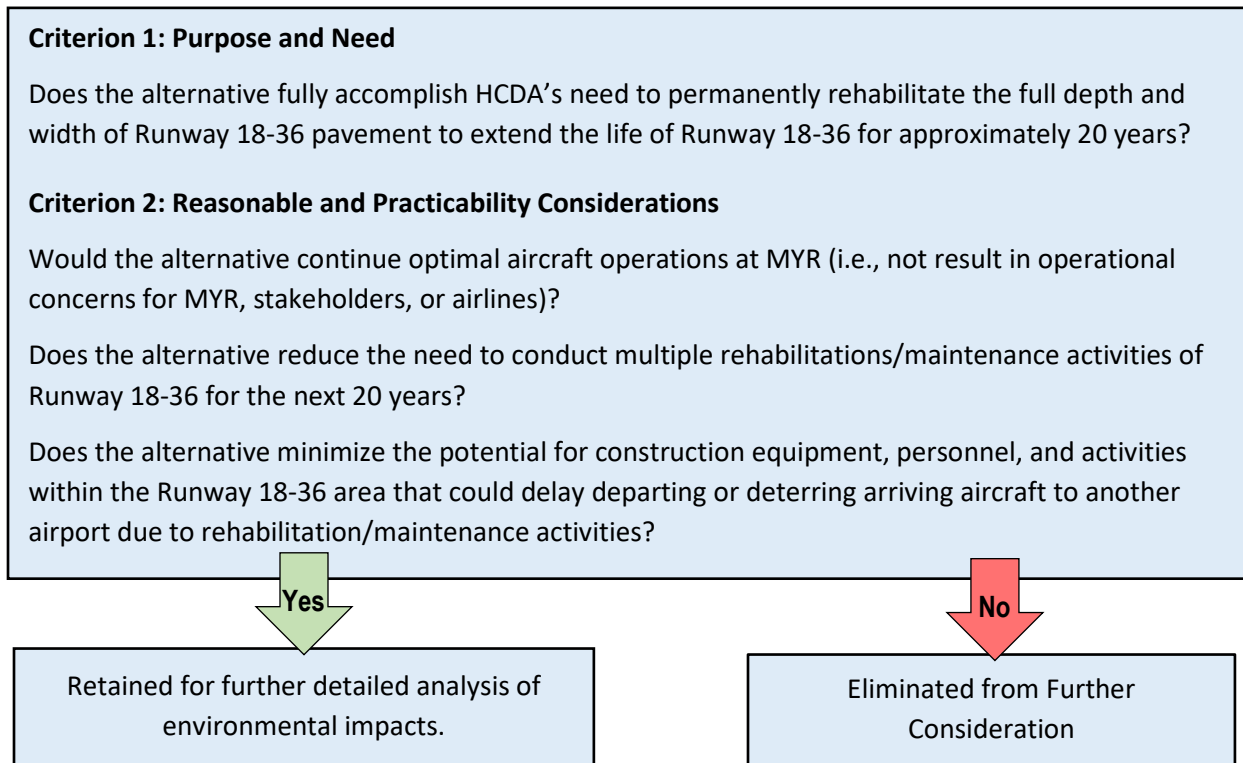
The first criterion of this evaluation focused on whether an alternative met the Purpose and Need of the Proposed Project as described in **Chapter 1**. To determine whether the alternative meets the Purpose and Need of the Proposed Project, the alternative must accomplish HCDA’s plan to permanently rehabilitate the full depth and width of Runway 18-36 pavement to continue safe aircraft operations at the Airport.

The second criterion of this evaluation process focuses on whether the alternative is technically feasible and practicable regarding comparative safety and aircraft operation concerns. The Proposed Project and Alternatives 1-5 were evaluated and compared for the ability to minimize the need for future rehabilitation/maintenance after Runway 18-36 is rehabilitated and the potential to affect aircraft operations over the next 20 years. An alternative that reduces the need to conduct multiple

⁴ CEQ. (2022, April 20). 87 Federal Register 23458.

rehabilitations/maintenance activities of Runway 18-36 over the next 20 years is preferred. An alternative’s construction method with the potential to increase the risk of poor-quality construction resulting in additional rehabilitation activities over the next 20 years is not preferred. Operationally, an alternative that minimizes the potential for delaying departing aircraft or diverting arriving aircraft to another airport due to construction equipment, personnel, and activities within the Runway 18-36 area is preferred. An alternative that could potentially affect arriving or departing aircraft operations of this single-runway Airport would negatively affect stakeholders (i.e., commercial airline operations) and is not preferred.

FIGURE 2-1: ALTERNATIVES CRITERIA EVALUATION



Source: RS&H, 2023.

2.2 ALTERNATIVES CONSIDERED AND EVALUATED

The Proposed Project is described in **Section 1.3**. This EA identifies six alternatives to the Proposed Project: the No Action Alternative and five other build alternatives. The following sections describe and evaluate the alternatives.

2.2.1 No Action Alternative

Under the No Action Alternative, the Proposed Project (i.e., runway rehabilitation) would not be constructed. This alternative would not involve improvements beyond those already programmed or that the Airport Sponsor will undertake for safety, security, or maintenance reasons.

The No Action Alternative would not satisfy the Purpose and Need of the project. Although the No Action Alternative does not meet the criteria associated with the evaluation process, it is being retained for environmental baseline comparative purposes to fulfill CEQ regulations (40 CFR Part 1502)

implementing NEPA and to comply with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*. The No Action Alternative, required by 40 CFR 1502.14(d), serves as a baseline to compare the impacts of any reasonable alternatives considered.

2.2.2 Proposed Project (Preferred Alternative)

Section 1.3 describes the Proposed Project as the permanent full depth and width runway pavement rehabilitation of Runway 18-36 (see **Figure 1-3**). See **Section 1.3** for further details on the project description.

The Proposed Project would fully meet the Purpose and Need described in **Chapter 1**. The Proposed Project would permanently rehabilitate the full depth and width of Runway 18-36 pavement to continue safe aircraft operations at the Airport. The Proposed Project would provide aircraft stakeholders with 6,800 feet of temporary runway needed for the existing commercial aircraft fleet to continue uninterrupted operations. Nighttime closures of the temporary runway would not be conducted. Therefore, the Proposed Project would not affect daily aircraft operations during rehabilitation. The Proposed Project would schedule the construction for cold joints during the daytime to increase the quality and longevity of the rehabilitated Runway 18-36, resulting in the least need for future rehabilitation/maintenance activities. Therefore, the Proposed Project (Preferred Alternative) would have the least potential for future aircraft operational delays or diversions.

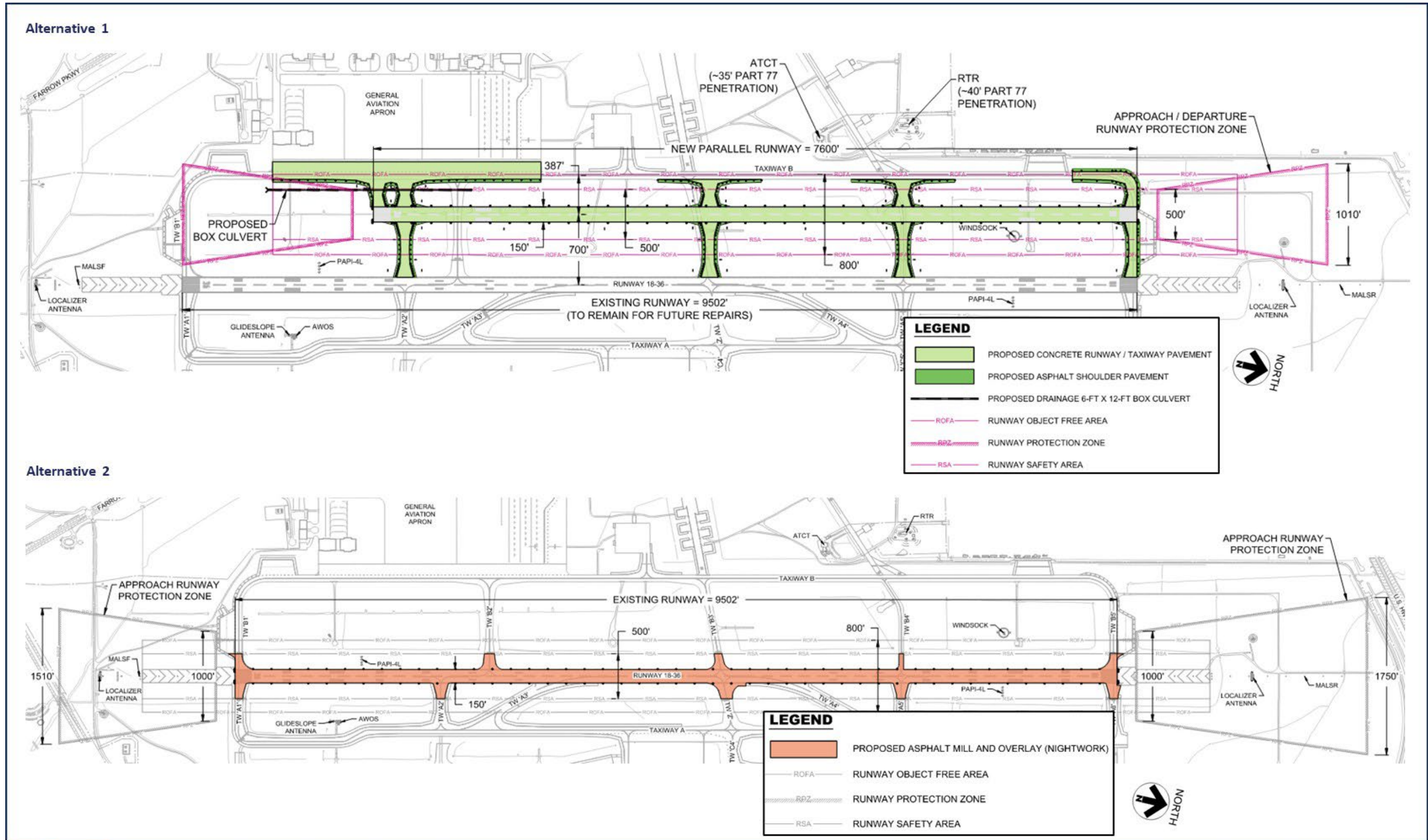
2.2.3 Alternative 1 – New Parallel Runway

Alternative 1 is the construction and operation of an additional new 7,600-foot parallel runway (designated Runway 18R-36L) between existing Runway 18-36 and Taxiway B (see **Figure 2-2**). A connected action to Alternative 1 includes constructing runway edge lighting improvements for both runways. The new parallel Runway 18R-36L would be 150-feet wide but not include pavement shoulders (matching existing Runway 18-36). Once Runway 18R-36L is constructed and operational, Runway 18L-36R (i.e., currently designated Runway 18-36) would be closed and rehabilitated with an asphalt overlay. After rehabilitation, Runway 18L-36R would reopen, and the Airport would operate with two parallel runways to accommodate its commercial aircraft fleet.

Alternative 1 does not fully meet the described Purpose and Need because the alternative's asphalt overlay rehabilitation is a short-term solution for the existing Runway 18-36 pavement. As described in **Chapter 1**, Runway 18-36 needs permanent full depth and width pavement rehabilitation.

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FIGURE 2-2: ALTERNATIVE 1 AND ALTERNATIVE 2



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In addition, this alternative was initially proposed as an imminent need due to the increasing aircraft operations that existed at MYR pre-COVID (2020). At that time, helicopter operations from MYR were counted into the Airport's total operations due to their flight path "crossing" the extended Runway 18-36 centerline. The FAA and stakeholders revised and approved those tourist helicopter routes in 2022 and no longer cross the extended Runway 18-36 centerline. Therefore, they no longer count as MYR operations for Runway 18-36. The reduction of the number of operations on MYR's single runway negates any justification for a new parallel runway.

Therefore, since Alternative 1 does not fully meet the Purpose and Need and operational concern (non-standard pavement shoulders), it was not carried forward in this EA for further environmental considerations.

2.2.4 Alternative 2 – Nightly Mill and Overlay

Alternative 2 utilizes nightly Runway 18-36 closures to mill and overlay the existing runway pavement surface (see *Figure 2-2*). A connected action to Alternative 2 includes constructing runway edge lighting improvements. Each night, Runway 18-36 would be closed (approximately midnight), and the selected construction contractor would perform the pavement rehabilitation activities. Before early morning aircraft operations resume (approximately 5 am), rehabilitation activities would end, construction equipment and personnel would be removed from the construction area, and Runway 18-36 would reopen for daily aircraft operations. This method of rehabilitating Runway 18-36 would occur each night until the entire 9,502-foot runway is milled and overlaid with new asphalt. FAA Notices to Airmen (NOTAMs) describing the runway's operational status would be published for pilots.

Alternative 2 does not fully meet the described Purpose and Need because the alternative's asphalt overlay rehabilitation is a short-term solution for the existing Runway 18-36 pavement. As described in *Chapter 1*, Runway 18-36 needs a permanent full depth and width pavement rehabilitation for continued safe aircraft operations at the Airport. Alternative 2 also has operational and construction method concerns. This alternative would require multiple nighttime runway closures to conduct pavement rehabilitation activities. If Runway 18-36 is not reopened on time each morning, daily departure aircraft operations could be delayed, or arriving aircraft could be diverted to another airport. This scenario occurred multiple times in 2014 when the Runway 18-36 mill and overlay rehabilitation was previously implemented.

Constructing cold joints work at night increases the risk of poor-quality construction. The first place that a properly constructed asphalt pavement begins to deteriorate is the paving joints. As asphalt ages it stiffens and contracts causing the paving joints to become stressed and open. This provides a path for water to enter the base and starts the process of rutting and eventually pavement failure. More joints equal more opportunity for water to enter the base.

In addition, the continued degradation of the base and subbase would require Alternative 2's rehabilitation method to occur more frequently. For Alternative 2 to provide an equivalent 20-year life, three to four mill and overlays would be required over the next 20 years. It is also probable that the frequency of the need for rehabilitation would continue to increase as this alternative does not address the base and subbase course degradation. Alternative 2 would also have the greatest effect on Airport

stakeholders and the greatest risks to affecting daily operations each time mill and overlay construction activities need to occur over the next 20 years.

Therefore, since Alternative 2 does not fully meet the Purpose and Need and results in engineering constructability and operational concerns, it was not carried forward in this EA for further environmental considerations.

2.2.5 Alternative 3 – Displaced Thresholds for Concrete Touchdown Zone (TDZ) Areas and Mill and Overlay of Runway Center

Alternative 3 is similar to Alternative 2 but requires concrete reconstruction within each runway touchdown area (see **Figure 2-3**). A connected action to Alternative 3 includes constructing runway edge lighting improvements. This three-phased approach would result in a full-depth reconstruction (i.e., repairing the base and subbase below) for about 2,300 feet of each runway end (first 2,300 feet at the Runway 18 end and first 2,325 feet at the Runway 36 end). These portions of the runway are the most critical pavements because it is also the area where the aircraft travel the slowest with the heaviest loads (full of fuel) immediately before takeoff. The remaining center length of runway pavement (approximately 4,877 feet) would be rehabilitated by the same mill and overlay construction method as Alternative 2. As with Alternative 2, the base and subbase courses in the middle runway section would not be addressed, and three to four mill and overlay rehabilitations would be needed over 20 years.

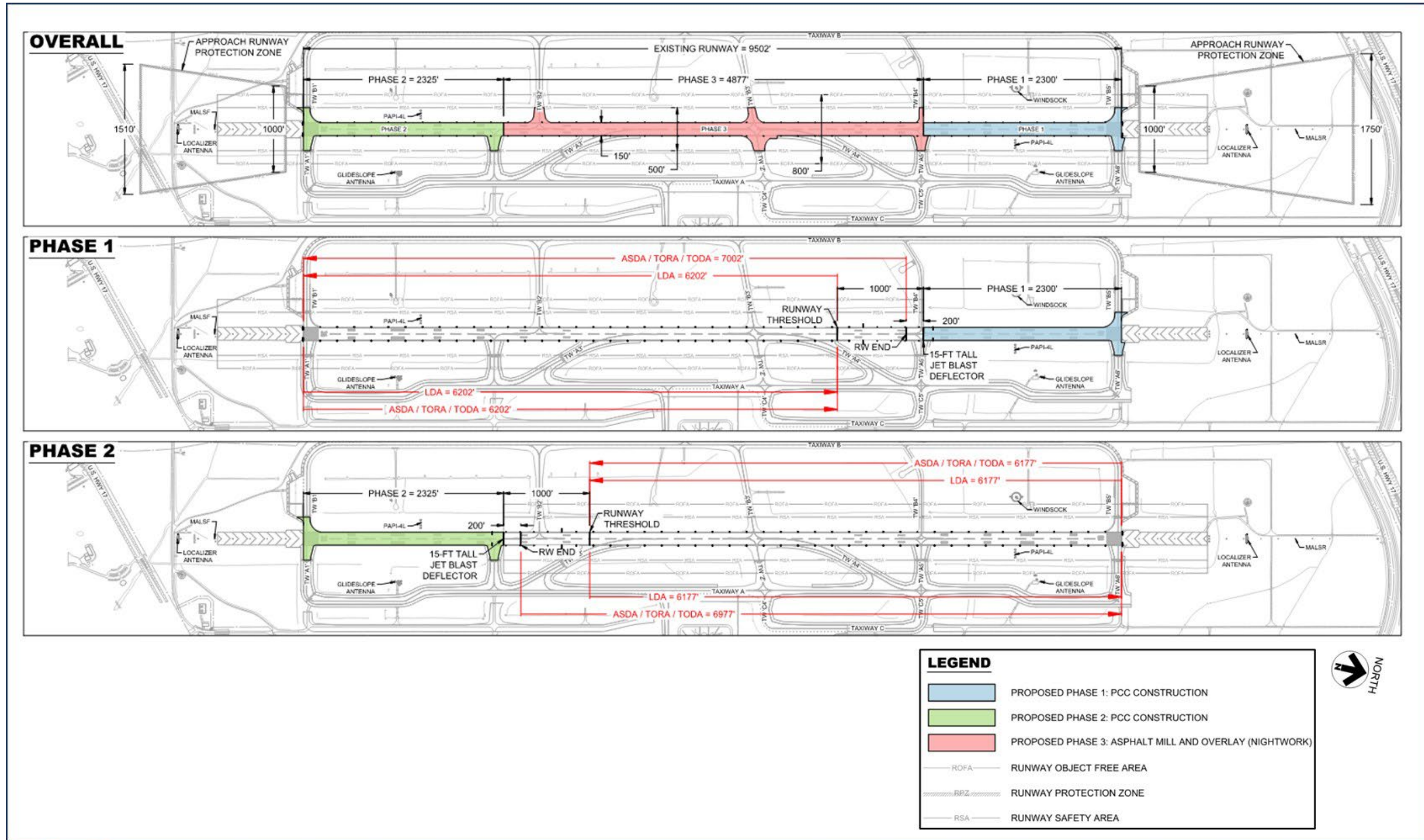
Each night, Runway 18-36 would be closed (approximately midnight), and the selected construction contractor would perform the Alternative 3 pavement rehabilitation activities. Before early morning aircraft operations resume (approximately 5 am), rehabilitation activities would end, construction equipment and personnel would be removed from the construction area, and Runway 18-36 would reopen for daily aircraft operations. This method of rehabilitating Runway 18-36 would occur each night until the 9,502-foot runway is rehabilitated. FAA NOTAMs describing the runway's operational status would be published for pilots.

Alternative 3 does not fully meet the described Purpose and Need because the alternative's asphalt overlay rehabilitation is a short-term solution for the existing Runway 18-36 pavement. As described in **Chapter 1**, Runway 18-36 needs a permanent full depth and width pavement rehabilitation for continued safe aircraft operations at the Airport. Alternative 3 also has operational and construction method concerns. This alternative would require multiple nighttime runway closures to conduct pavement rehabilitation activities. If Runway 18-36 is not reopened on time each morning, daily departure aircraft operations could be delayed, or arriving aircraft could be diverted to another airport. This scenario occurred multiple times in 2014 when the Runway 18-36 mill and overlay rehabilitation was previously implemented.

Constructing cold joints work at night increases the risk of poor-quality construction. As described previously, the first place that a properly constructed asphalt pavement begins to deteriorate is the paving joints. As asphalt ages it stiffens and contracts causing the paving joints to become stressed and open. This provides a path for water to enter the base and starts the process of rutting and eventually pavement failure. More joints equal more opportunity for water to enter the base.

As shown in **Figure 2-3** and **Table 2-1**, the Runway 18-36 dimensions would vary during construction.

FIGURE 2-3: ALTERNATIVE 3



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Operations to the north in Phase 1 and to the south in Phase 2 only have approximately 6,200 feet of runway length, which would limit the type of aircraft and their weight. MYR coordinated the alternatives with stakeholders and airlines. MYR stakeholders and airlines stated 6,800 feet of runway length is their absolute minimum to operate at MYR. They would not be able to operate the larger ADG-III aircraft with only 6,200 feet of runway.

TABLE 2-1: ALTERNATIVE 3 PHASED RUNWAY DIMENSIONS

Description	Runway 18		Runway 36	
	Phase 1	Phase 2	Phase 1	Phase 2
Runway Pavement Inactive Due to Construction	2,300 ft.	2,325 ft.	2,300 ft.	2,325 ft.
Accelerate-Stop Distance Available (ASDA), Takeoff Run Available (TORA), and Takeoff Distance Available (TODA)	7,002 ft.	6,177 ft.	6,202 ft.	6,977 ft.
Landing Distance Available (LDA)	6,202 ft.	6,177 ft.	6,202 ft.	6,177 ft.

Notes: ft. = feet. Phase 3 would not change the runway dimensions because it would be closed and reopened after each night construction activities end. Source: RS&H, Inc. 2023.

Alternative 3 does not fully meet the Purpose and Need and results in engineering constructability and operational concerns, therefore, it was not carried forward in this EA for further environmental considerations.

2.2.6 Alternative 4 - Displaced Thresholds and New Paved Overruns for Extended Concrete TDZ Areas and Mill and Overlay of Runway Center

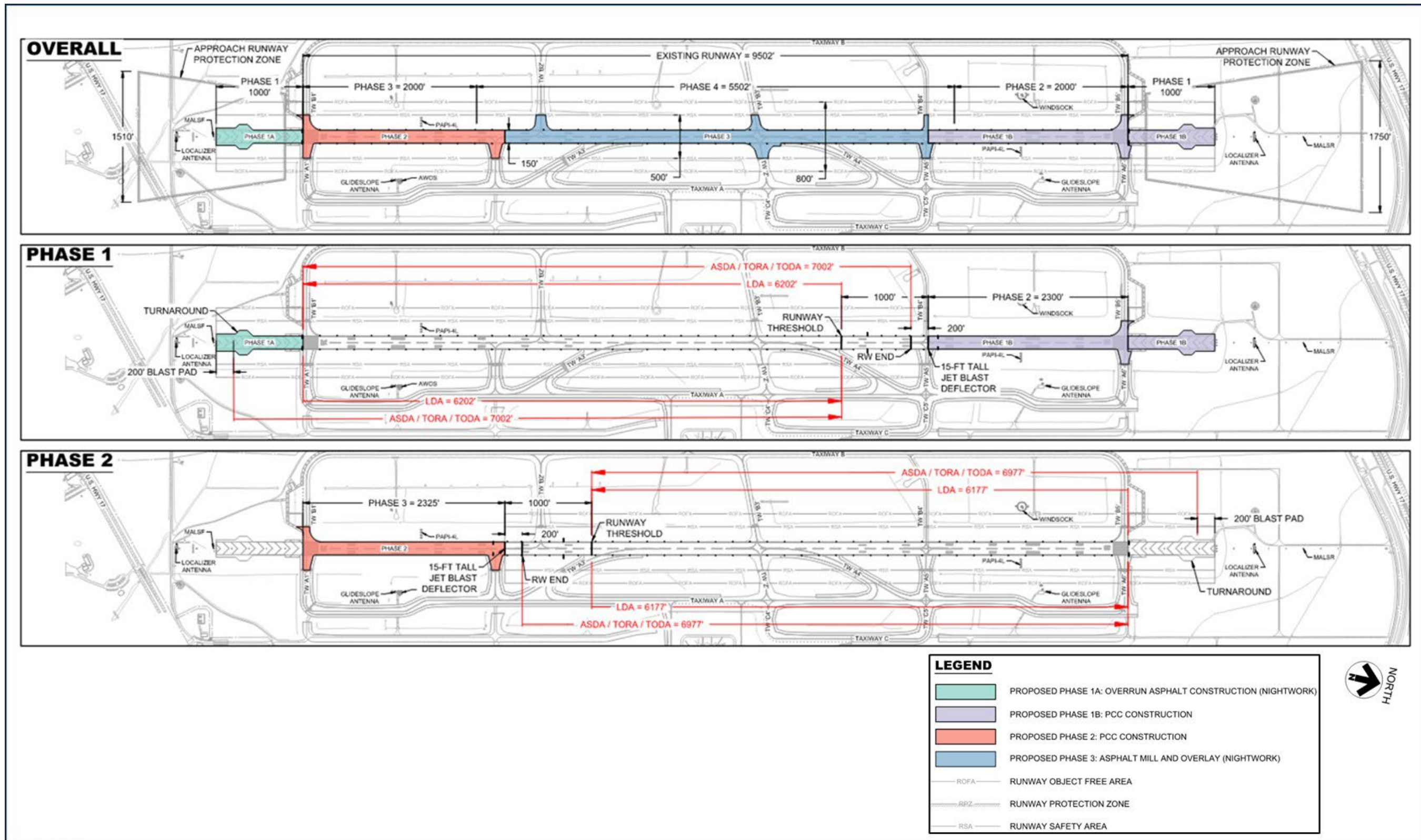
Alternative 4 builds on Alternatives 2 and 3 with a four-phased approach, replacing and rebuilding the paved overruns on each runway end (see *Figure 2-4*). Connected actions to Alternative 4 include constructing runway edge lighting and stormwater system improvements. This alternative's construction approach takes advantage of the additional pavement built on each runway end initially constructed for military use (i.e., heavier aircraft). Compared to Alternatives 2 and 3, this alternative would increase the landing distance available (LDA) and takeoff distance available (TODA) during pavement rehabilitation activities.

Each night, Runway 18-36 would be closed (approximately midnight), and the selected construction contractor would perform the Alternative 4 pavement rehabilitation activities. Before early morning aircraft operations resume (approximately 5 am), rehabilitation activities would end, construction equipment and personnel would be removed from the construction area, and Runway 18-36 would reopen for daily aircraft operations. This method of rehabilitating Runway 18-36 would occur each night until the 9,502-foot runway is rehabilitated. FAA NOTAMs describing the runway's operational status would be published for pilots.

Alternative 4 does not fully meet the described Purpose and Need because the alternative's asphalt overlay rehabilitation is a short-term solution for 5,502 feet of Runway 18-36 of the existing pavement. As described in *Chapter 1*, Runway 18-36 needs a permanent full depth and width pavement rehabilitation for continued safe aircraft operations at the Airport. Alternative 4 also has operational and construction method concerns.

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FIGURE 2-4: ALTERNATIVE 4



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This alternative would require multiple nighttime runway closures to conduct pavement rehabilitation activities. If Runway 18-36 is not reopened on time each morning, daily departure aircraft operations could be delayed, or arriving aircraft could be diverted to another airport. This scenario occurred multiple times in 2014 when the Runway 18-36 mill and overlay rehabilitation was previously implemented.

As described previously, the first place that a properly constructed asphalt pavement begins to deteriorate is the paving joints. As asphalt ages it stiffens and contracts causing the paving joints to become stressed and open. This provides a path for water to enter the base and starts the process of rutting and eventually pavement failure. More joints equal more opportunity for water to enter the base.

In addition, Alternative 4 would require pilots to conduct a difficult double-back turnaround maneuver on overruns of their aircraft. As shown in *Figure 2-4* and *Table 2-2*, the Runway 18-36 dimensions would vary. MYR coordinated the alternatives with stakeholders and airlines. MYR stakeholders and airlines stated 6,800 feet of runway length is their absolute minimum to operate at MYR. Alternative 4 would provide the stakeholder and airlines with the needed 6,800 feet of runway to continue aircraft operations during rehabilitation.

TABLE 2-2: ALTERNATIVE 4 PHASED RUNWAY DIMENSIONS

Description	Runway 18		Runway 36	
	Phase 1	Phase 2	Phase 1	Phase 2
Runway Pavement In-Active Due to Construction	1,000 ft. / 2,300 ft.	2,325 ft.	1,000 ft. / 2,300 ft.	2,325 ft.
Accelerate-Stop Distance Available (ASDA), Takeoff Run Available (TORA), and Takeoff Distance Available (TODA)	7,002 ft.	6,977 ft.	7,002 ft.	6,977 ft.
Landing Distance Available (LDA)	6,202 ft.	6,177 ft.	6,202 ft.	6,177 ft.

Notes: ft. = feet. Phase 4 would not change the runway dimensions because it would be closed and reopened after each night construction activities end.

Source: RS&H, Inc. 2023.

Alternative 4 does not fully meet the Purpose and Need and results in engineering constructability and operational concerns, therefore, it was not carried forward in this EA for further environmental considerations.

2.2.7 Alternative 5 - Concrete Keel Section with Bituminous Pavement Outboard Paving

Alternative 5 is the same reconstruction approach as the Proposed Project; however, it reduces the new concrete wearing surface to 100 feet in width rather than the full 150-foot width (see *Figure 2-5*). This alternative would rehabilitate the outboard 25-foot sections with mill and overlay while reconstructing the full 150-foot width at taxiway intersections. Connected actions to Alternative 5 include the construction of a 6,800-foot temporary runway between Runway 18-36 and the full parallel Taxiway B. In addition, the HCDA proposes the construction of 30-foot-wide temporary runway shoulders, runway edge lighting, and stormwater system improvements. *Figure 2-5* shows that the temporary runway

starts at taxiway connector B5 and ends at taxiway connector B2. After Runway 18-36 rehabilitation, the temporary runway would be converted into a taxiway.

Alternative 5 would not fully meet the Purpose and Need to permanently rehabilitate the full depth and width of Runway 18-36 pavement. Alternative 5 would provide aircraft stakeholders with 6,800 feet of temporary runway needed for the existing commercial aircraft fleet to continue uninterrupted operations. Nighttime closures of the temporary runway would not be conducted to rehabilitate Runway 18-36. Alternative 5 would not affect daily aircraft operations during construction, as was needed in 2014. In addition, this alternative would schedule the construction for cold joints during the daytime to increase the quality and longevity of the rehabilitated Runway 18-36.

However, Alternative 5 has constructability concerns. The construction contractor would need to preserve the deteriorating outboard sections of the existing runway, while reconstructing the runway keel (i.e., center) section. This constrains the contractor's work area and requires extra time and attention to protect the remaining pavement. In addition, during construction, the existing deteriorating base would be exposed to weather elements (e.g., rain) after the keel section is demolished. This increases the risk of accelerated deterioration of the remaining existing base.

While Alternative 5 would not be as maintenance intensive as Alternatives 1-4, it would require more maintenance than the Proposed Project. This is because of the number of asphalt to portland cement concrete (PCC) joints between the PCC keel sections and the remaining existing outboard asphalt sections. Even though these joints would see minimal aircraft traffic across them, there is engineering constructability concerns about the long-term performance because the existing asphalt section would not have an appropriately thickened base to handle the aircraft load transfer across the joint. In addition, the outboard sections would not be replaced and would continue to deteriorate at an increasing rate. This could potentially adversely affect the base of the new PCC section adjacent to it.

Alternative 5 also has operational concerns after the Runway 18-36 rehabilitation. Over the next 20 years, this alternative could require multiple nighttime runway closures to conduct mill and overlay rehabilitation activities of the outboard sections of the runway. Each night, Runway 18-36 would be closed (approximately midnight), and the selected construction contractor would perform pavement rehabilitation activities. Before early morning aircraft operations resume (approximately 5 am), rehabilitation activities would end, construction equipment and personnel would be removed from the construction area, and Runway 18-36 would reopen for daily aircraft operations. FAA NOTAMs describing the runway's operational status would be published for pilots each time the runway was closed. If Runway 18-36 is not reopened on time each morning, daily departure aircraft operations could be delayed, or arriving aircraft could be diverted to another airport. This scenario occurred multiple times in 2014 when the Runway 18-36 mill and overlay rehabilitation was previously implemented.

Alternative 5 does not fully meet the Purpose and Need and results in construction and operational concerns, therefore, it was not carried forward in this EA for further environmental considerations.

2.3 ALTERNATIVES RETAINED FOR DETAILED ANALYSIS

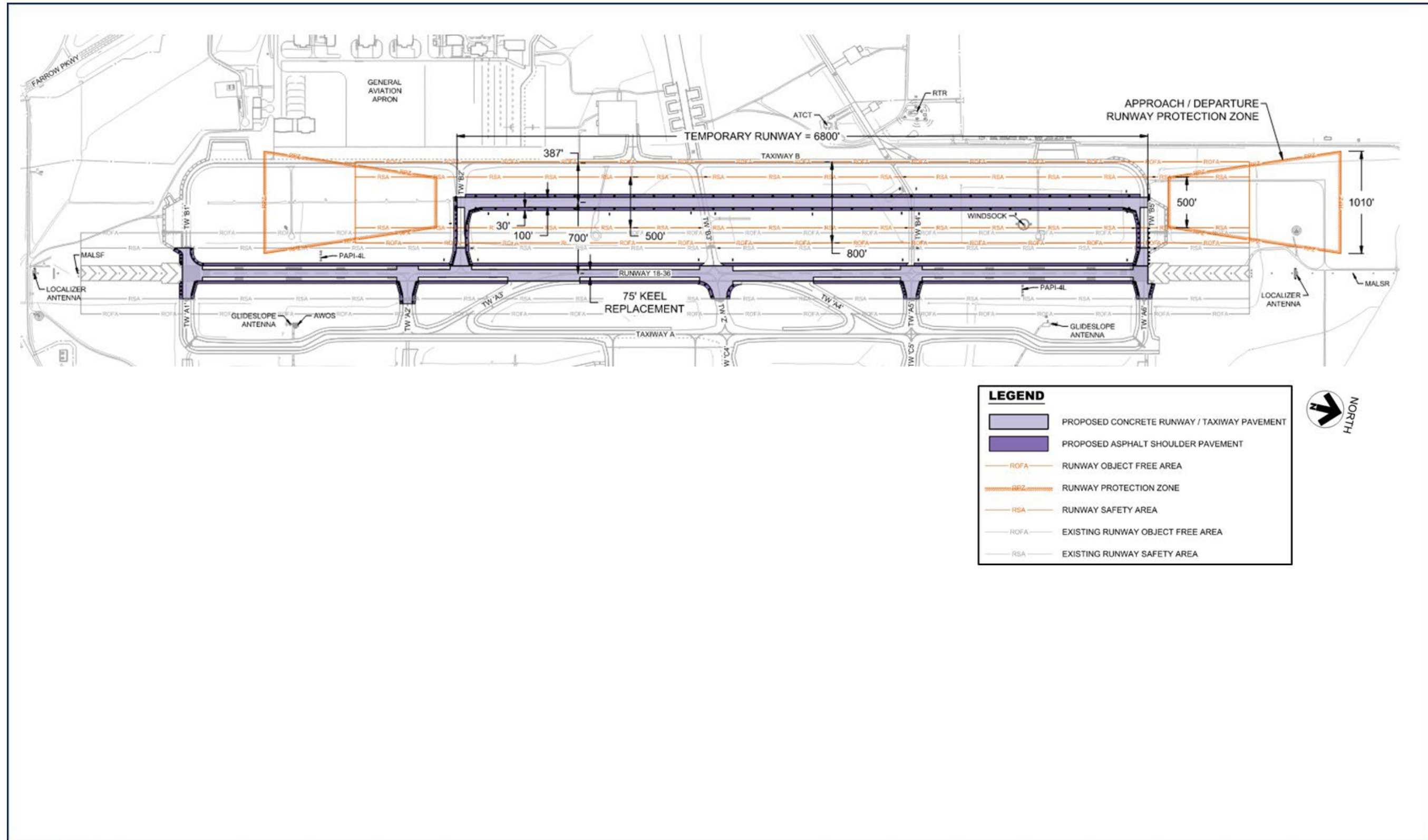
Table 2-3 summarizes the alternatives evaluation results.

The No Action Alternative would not satisfy the Purpose and Need and does not satisfy the evaluation criterion. However, the EA retains the No Action Alternative for environmental baseline comparative purposes, to fulfill CEQ regulations (40 CFR Part 1502.14(c))[2020], and to comply with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, and FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*.

Based on evaluating reasonable alternatives to achieve the project's purpose and comparing alternatives, the Proposed Project (Preferred Alternative) is retained for further environmental analysis (see **Chapter 3** for further details).

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Figure 2-5: Alternative 5



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TABLE 2-3: ALTERNATIVES EVALUATION SUMMARY

Criteria	No Action Alternative	Proposed Project	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Purpose and Need							
Does the Alternative Meet the Purpose and Need?	N/A ¹	Yes	No ²	No ²	No ²	No ²	No ²
Reasonable and Practicability Considerations							
Would the alternative result in optimal aircraft operations at MYR (i.e., not result in operational concerns for MYR, stakeholders, or airlines)?	-	Yes	No	No	No	No	No
Does the alternative reduce engineering constructability concerns (i.e., reduced multiple rehabilitations/maintenance activities of Runway 18-36 for the next 20 years)?		Yes	Yes	No	No	No	No
Does the alternative minimize the potential for construction equipment, personnel, and activities within the Runway 18-36 area that could delay departing or deterring arriving aircraft to another airport due to rehabilitation/maintenance activities?	-	Yes	Yes	No	No	No	No
Meets Screening Criteria							
Does Not Meet Screening Criteria							

Note: ¹ No Action Alternative for environmental baseline comparative purposes, to fulfill CEQ regulations (40 CFR Part 1502) implementing NEPA, and to comply with FAA Order 1050.1F, Environmental Impacts: Policies and Procedures, and FAA Order 5050.4B, National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions.

² Alternative partially meets the described Purpose and Need and was analyzed further based on the reasonable and practicability considerations.

Source: RS&H, 2023.

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3

*AFFECTED ENVIRONMENT AND
ENVIRONMENTAL CONSEQUENCES*



RS&H

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

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3.1 INTRODUCTION

As per the Council on Environmental Quality (CEQ) National Environmental Policy Act (NEPA) Implementing Regulations 40 CFR Parts 1500 – 1508, dated 2020, FAA Orders *1050.1F Environmental Impacts: Policies and Procedures*, and *5050.4B National Environmental Policy Act Implementing Instructions for Airport Actions*, this chapter describes the existing environmental condition (i.e., Affected Environment) as well as environmental resources that the Proposed Project may affect compared to a No Action Alternative (i.e., Environmental Consequences).

A direct and indirect study area was developed to identify environmental conditions and potential impacts of the Proposed Project. The Airport property defines the direct project study area which includes the Proposed Project's area of ground disturbing activities (i.e., construction of a temporary runway). The 2028 No Action Alternative and Proposed Project DNL 65 dBA noise contour defines the indirect study area. *Figure 3-1* shows each study area (collectively referred to as the project study areas).

The environmental analysis in this chapter discloses the potential impacts on the future condition. The construction of the temporary runway is approximately 16 months, and the reconstruction of Runway 18/36 is approximately 4 months. The EA uses 2026, 2028 and 2029 (as appropriate) as the study years for analysis. From 2026-2027 construction of the temporary runway would occur. Reconstruction of Runway 18/36 would occur in 2028 with aircraft operations shifted to the temporary runway. The re-opening of the reconstructed Runway 18/36 would occur in 2029. The 2028 study year is for the aircraft noise analysis purposes when aircraft operations are shifted to the temporary runway. To evaluate potential impacts, the analyses in this chapter overlay the components of the Proposed Project and No Action Alternative onto the conditions within the project study areas for each environmental impact category presented.

3.2 RESOURCES NOT AFFECTED BY PROPOSED PROJECT

The following environmental resources are described to disclose the Proposed Project's absence of effects compared to a No Action Alternative and are not further described in this EA.

- » **Children's Environmental Health and Safety Risks** - Lakewood Elementary School is the closest public school, about 2.5 miles southwest of the project study areas. Palmetto Academy of Learning and Success is the closest private school, about 1.25 miles northwest of the project study areas. Construction and operation of the Proposed Project would occur entirely on Airport property. Due to the distance to the two closest schools and construction entirely on Airport property, the Proposed Project would not increase the exposure of environmental contaminants to children in the surrounding community. Therefore, the Proposed Project would not affect children's environmental health and safety risks.
- » **Coastal Resources** – The Proposed Project is located within the South Carolina Coastal Zone Management Program (CZMP), as Horry County is within the CZMP (Office of Ocean and Coastal Resource Management, 2023). Therefore, the Proposed Project would be subject to DHEC's Office of Ocean and Coastal Resources Management guidelines. Construction of the Proposed Project would follow all CZMP guidelines. It would not affect wetlands or geographical areas of particular concern.

FIGURE 3-1: PROJECT STUDY AREAS



Sources: ESRI 2023; RS&H 2023; Parrish & Partners 2022

Legend

- Direct Project Study Area - Airport Property
- Indirect Project Study Area



3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Activities or facilities dependent on coastal location, including state ports and navigation channels, are not present within the project study areas. Areas of Special Historic, Archaeological, or Cultural Significance, which consist of NHRP-listed resources, are not located within the project study areas. Therefore, no geographical areas of particular concern would be affected by the Proposed Project. Coastal Zone Consistency would be sent to the South Carolina S.C. Department of Health and Environmental Control (DHEC) during the project's design phase. A DHEC coastal zone consistency letter would be obtained before the beginning of construction activities.

- » **Department of Transportation (DOT), Section 4(f) Resources** – There are no DOT Section 4(f) resources within the project study areas (see **Figure 3-2**). The closest Section 4(f) resource is Valor Memorial Garden, about 0.5 mile west of the project study areas. It is separated by aeronautical and commercial development (City of Myrtle Beach, 2023). The Proposed Project is entirely on Airport property. Based on the aircraft noise analysis described in **Section 3.4.5**, there would be no change in aircraft noise exposure and no significant noise impacts. Due to the distance to the closest Section 4(f) resource and no significant noise impacts, the Proposed Project would not directly or indirectly affect a DOT Section 4(f) resource.

There are no Section 6(f) Land and Water Conservation Fund (LWCF) resources within the direct study area (see **Figure 3-2**). The closest Section 6(f) resource is Myrtle Beach Grand Park, approximately 1 mile west of the direct project study area, and Myrtle Beach State Park, located 1.5 miles from the direct project study area and is located within the indirect study area. It is separated by US-17 South Kings Highway and urban development (The Land and Water Conservation Fund, 2023). Based on the aircraft noise analysis described in **Section 3.4.5**, there would be no change in aircraft noise exposure and no significant noise impacts. Therefore, the Proposed Project would not directly or indirectly affect a Section 6(f) resource.

- » **Farmlands** – According to the Natural Resources Conservation Service (NRCS), soils within the direct study area are classified as farmland of statewide importance and prime farmland if drained (USDA, 2023). Under Section 523(10)(B) of the Farmlands Protection Policy Act (FPPA) Manual, farmland soils are not subject to the provisions of the FPPA if they are already in urbanized areas (NRCS, 2013). Section 658.2(a) of the FPPA describes the use of U.S. Census Bureau Urban Areas maps as an appropriate way to define urban areas (USDA, 1984). The U.S. Census Bureau Urban Areas map was reviewed to determine which portions of the direct study area were not subject to the provisions of the FPPA. The Airport, including the direct study area, is in the “Myrtle Beach Socastee, SC-NC 60895” urban area. In addition, according to the 2020 U.S. Census Urban Area Criteria, the Airport is an urban area because it is a “currently functioning airport within a distance of 0.5 miles to the urban area that is a qualified cargo airport or has an annual enplanement of at least 2,500 passengers” (Census Bureau, 2022). In 2021, the Airport had 1,382,551 enplanements (i.e., passengers who boarded a commercial service aircraft) (FAA, 2023). Therefore, the Proposed Project is exempt from the FPPA and would not affect prime, unique, or state-significant farmland soil types.

FIGURE 3-2: ENVIRONMENTAL RESOURCES NOT AFFECTED



Legend

-  Section 4(f) & 6(f) Resources
-  Schools
-  Direct Study Area
-  Indirect Study Area
-  NRHP Listed Building



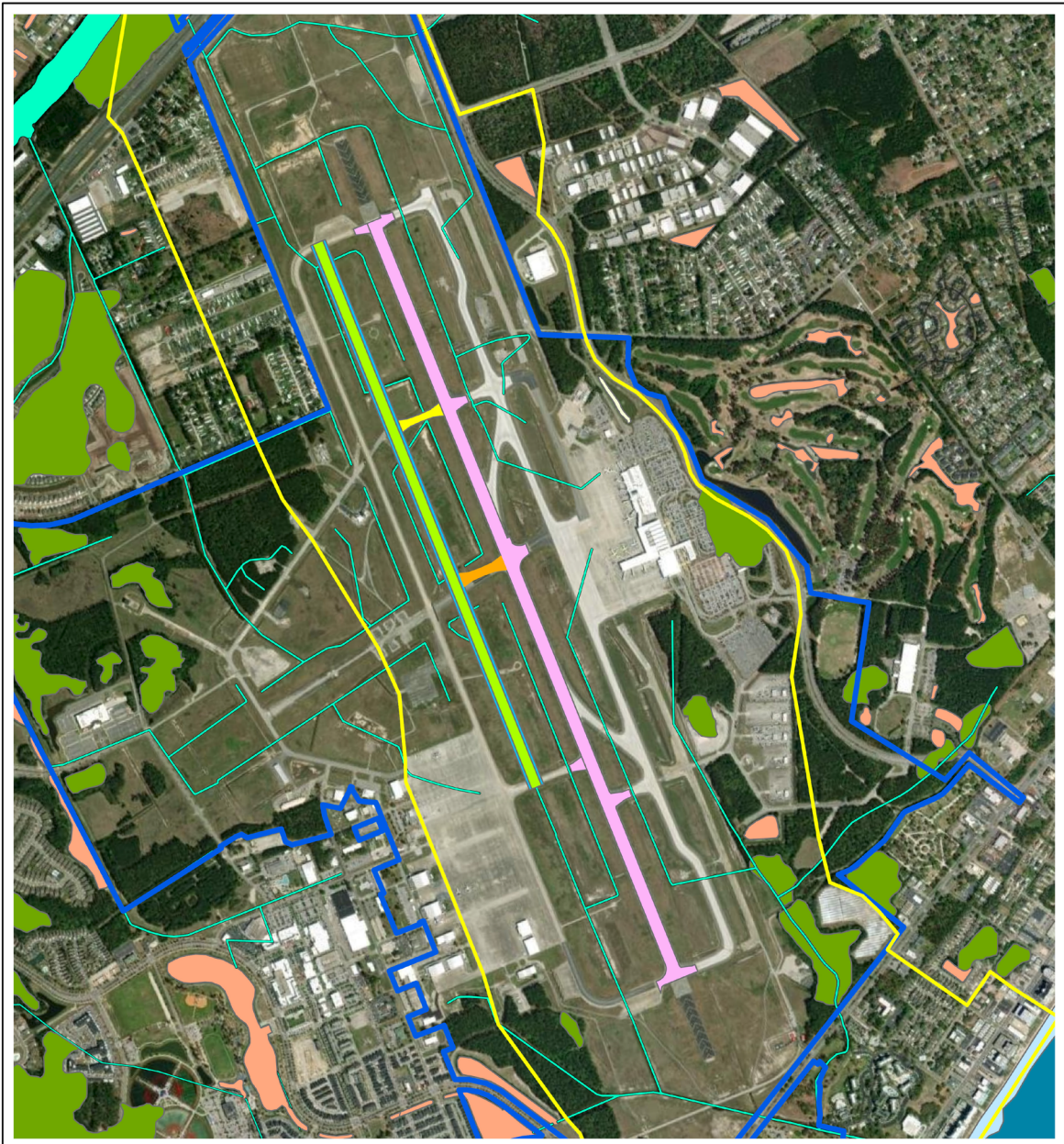
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

- » **Historic, Architectural, Archaeological, and Cultural Resources** – The Area of Potential Effects (APE) is the same as the project study areas (see **Figure 3-2**). According to the National Register of Historic Resources (NHRP), the closest NHRP-listed resource is the Pleasant Inn, located about 2.5 miles east of the project study areas (National Park Service, 2023). Based on the aircraft noise analysis described in **Section 3.4.5**, there would be no change in aircraft noise exposure and no significant noise impacts. Therefore, the Proposed Project would not directly or indirectly affect any historic, architectural, archaeological, or cultural resource.
- » **Land Use** – According to the City of Myrtle Beach, existing land use in the direct study area is classified as Airports (AP) and Planned Unit Development (PUD) (City of Myrtle Beach, 2021). The construction of the Proposed Project would occur entirely on Airport property and would be compatible with the existing Airport environment. The Proposed Project would be consistent with future Airport plans and would not cause any land use incompatibilities or inconsistencies with local off-Airport land use plans. In addition, the Proposed Project would not create a new wildlife attractant or create an obstruction to navigation airspace per 14 CFR Part 77, *Safe, Efficient Use, and Preservation of the Navigable Airspace*. The Proposed Project would not significantly affect other resources that could indirectly affect land use (e.g., the Proposed Project would not disrupt communities, affect DOT Section 4(f) resources, etc.). Therefore, the Proposed Project would not change the land use in or around the direct study area and would not cause significant land use impacts.
- » **Water Resources (wetlands, water supply, floodplains, wild and scenic rivers)** - According to the National Wetlands Inventory (NWI), there are riverine wetlands within the direct study area (USFWS, 2023). However, based on multiple USACE-approved delineations (SAC-2010-0816, SAC-2009-00281-3NH, and SAC-14-2009-00373-3N), the USFWS classified wetlands are the Airport’s stormwater system and are non-jurisdictional tributaries maintained by the Airport. Therefore, the Proposed Project would not affect jurisdictional wetlands within the direct study area. See **Figure 3-3** for a visual representation of the on-Airport water resources.

The Proposed Project is not located within a sole source aquifer, and there is no public water supply within the direct study area. The closest sole source aquifer is the Columbia and Yorktown-Eastover Aquifer, located approximately 300 miles northeast of the project study areas (EPA, 2023). The public water supply originates from the Great Pee Dee Watershed (Grand Strand Water & Sewer Authority, 2023). The project study areas are about 15 miles from the nearest Great Pee Dee Watershed component. Therefore, the Proposed Project would not affect sole-source aquifers or public water supplies.

According to the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) 45051C0708K and 45051C0716K, the direct study area contains Zone AE and Zone X (see **Figure 3-4**) (FEMA, 2023). A portion of the Proposed Project (i.e., existing taxiway connector C5) crosses the 100-year floodplain, Zone AE; however, the area consists of existing airfield pavement, and the Proposed Project would rehabilitate the same existing pavement. Therefore, the Proposed Project would not affect floodplains.

FIGURE 3-3: WATER RESOURCES



Sources: NWI 2023; ESRI 2023; RS&H 2023

0 0.25 0.5 Mile

Legend













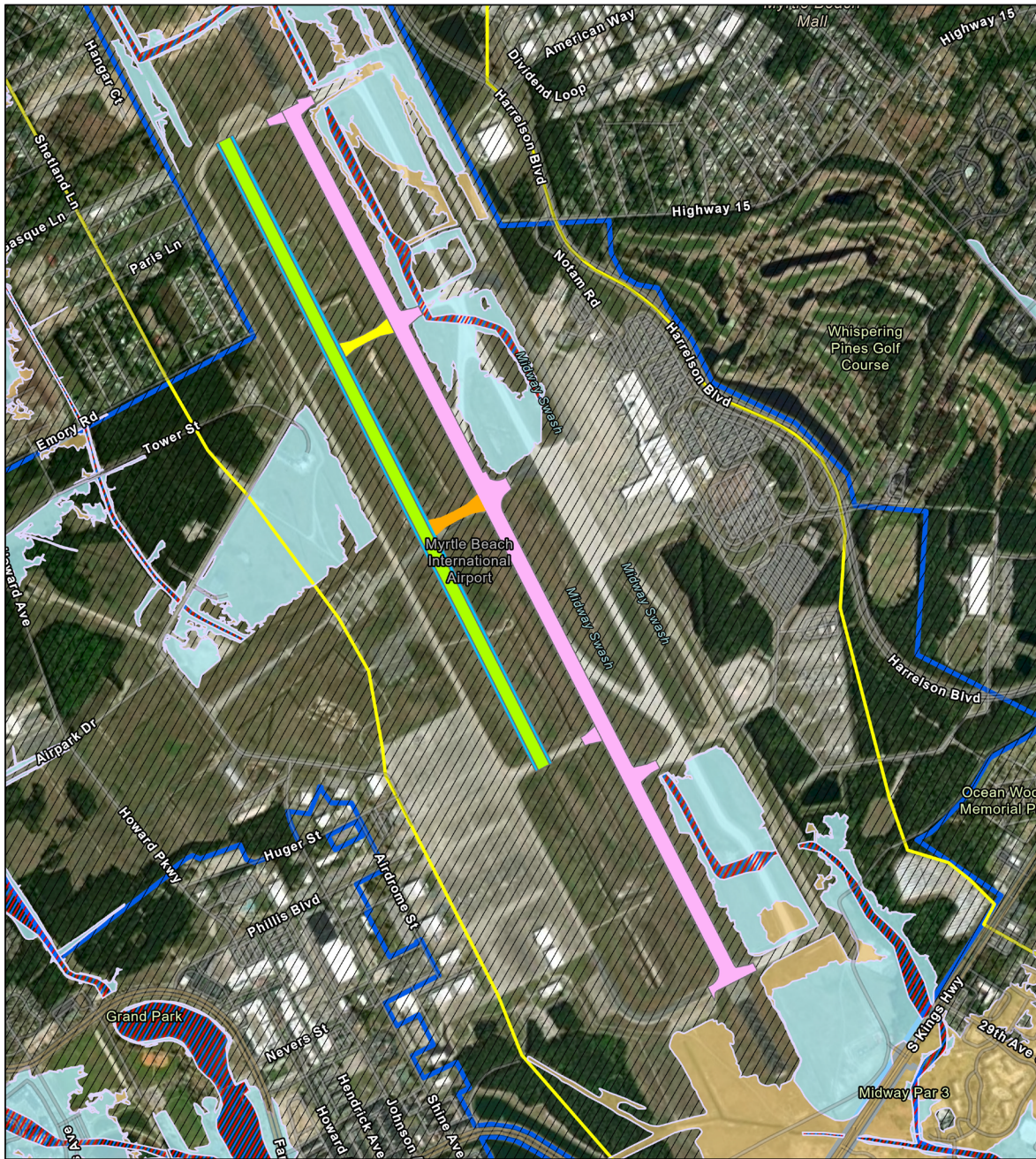
- | | |
|---|---|
|  Taxiway Connector Connection |  Indirect Study Area |
|  Taxiway Rehabilitation |  Freshwater Emergent Wetland |
|  Runway 18-36 Rehabilitation |  Freshwater Forested/Shrub Wetland |
|  Temporary Runway Shoulders (30feet) |  Freshwater Pond |
|  Temporary Runway |  Lake |
|  Direct Study Area |  MYR Stormwater System (maintained non-jurisdictional tributaries) |



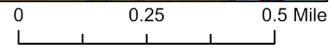
FIGURE 3-4: FLOODPLAINS



Sources: FEMA 2023; RS&H 2023; ESRI 2023

Legend

- | | |
|-------------------------------------|----------------------------|
| Taxiway Connector | Direct SA |
| Taxiway Rehabilitation | Indirect Study Area |
| Runway 18-36 Rehabilitation | 100-Year Floodplain Zone A |
| Temporary Runway Shoulders (30feet) | 500-Year Floodplain |
| Temporary Runway | Floodplain Zone X |
| | Regulatory Floodway |



The closest river designated under the National Wild and Scenic River System is the Waccamaw River, located approximately 7 miles northwest of the project study areas (National Wild and Scenic Rivers Systems, 2023). The closest Nationwide Rivers Inventory Segment is the Lumber Wild and Scenic River, about 43 miles north of the project study areas (National Park Service, 2023). Due to the distance to the closest Wild and Scenic River and Nationwide Rivers Inventory Segment, the construction and operation of the Proposed Project would not affect a Wild and Scenic River or a Nationwide Rivers Inventory Segment.

3.3 NO ACTION ALTERNATIVE

Under the No Action Alternative, the construction and operation of the Proposed Project would not occur. Future development at the Airport would be subject to review under NEPA and is not assumed under the No Action Alternative.⁵ The affected environment of the project study areas under the No Action Alternative would not differ from existing conditions.

Because there would be no anticipated construction or change in Airport facilities under the No Action Alternative, no impacts would be expected to occur related to Air Quality; Biological Resources; Climate; Coastal Resources; DOT Section 4(f) Resources; Hazardous Materials, Solid Waste, and Pollution Prevention; Historical, Architectural, Archaeological, and Cultural Resources; Land Use; Natural Resources and Energy Supply; Noise and Noise-Compatible Land Use; Socioeconomics, Environmental Justice, and Children’s Environmental Health and Safety Risks; Visual Effects; or Water Resources in the project study areas or vicinity of the Airport.

3.4 PROPOSED PROJECT POTENTIAL ENVIRONMENTAL IMPACTS

The environmental resource categories analyzed in detail for the study year 2026 are listed below:

- » Air Quality and Climate (**Section 3.4.1**)
- » Biological Resources (**Section 3.4.2**)
- » Hazardous Materials, Solid Waste, and Pollution Prevention (**Section 3.4.3**)
- » Natural Resources and Energy Supply (**Section 3.4.4**)
- » Noise and Noise Compatible Land Use (**Section 3.4.5**)
- » Socioeconomics and Environmental Justice (**Section 3.4.6**)
- » Visual Effects (**Section 3.4.7**)
- » Water Resources – Surface Waters (**Section 3.4.8**)
- » Cumulative Impacts (**Section 3.4.9**)

3.4.1 Air Quality and Climate

This section describes the general characteristics of the environment within the project study areas and the potential environmental consequences of the Proposed Project regarding air quality and climate.

⁵ The “Updated Instructions to Airports District Offices and Regional Office of Airports Employees Regarding Airport Layout Plan Reviews and Projects Potentially Affected by Section 163 of the FAA Reauthorization Act of 2018” describes the “FAA’s approach to determine the FAA’s airport layout plan (ALP) approval authority when new development is proposed by an airport sponsor. In addition, it outlines the internal process for determining FAA’s authority to regulate land use and the subsequent actions needed to approve a land use change.”

3.4.1.1 Affected Environment

The Environmental Protection Agency (USEPA) has classifications for areas regarding their ability or inability to meet the National Ambient Air Quality Standards (NAAQS). Attainment areas are geographic areas where concentrations of the criteria pollutants are below (i.e., within) the NAAQS. The USEPA has identified the following six criteria air pollutants for which NAAQS are applicable: Carbon Monoxide (CO), Lead (Pb), Nitrogen Dioxide (NO₂), Ozone (O₃), Particulate Matter (PM₁₀ and PM_{2.5}), and Sulfur Dioxide (SO₂). USEPA calls these pollutants "criteria" air pollutants because it regulates them by developing human health-based and/or environmentally based criteria (science-based guidelines) for setting permissible levels (USEPA, 2023). The project study areas are in Horry County, which is in "attainment" for all NAAQS pollutants (EPA, 2023).

Greenhouse gases (GHG) trap heat in the earth's atmosphere. Both naturally occurring and man-made GHGs primarily include water vapor, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Activities that require fuel or power are the primary stationary sources of GHGs at airports. Aircraft and ground access vehicles, which are not under the control of an airport, typically generate more GHG emissions than airport-controlled sources.

Research has shown a direct correlation between fuel combustion and greenhouse gas emissions. In terms of U.S. contributions, the U.S. Government Accountability Office (GAO) reports that "domestic aviation contributes about three percent of total carbon dioxide (CO₂) emissions, according to USEPA data," compared with other industrial sources, including the remainder of the transportation sector (20 percent) and power generation (41 percent) (GAO, 2009). The International Civil Aviation Organization (ICAO) estimates that GHG emissions from aircraft account for roughly three percent of all anthropogenic GHG emissions globally (Melrose, 2010). Climate change due to GHG emissions is a global phenomenon. Hence, the affected environment is the global climate (USEPA, 2009).

The scientific community is continuing efforts to understand the impact of aviation emissions on the global atmosphere. The FAA is leading and participating in several efforts to clarify commercial aviation's role in GHG emissions and climate. The FAA, with support from the U.S. Global Change Research Program and its participating federal agencies (e.g., National Aeronautics and Space Administration, National Oceanic and Atmospheric Administration, USEPA, and U.S. Department of Energy), has developed the Aviation Climate Change Research Initiative to advance scientific understanding of regional and global climate impacts from aircraft emissions. The FAA also funds the Partnership for Air Transportation Noise & Emissions Reduction Center of Excellence research initiative to quantify the effects of aircraft exhaust and contrails on global and U.S. climate and atmospheric composition. ICAO is examining similar research topics at the international level (Maurice & Lee, 2007).

Carbon dioxide is the primary GHG emitted by human activity, making up about 80% of all GHG emissions. Greenhouse gas emissions are often measured in carbon dioxide equivalent (CO_{2e}). In 2020, the GHG emissions for the U.S. were 5,981 million metric tons (MMT)⁶ CO_{2e}, and in 2021, for the State of South Carolina was 69.3 MMT CO_{2e} (U.S. Energy Information Administration, 2023).

⁶ According to the USEPA, a million metric tons is equal to about 2.2 billion pounds (EPA, 2023).

3.4.1.2 Environmental Consequences

This section describes the significance threshold(s) pertaining to air quality and climate and the potential effects the Proposed Project would have on those resources compared to the No Action Alternative.

Significance Thresholds

Air Quality

FAA Order 1050.1F, Exhibit 4-1, provides the FAA’s significance threshold for air quality, which states: “The action would cause pollutant concentrations to exceed one or more of the NAAQS, as established by the USEPA under the Clean Air Act, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations.”

Climate

While FAA 1050.1F does not provide a significance threshold for aviation-related GHG emissions, the projected increase in GHG emissions from the Proposed Project is discussed in the context of national and global GHG emissions from all sources.

Air Quality Impacts

Construction of the Proposed Project would cause a minor increase in surface vehicles using area roadways to access the construction site. However, this would be temporary, lasting the duration of construction. A Construction Emissions Inventory (CEI) of the Proposed Project was conducted through EPA’s MOfor Vehicle Emissions Simulator 3 (MOVES3.1) program. MOVES3.1 uses EPA-approved emission factors for non-road construction equipment and on-road vehicles. Exhaust and fugitive emission factors were developed for non-road construction equipment and on-road vehicles. **Table 3-1** shows an increase in temporary construction air pollutant emissions for each NAAQS category. See **Appendix A** for CEI data and calculations.

TABLE 3-1: TEMPORARY CONSTRUCTION EMISSIONS

Year	NAAQS						GHGs		
	CO	VOC	NOx	PM ₁₀	PM _{2.5}	SOx	CO ₂	CH ₄	N ₂ O
2026	6.98	0.26	2.68	2.29	0.14	0.01	4,768.04	0.02	0.00
2027	1.52	0.17	1.89	1.01	0.10	0.01	2,651.60	0.01	0.00
2028	2.63	0.27	3.27	2.68	0.15	0.02	6,878.60	0.01	0.00

Source: RS&H, 2024.

Climate Impacts

GHG emissions would occur during the construction and operation of the Proposed Project. Using fossil fuel-powered machinery during the construction of the Proposed Project would emit GHGs such as CO₂. These emissions would only last as long as construction activities. Increasing the number of construction-related personal vehicles traveling to and from the Airport would increase vehicle-related GHG emissions. These temporary emissions would only occur during the construction of the temporary runway (approximately 16 months) and the reconstruction of Runway 18/36 (4 months). For this EA, it is assumed that most construction-related workers already live and work in the region; therefore, the region’s vehicle-related GHG emissions would not significantly change. Therefore, the construction of

the Proposed Project would not have a significant effect on GHG emissions for the State of South Carolina, the U.S., or the global climate.

Social Costs of Greenhouse Gases (SC-GHGs)

In January 2023, the Council on Environmental Quality (CEQ) issued interim guidance, *National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change*,⁷ to assist agencies in analyzing greenhouse gas emissions (GHG) and climate change effects of a Proposed Project under NEPA. The FAA has not established a significance threshold for Climate impacts. As such, this section quantifies and discloses the potential greenhouse gas (GHG) emissions from the Proposed Project and provides context by monetizing the results using social cost of carbon estimates.

The CEQ identified Social Cost-Greenhouse Gases (SC-GHG) as the metric for assessing potential climate impacts and represents the monetary estimate of the effect associated with each additional metric ton of carbon dioxide released into the air (Interagency Working Group, 2021).

The Interagency Working Group (IWG) developed average discount rates to assess climate impacts over time. The higher the discount rate, the lower the social climate cost (SCC) for future generations. Three integrated assessment models (IAMs) were used to develop discount rates that were based on the results from the three IAMs used by the IWG: William Nordhaus' DICE model (Yale University), Richard Tol's FUND model (Sussex University), and Chris Hope's PAGE model (Cambridge University) (Interagency Working Group, 2021). The IWG average discount rates are 5 percent, 3 percent, 2.5 percent, and the 95th percentile estimate at the 3 percent discount rate, which represents the potential for low-probability catastrophic climate impacts. The IWG average discount rates represent a range of possible climate impacts to future generations. For example, the 5 percent average rate represents a situation where future generations are best suited to manage potential climate impacts from the Proposed Project, leading to a minimal social cost impact. The IWG determined the social cost of CO₂ (SC-CO₂) through 2050 and assigned a monetary value⁸ for each additional metric ton of CO₂ produced. SC-CO₂ is equivalent to SC-GHGs and represents the social costs of the total greenhouse gases converted to the CO₂e equivalent. The SC-CO₂ helps weigh the benefits of climate mitigation against its costs.

The calculated social costs are estimates only and subject to change depending on various factors (e.g., energy supply).⁹ These calculations are for information purposes only and represent the potential social costs from construction emissions during the Proposed Project's construction. The social cost calculations represent a range of possibilities and are not guaranteed to occur. As shown in **Table 3-2**, the range of potential social costs from the Proposed Project from construction emissions is approximately \$81,079 – \$825,096 for 2026, \$47,738 - \$466,768 for 2027 and \$123,827 - \$1,238,272 for 2028. This cost range represents the potential social costs of adding GHGs to the atmosphere in a given year. It includes the value of all climate change impacts, including (but not limited to) changes in net agricultural productivity, human health effects, property damage from increased flood risk natural

⁷ 88 FR 1196, National Environmental Policy Act Guidance on Consideration of Greenhouse Gas Emissions and Climate Change, <https://www.federalregister.gov/documents/2023/01/09/2023-00158/national-environmental-policy-act-guidance-on-consideration-of-greenhouse-gas-emissions-and-climate>; Accessed November, 2023

⁸ These monetary values are based on the results from three economic models used by the IWG: William Nordhaus' DICE model (Yale University), Richard Tol's FUND model (Sussex University), and Chris Hope's PAGE model (Cambridge University).

⁹ https://costofcarbon.org/files/Omitted_Damages_Whats_Missing_From_the_Social_Cost_of_Carbon.pdf; Accessed November 2023

disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services (Interagency Working Group, 2021). It is important to note that this climate analysis does not include positive impacts from the Proposed Project (e.g., improve the Runway 18-36 safety and extend the life for approximately 20 years).

In considering the impact of climate change on the Proposed Project, the foreseeable state of the environment is not expected to change significantly over the limited construction duration of the Proposed Project, which spans approximately three years, since effects are typically felt on decadal time scales. For example, the ACRP guidance on Climate Change Adaptation Planning: Risk Assessment for Airports (ACRP Report 147, 2015) provides short-term and long-term forecasts for 2030 and 2060 and recommends re-evaluating climate change risks to airports every 3-5 years. Therefore, no significant impacts to the Proposed Project are anticipated as a result of climate change effects occurring during the Proposed Project’s construction.

TABLE 3-2: SOCIAL COST – CARBON DIOXIDE FOR THE PROPOSED PROJECT

Year	Proposed Project CO ₂ e	Average Estimate at 5% Discount Rate	Average Estimate at 3% Discount Rate	Average Estimate at 2.5% Discount Rate	95 th Percentile Estimate at 3.0% Discount Rate
2026	4,769.34	\$81,079	\$271,852	\$400,625	\$825,096
2027	2,652.09	\$47,738	\$156,473	\$228,080	\$466,768
2028	6,879.29	\$123,827	\$412,757	\$598,498	\$1,238,272

Note: Per the 2023 IPCC Sixth Assessment Report, CO₂e equivalent for SC-GHG were calculated using the Interagency Working Group¹⁰ average discount rates: 5 percent, 3 percent, 2.5 percent, and the 95th percentile estimate applying the 3 percent discount rate. CO₂e Values are multiplied by the discount rate to calculate SC-CO₂.

Per the 2023 IPCC¹¹ Sixth Assessment Report, the CO₂ equivalent for N₂O is calculated by multiplying the N₂O emissions by the GWP of 265. The CO₂ equivalent for CH₄ is calculated by multiplying the CH₄ emissions by the GWP of 28. For example, the 2024 Average Estimate at 5% Discount Rate was calculated using the 2024 CO₂e value of 43.51 multiplied by 2024’s \$16 determined value for the 5% Discount Rate.

Sources: Interagency Working Group, 2021, IPCC Sixth Assessment 2023, RS&H, 2024.

Mitigation, Avoidance, or Minimization Measures

As described above, the Proposed Project would not significantly affect Air Quality or Climate. In the absence of potentially significant effects, mitigation measures are not proposed.

3.4.2 Biological Resources

This section describes the general characteristics of the environment within the project study areas and the potential environmental consequences of the Proposed Project regarding biological resources.

Section 7(a)(1) of the Endangered Species Act (ESA) OF 1973, as amended (16 U.S.C. part 1531 et seq.), required federal agencies, in consultation with and with the assistance of the U.S. Fish and Wildlife Service (FWS) and/or the National Marine Fisheries Service (NMFS), to use their authorities to further

¹⁰ [Technical Support Document: Social Cost of Carbon, Methane, \(whitehouse.gov\)](#); Accessed November 2023

¹¹ https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_LongerReport.pdf; Accessed November 2023

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the purpose of the ESA by carrying out programs for the conservation of listed species. Section 7(a)(2) of the ESA requires that each federal agency, in consultation with and with the assistance of FWS and/or NMFS, ensures that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any endangered or threatened species or result in the destruction or adverse modification of designated critical habitat of those species. When the action of a federal agency may affect a listed species or its designated critical habitat, that agency is required to consult with either NMFS, USFWS, or both, depending upon the species that may be affected.

The Migratory Bird Treaty Act (MBTA) protects all migratory birds by prohibiting the taking, killing, or possessing of migratory birds (including their eggs, nests, and feathers). The MBTA applies to migratory birds identified in 50 Code of Federal Regulations (CFR) § 10.13 (referred to hereafter as “migratory birds”).

The Bald and Golden Eagle Protection Act (BGEPA) prohibits anyone from “taking” a bald or golden eagle, including their parts, nests, or eggs, without a permit issued by the FWS. Implementing regulations (50 CFR Part 22) and FWS guidelines published in the National Bald Eagle Management Guidelines provide additional protections against “disturbances.” Similar to take, “disturb” means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, injury to an eagle or causes either a decrease in its productivity or nest abandonment due to a substantial interference with breeding, feeding, or sheltering. A permitting process provides limited exceptions to BGEPA’s prohibitions (50 CFR Part 22). Permits are only needed when avoidance of incidental take is not possible. According to federal guidelines, if conservation measures can be implemented such that no aircraft are flown within 1,000 feet of a nest, incidental take of bald eagles is unlikely to occur, and no permit is needed.

3.4.2.1 Affected Environment

A desktop analysis and threatened and endangered (T&E) survey of the project area were conducted. The T&E species remote data assessment (the desktop review) results and the results from the on-site survey are described below.

The area surveyed for biological resources is a portion of the direct study area and covers approximately 88 acres, located on the northwest portion of the Airport property. The wildlife survey assessed the presence or absence of federal and state-listed species within a surveyed area based on line-distance sampling methods, as detailed in Buckland et al. (1993). The survey focused on systematically collecting data along transect lines established to ensure comprehensive coverage of the biological resources survey area. They were spaced to represent the range of habitats on-site and potential species occurrence. **Figure 3-5** illustrates the biological resources survey area and systematic transects.

There are minimal changes in elevation throughout Airport property, which vary from being saturated to having water temporarily standing at a depth of a few feet in some areas (i.e., on-Airport stormwater detention conveyance system/swales). The area surveyed of biological resources is maintained with routine mowing, such that the entire area is herbaceous with no shrub or tree species present. Photos of the survey area, notable observations, and typical vegetation can be found in the photo log in **Appendix B**.

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The area surveyed for biological resources underwent a comprehensive review through the USFWS Information for Planning and Consultation (IPaC) system, seeking guidance on federally listed species. Within this framework, 12 threatened or endangered species that might occur within the area surveyed for biological resources were identified. In addition, seven state-listed T&E species were identified as potentially occurring within the survey area. **Appendix B, Table 1** includes the complete list of T&E species that have the potential to occur within the area surveyed for biological resources.

During the comprehensive wildlife survey conducted within the area surveyed for biological resources, field observations revealed an absence of federal and state-designated T&E species potentially associated with the region within the area surveyed. Vegetation in the upland areas of the surveyed area includes broomsedge (*Andropogon* spp.), bitter sneezeweed (*Helenium amarum*), crabgrass (*Digitaria* spp.), carpetgrass (*Anxonopus fissifolius*), common dandelion (*Taraxacum officinale*), blackberry (*Rubus* sp.), and Bermuda grass (*Cynodon dactylon*). Many inundated areas contained algae, large rocks, and murky water. Stormwater system/swale depths ranged from approximately 0.5 inch to a few feet deep, with deeper areas typically found towards the northern portion of the area surveyed for biological resources.

The Bald Eagle (*Haliaeetus leucocephalus*) is no longer considered a listed species under the ESA; however, the Bald Eagle is afforded protection under BGEPA, as amended. Although the Bald Eagle has been delisted, restrictions regarding work around their nests are still in place. The National Bald Eagle Management Guidelines define two buffer zones (the primary and secondary zones) from the central location of a nest. Activity restrictions are based on the distance from the nest. The primary activity zone is 330 feet from the nest, and the secondary activity zone is 660 feet from the central location of the nest. These restrictions vary based on the time of year and distance of the project from the nest. There are no known or observed Bald Eagles nests within the primary or secondary activity zones from the area surveyed for biological resources.

3.4.2.2 Environmental Consequences

This section describes the significance threshold(s) pertaining to biological resources and the potential effects the Proposed Project would have on those resources compared to the No Action Alternative.

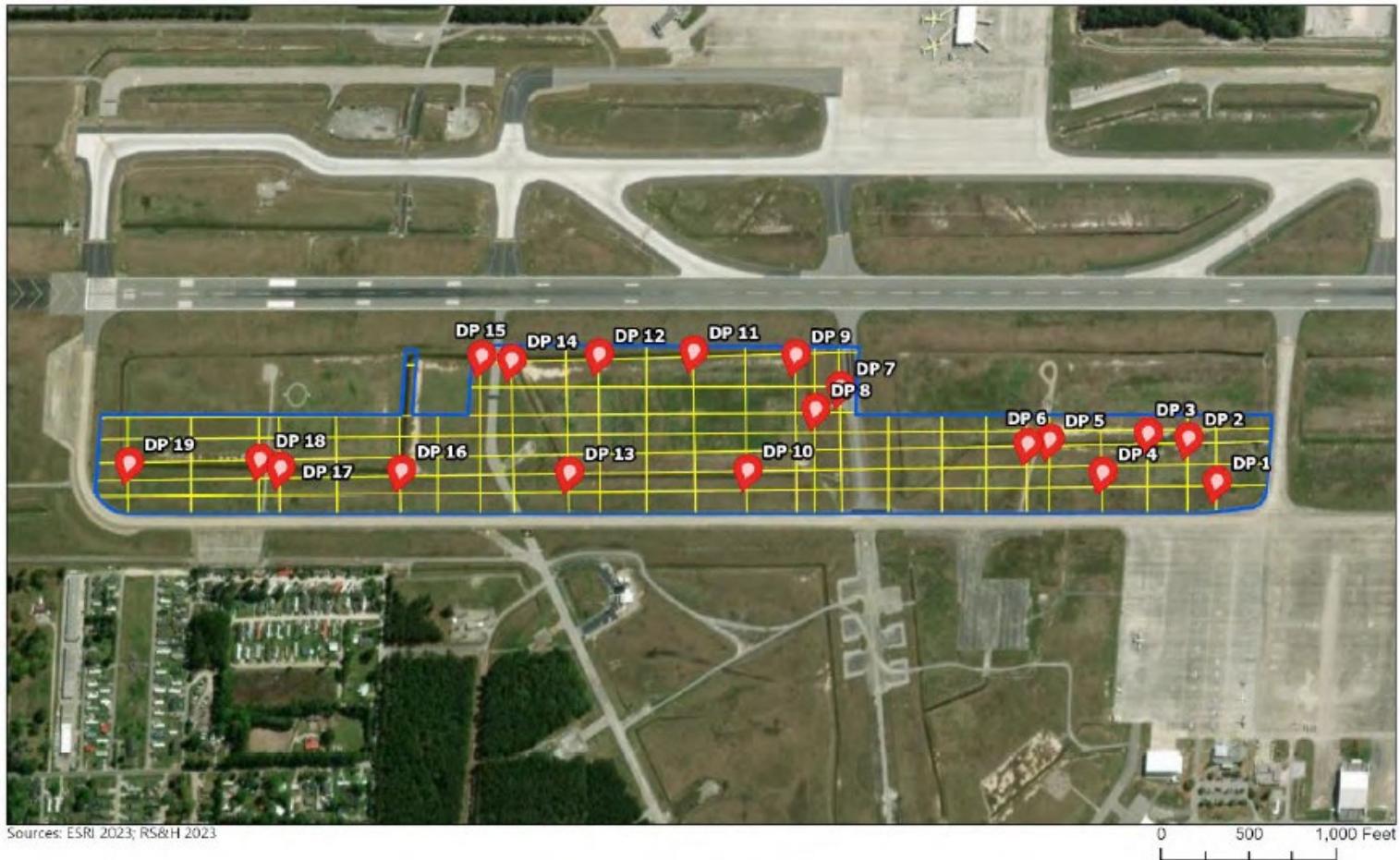
Significance Thresholds

FAA Order 1050.1F, Exhibit 4-1, provides the FAA's significance threshold for biological resources, which states, "The USFWS or the National Marine Fisheries Service determines that the action would be likely to jeopardize the continued existence of a federally listed threatened or endangered species, or would result in the destruction or adverse modification of federally designated critical habitat." Non-listed species have no significance threshold, but factors for consideration are provided.

Biological Resources Impacts

Field observations revealed an absence of federal and state-designated T&E species potentially associated with the region within the area surveyed for biological resources (see **Appendix B** for further information). Therefore, based on habitat suitability and historical presence, federal or state-listed T&E species are unlikely to be encountered within the area surveyed for biological resources.

FIGURE 3-5: AREA SURVEYED FOR BIOLOGICAL RESOURCES



Sources: ESRI 2023; RS&H 2023

Legend

-  Surveyed Area
-  Data Point
-  Transect Lines



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3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

Table 3-3 shows the two federal-listed species and four stated-listed species with the potential for effect. According to the South Carolina Ecological Services Field Office Determination Key, the Proposed Project has the potential to likely encounter the state-listed species.

Based on the USFWSIPaC submission, the Proposed Project would have **no effect** on federally listed species. The USFWS IPac submission describes the piping plover (*Charadrius melodus*) and rufa red knot (*Calidris canutus rufa*) as "Not Likely to Adversely Affect" (NLAA). During the field investigation of the surveyed area, neither the piping plover or the rufa red knot, or the habitats of either species were observed during the field survey (see **Appendix B** for further information). Therefore, the Proposed Project would have **no effect** on the piping plover or rufa red knot species or their habitats.

TABLE 3-3: POTENTIALLY AFFECTED FEDERAL AND STATE-LISTED SPECIES WITHIN THE SURVEYED AREA

Species	USFWS Listing Status	SCDNR Listing Status	Likelihood to Encounter	Effects Determination
Piping Plover (<i>Charadrius melodus</i>)	Threatened	n/a	n/a	No Effect
Rufa Red Knot (<i>Calidris canutus rufa</i>)	Threatened	n/a	n/a	No Effect
Swallow-tailed Kite (<i>Clemmys guttata</i>)	n/a	Endangered	Low	No Effect
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	n/a	Threatened	Low	No Effect
Peregrine Falcon (<i>Falco peregrinus</i>)	n/a	Endangered	Low	No Effect
Spotted Turtle (<i>Clemmys guttata</i>)	n/a	Threatened	Medium	No Effect

Notes: n/a – not applicable.

Source: South Carolina Ecological Services Field Office (ESFO) Determination Key (DKey); USFWS.gov; SCDNR Threatened and Endangered Species Inventory

Swallow-tailed Kite (*Clemmys guttata*)

The Airport’s proximity to large tracts of forested wetlands and available prey suggests a potential foraging habitat for swallow-tailed kites. However, the absence of tall trees within the biological resources survey area diminishes the likelihood of the survey area serving purposes beyond foraging habitat or as a migratory pathway. The swallow-tailed kite was not observed during the field survey. The Proposed Project would have **no effect** on the swallow-tailed kite.

Bald Eagle (*Haliaeetus leucocephalus*)

The Airport’s proximity to the coast increases the likelihood that bald eagles may be observed near the area surveyed for biological resources. However, the area surveyed for biological resources lacks tall trees suitable for nesting. The Bald Eagle was not observed during the field survey (see **Appendix B** for further information). The Proposed Project would have **no effect** on the Bald Eagle.

Peregrine Falcon (*Falco peregrinus*)

The Airport’s proximity to waterfowl impoundments and urbanized areas increases the likelihood that peregrine falcons may be encountered in the biological resources survey area. However, it is important to note that peregrine falcons do not nest along the coastal plains of South Carolina. Instead, the survey area may serve as a migratory pathway for these falcons, presenting an opportune location for hunting

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prey or as a migratory pathway. The American Peregrine Falcon was not observed during the field survey. The Proposed Project would have **no effect** on the American Peregrine Falcon.

Spotted Turtle (*Clemmys guttata*)

A network of on-site stormwater ditches provides a potential suitable habitat for spotted turtles, which prefer slow-moving shallow water with lots of aquatic vegetation. The spotted turtle was not observed during the field survey. The Proposed Project would have **no effect** on the spotted turtle.

Mitigation, Avoidance, or Minimization Measures

The Proposed Project would not significantly affect biological resources. In the absence of potentially significant effects, mitigation measures are not proposed.

3.4.3 Hazardous Materials, Solid Waste, and Pollution Prevention

This section describes the existing characteristics of the environment within the study areas and the potential environmental consequences of the Proposed Project regarding hazardous materials, solid waste, and pollution prevention.

3.4.3.1 Affected Environment

Hazardous Materials

According to the USEPA online resources (e.g., NEPAassist and EnvirAtlas), there are hazardous waste facilities within the project study areas. No superfund sites are on the National Priorities List (NPL) within the study areas. The closest superfund site is the Kerr-Mcgee Chemical Corp - Navassa (Site ID: 0403028), located 60 miles northeast of the study areas. (EPA, 2023). Multiple hazardous waste producers are located within the study areas (see **Table 3-4**).

TABLE 3-4: HAZARDOUS WASTE PRODUCERS WITHIN PROJECT STUDY AREAS

Owner Name	Handler ID	Hazardous Waste Generator
TSA at Myrtle Beach International Airport	Scr000765891	Small Quantity Generator
Allegiant Air	Scr000786269	Very Small Quantity Generator
Dominion Energy South Carolina Myrtle Beach	Scr000787713	Very Small Quantity Generator
Certified Aviation Services Llc	Scr000789636	Very Small Quantity Generator
Prescott Support	Scr000771907	Very Small Quantity Generator
Avcraft Support Services Inc	Scr000768010	Unspecified
Flight International Services	Scr000002907	Unspecified

Source: EPA, 2023

The Horry County Department of Airports (HCDA) has existing policies and procedures for handling, disposing of, and cleaning up hazardous materials, chemicals, and other substances, including jet fuel. The HCDA developed a Spill Prevention, Control, and Countermeasure (SPCC) Plan. It established roles and responsibilities for spill response on Airport property.

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Solid Waste

GFL Environmental Inc. manages the solid waste at the Airport. The closest landfill to the airport is the Horry County landfill, located about nine miles from the Airport (South Carolina Department of Health and Environmental Control, 2022). As of FY22, the landfill had 18.4 years of capacity, with plans to expand the landfill to accommodate future growth in Horry County (SCDHEC, 2022).

Pollution Prevention

The HCDA has a National Pollutant Discharge Elimination System (NPDES) permit for industrial activities at the Airport. This permit requires the HCDA to maintain a Storm Water Pollution Prevention Plan (SWPPP) and SPCC plan for the Airport property. The HCDA has various plans and procedures to address potential spills at the Airport. These include measures to minimize the impacts of potentially contaminated stormwater on receiving bodies.

3.4.3.2 Environmental Consequences

This section describes the significance threshold(s) pertaining to hazardous materials, solid waste, and pollution prevention compared to the No Action Alternative.

Significance Threshold

FAA Order 1050.1F does not define a significance threshold for hazardous materials, solid waste, and pollution prevention; however, it does provide several factors to consider in evaluating the context and intensity of potential environmental impacts. FAA Order 1050.1F, Exhibit 4-1 states that these include when the action would have the potential to:

- » Violate applicable federal, state, tribal, or local laws or regulations regarding hazardous materials and/or solid waste management;
- » Involve a contaminated site (including but not limited to a site listed on the National Priorities List). Contaminated sites may encompass relatively large areas. However, not all of the grounds within the boundaries of a contaminated site are contaminated, which leaves space for siting a facility on non-contaminated land within the boundaries of a contaminated site. An EIS is not necessarily required. Paragraph 6-2.3.a of [FAA Order 1050.1F] allows for mitigating impacts below significant levels (e.g., modifying an action to site it on non-contaminated grounds within a contaminated site). Therefore, if appropriately mitigated, actions within the boundaries of a contaminated site would not have significant impacts;
- » Produce an appreciably different quantity or type of hazardous waste;
- » Generate an appreciably different quantity or type of solid waste or use a different method of collection or disposal and/or would exceed local capacity; or
- » Adversely affect human health and the environment.

Hazardous Materials Impacts

Construction of the Proposed Project would result in a temporary increase of on-Airport hazardous material storage. This would predominately occur in the form of diesel fuel, which is necessary to

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operate construction equipment. The selected contractor would manage hazardous materials from construction activities per existing Airport regulations and standard operating procedures (SOPs).

The operation of the Proposed Project would not change the type or quantity of hazardous materials used or stored at the Airport. All existing hazardous materials would continue to be used and stored per federal, state, and local rules and regulations. Therefore, compared to the No Action Alternative, the construction and operation of the Proposed Project would not significantly affect hazardous materials.

Solid Waste Impacts

Construction activities would temporarily increase the amount of construction waste (e.g., vegetation clearing, temporary runway construction, runway rehabilitation). There are current stockpile sites on the Airport property that would be used for spoils materials (e.g., sand, subbase gravel, asphalt, concrete, broken pipe, glass, wood, and other debris) during the project's construction. However, Engineers would strive to balance the amount of fill needed for the temporary runway construction with the excavation for the drainage basins resulting in very little, if any, spoils remaining at the end of construction. The selected construction contractor would manage solid waste from construction activities per existing Airport regulations and SOPs. Compared to the No Action Alternative, construction of the Proposed Project would not significantly affect solid waste or the capacity of area landfills.

Pollution Prevention Impacts

The HCDA has a NPDES permit for activities at the Airport. This permit requires the HCDA to maintain a SWPPP and SPCC plan for the Airport property. The HCDA has various plans and procedures to address potential spills at the Airport. These include measures to minimize the impacts of potentially contaminated stormwater on receiving bodies.

Mitigation, Avoidance, or Minimization Measures

As described above, the Proposed Project would not significantly affect hazardous materials, solid waste, or pollution prevention at the Airport. In the absence of potentially significant effects, mitigation measures are not proposed.

3.4.4 Natural Resources and Energy Supply

This section describes the existing characteristics of the environment within the project study areas and the potential environmental consequences of the Proposed Project regarding natural resources and energy supply.

3.4.4.1 Affected Environment

Consumable materials are regularly used to maintain the Airport's various airside and landside facilities and services. Those materials may include asphalt, concrete, aggregate for sub-base materials, various metals associated with such maintenance, and fuels associated with the operation of aircraft and vehicles.

Electrical power is provided to the Airport by Duke Energy Progress (Duke Energy, 2023). Water services are provided by the Grand Strand Water & Sewer Authority (GSWSA) (Myrtle Beach Chamber of Commerce, 2023). Water supply for the Airport originates from the Great Pee Dee Watershed (Grand Strand Water & Sewer Authority, 2023). The direct study area is about 15 miles from the nearest Great

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Pee Dee Watershed component. Dominion Energy provides natural gas to the Airport and the surrounding community (Myrtle Beach Chamber of Commerce, 2023).

3.4.4.2 Environmental Consequences

This section describes the significance threshold(s) pertaining to natural resources and energy supply and the potential effects the Proposed Project would have on natural resources and energy supply compared to the No Action Alternative.

Significance Threshold

FAA Order 1050.1F does not define a significance threshold for natural resources and energy supply; however, it does provide a factor to consider in evaluating the context and intensity of potential environmental impacts. Potentially significant effects could occur if the action has the potential to cause demand to exceed available or future supplies of these resources, which include fuel, construction material, and electrical power.

Natural Resources and Energy Supply Impacts

The Proposed Project's construction would result in temporarily increased usage of natural resources. Construction activities associated with the Proposed Project include using aggregate, sub-base materials, paving materials, and utility cables. Construction of the Proposed Project would not require large volumes of natural resources that are rare or in short supply. These resources are not rare or in short supply, and the quantity required for development this size would not place an undue strain on supplies within the Myrtle Beach area. Construction of the Proposed Project would also result in temporary increased usage of energy supplies. However, the increase would be temporary and minor and within the supply capabilities of Duke Energy Progress. Trucks and construction equipment would consume fuels as needed for construction purposes. These energy sources are not rare or in short supply.

Construction of the Proposed Project would temporarily increase fuel usage from construction-related vehicles accessing the Direct Study Area. Operation of the Proposed Project would not increase aviation fuel use at the Airport.

Mitigation, Avoidance, or Minimization Measures

Construction and implementation of the Proposed Project would not significantly affect natural resources and energy supply. Therefore, no mitigation is required or proposed.

3.4.5 Noise and Noise Compatible Land Use

This section describes the existing condition, the significance threshold(s) pertaining to noise and noise-compatible land use used to determine the potential effects of the Proposed Project compared to the No Action Alternative and describes those potential effects.

3.4.5.1 Affected Environment

The U.S. Environmental Protection Agency (USEPA) has designated the Day-Night Sound Level (DNL) as the principal metric for airport noise analysis.¹² DNL is widely accepted as the best available single

¹² U.S. Environmental Protection Agency, Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety, U.S. EPA Report No. 550/9-74-004, 1974.

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metric to describe aircraft noise exposure. The FAA requires use of the annual DNL in aircraft noise exposure analyses and noise compatibility planning.²¹³ DNL is based on sound levels measured in relative intensity of sound decibels (dB) on the A-weighted scale (dBA) over a time-weighted average normalized to 24-hours. DNL has been widely accepted as the best method to describe aircraft noise exposure. The USEPA identifies DNL as the principal metric for airport noise analysis. The FAA requires DNL to be the noise descriptor in aircraft noise exposure analysis and noise compatibility planning. DNL levels are commonly shown as lines of equal noise exposure, similar to terrain contour maps, referred to as noise contours. The Aviation Environmental Design Tool (AEDT) is the FAA’s required tool for the environmental review of infrastructure projects and other Federal actions affecting airports and airspace in the United States.

The noise environment is commonly depicted in lines of equal noise levels or noise contours. These noise contours are supplemented with noise data for selected points such as noise-sensitive receptors. The noise analysis takes the following operational characteristics into account:

- » number of aircraft operations;
- » aircraft fleet mix;
- » aircraft noise and performance characteristics;
- » flight tracks; and
- » runway use.

Noise modeling requires specific noise and performance data for each aircraft type operating at the Airport. Noise data includes particular aircraft with engines at a range of thrust levels at a range of distances (from 200 feet to 25,000 feet). Performance data include takeoff and landing operations' thrust, speed, and altitude profiles. AEDT has standard aircraft flight profiles for takeoffs, landings, and flight patterns or touch-and-go operations, which were used for all civilian and military aircraft types. The AEDT database contains standard noise and performance data for over 300 fixed-wing aircraft types, most of which are civilian aircraft. Within the AEDT database, it is standard for aircraft takeoff or departure profiles to be defined by a range of trip distances identified as “stage lengths.” Higher stage lengths (longer trip distances) are associated with heavier aircraft due to the flight’s increased fuel requirements.

The 2023 aircraft operations modeled were obtained from the FAA’s Air Traffic Activity System (ATADS) for fiscal year 2023 (October 1, 2022, through September 30, 2023). These data, by aircraft category, are provided in **Table 3-5**. The Airport’s 2023 annual operations totaled 135,049, an average of approximately 370 daily operations.

TABLE 3-5: 2023 ANNUAL AIRCRAFT OPERATIONS

Air Carrier	Air Taxi	General Aviation	Military	Total
28,916	72,129	26,815	7,189	135,049

Source: FAA ATADS FY 2023

¹³ Federal Aviation Administration, Federal Aviation Regulations Part 150, Airport Noise Compatibility Planning, Appendix A, 1984.

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For the purposes of preparing DNL contours, operational data were segregated by aircraft type. The FAA’s Traffic Flow Management System Count (TFMSC) data was used to develop the AEDT aircraft fleet mix. TFMSC data provides information on traffic counts by airport and includes the aircraft types operating at that airport. The TFMSC data for MYR was reviewed, and each aircraft type was assigned the corresponding AEDT aircraft type. As required to prepare DNL contours, annual aircraft operations were converted to annual average-day operations.

Aircraft operations modeled in the AEDT are assigned as occurring during the day (7:00 a.m. to 9:59 p.m.) or the night (10:00 p.m. to 6:59 a.m.). The calculation of DNL includes an additional weight of 10 decibels (dB) for those operations occurring at night. The time of day for operations was based on air carrier schedules and FlightAware, a commercial vendor that collects and manages aircraft operations and flight track data. All military operations were modeled during the day. The 2023 modeled aircraft operations and fleet are provided in **Appendix C**.

The 2023 65-75 DNL contours are provided in **Figure 3-6. Table 3-6** identifies the areas within the DNL contour ranges. As shown in the table, the total area within the 65 DNL and greater contour is 875 acres and is primarily located within the limits of the Airport property boundary.

The contours extend off-Airport property southeast of the threshold of Runway 36 along South Kings Highway. This area includes two helipads for helicopter tours of the beaches and surrounding areas.

Twelve residential properties south of the threshold of Runway 36 are located within the 2023 65 DNL contour. These properties include a mix of single-family and multi-family residences. See **Appendix C** for further information.

TABLE 3-6: AREA WITHIN 2023 DNL CONTOUR INTERVALS

DNL Contour Range	Area (acres)
65-70	458
70-75	209
>75	208
Total	875

Source: RS&H, 2023

3.4.5.2 Environmental Consequences

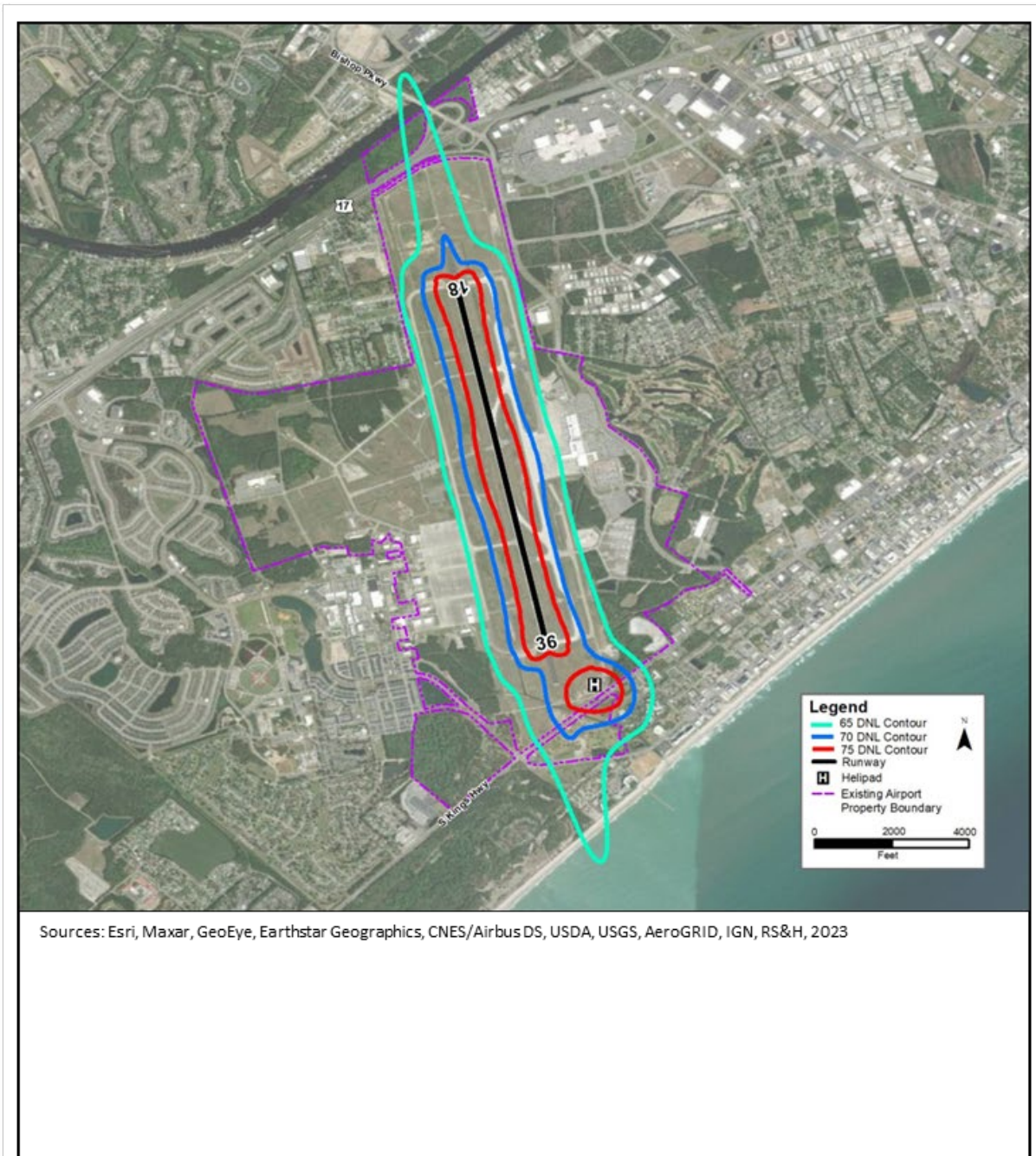
Significance Threshold

Per FAA Order 1050.1F, “a significant noise impact would occur if the action would increase noise by DNL 1.5 dB or more for a noise sensitive area that is [already] exposed to noise at or above the DNL 65 dB noise exposure level, or that will be exposed at or above the DNL 65 dB level due to a DNL 1.5 dB or greater increase when compared to the no action alternative for the same timeframe.” Noise-sensitive areas generally include residential neighborhoods; educational, health, and religious facilities; and cultural and historic sites.

For example, an increase from DNL 65.5 dB to 67 dB is considered a significant impact, as is an increase from DNL 63.5 dB to 65 dB. The determination of significance must be obtained using noise contours and/or grid point analysis along with local land use information and general guidance contained in Appendix A of 14 CFR Part 150.

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FIGURE 3-6: 2023 DNL CONTOURS



3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

In addition to defining significant impacts, FAA Order 1050.1F includes additional reporting requirements, including:

- » The location and number of noise-sensitive uses at or above DNL 65 dB;
- » The disclosure of potentially newly non-compatible land use, regardless of whether there is a significant noise impact; and
- » Maps reporting the number of residences or people residing at or above DNL 65 dB for at least the 65-, 70-, and 75-dB exposure levels.

Noise and Noise Compatible Land Use Impacts

The 2026 and 2029 analysis years were not used to compare the Proposed Project to the No Action Alternative aircraft noise analysis. During those years, aircraft operations, arrivals and departures, etc. would be the same. Therefore, aircraft noise impacts in 2026 and 2029 would not occur.

As previously described, the 2028 study year is for the aircraft noise analysis purposes when the Airport’s aircraft operations are shifted to the temporary runway. The 2028 aircraft operations were obtained from the FAA’s Terminal Area Forecast (TAF) issued in February 2023. These data, by aircraft category, are provided in **Table 3-7**. As shown, the 2028 annual operations are forecast to total 145,833, an average of approximately 400 daily operations.

The 2028 aircraft fleet mix was determined by multiplying the percentages by aircraft type that occurred in 2023 by the FAA TAF operations forecast to occur in 2028. The runway use, flight tracks, flight track use, and time of day modeled for 2028 were the same as the 2023 condition. The 2028 aircraft operations and fleet mix are shown in **Appendix C**.

TABLE 3-7: 2028 ANNUAL AIRCRAFT OPERATIONS

Air Carrier	Air Taxi & Commuter	General Aviation	Military	Total
35,744	74,542	28,166	7,381	145,833

Source: FAA TAF, Issued February 2023

2028 No Action Alternative DNL Contours

The 2028 No Action Alternative 65-75 DNL contours are provided in **Figure 3-7**. **Table 3-8** identifies the areas within the DNL contour ranges. As shown in the table, the total area within the 65 DNL and greater contour is 927 acres and is primarily located within the limits of the Airport property boundary. Twelve residential properties south of the threshold of Runway 36 are located within the 2028 No Action Alternative 65 DNL contour (the same twelve residential properties previously described being within the 2023 65 DNL contour). These properties include a mix of single-family and multi-family residences.

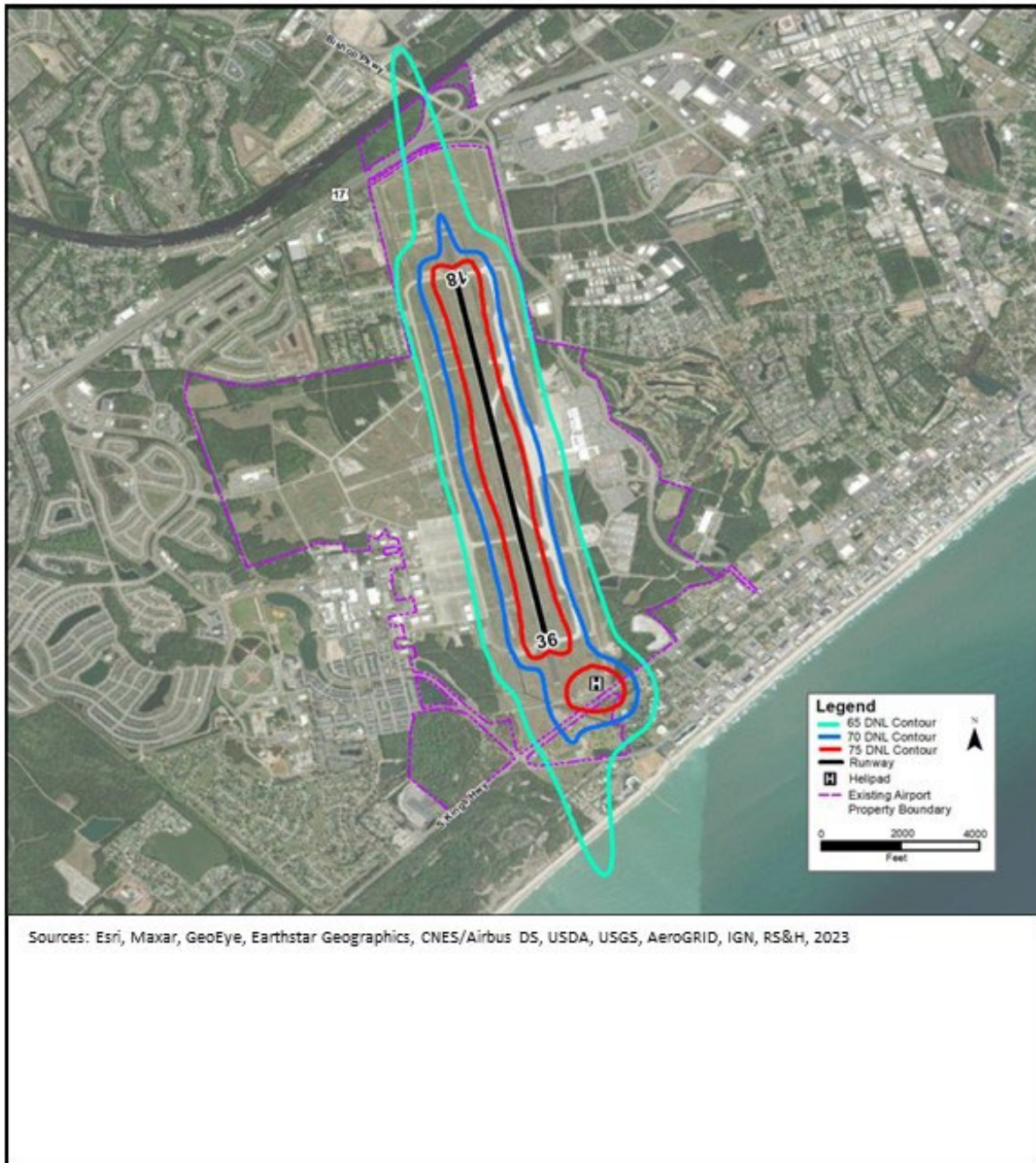
TABLE 3-8: AREA WITHIN 2028 NO ACTION ALTERNATIVE DNL CONTOUR INTERVALS

DNL Contour Range	Area (acres)
65-70	492
70-75	220
>75	215
Total	927

Source: RS&H, 2023.

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FIGURE 3-7: 2028 NO ACTION ALTERNATIVE AND PROPOSED PROJECT DNL CONTOURS



3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

2028 Proposed Project DNL Contours

The 2028 Proposed Project would not increase aircraft operations (takeoffs and landings) The existing runway configuration, arrival/departure procedures, and runway use percentages would change for a four-month period. However, compared to the 2028 No Action Alternative, the 2028 Proposed Project would not change aircraft noise exposure and significant noise impacts would not occur. See **Appendix C** for further information.

2028 Supplemental Noise Information

The following describes noise exposure information for the temporary four-month construction period. In an EA, a significance noise impact is determined by comparing the annual future No Action Alternative with the annual future Proposed Project. There is no significance threshold for aircraft noise during a temporary period. Therefore, the future Proposed Project is not compared to the future No Action Alternative. The supplemental noise information shows how noise exposure would change in 2028 with the temporary construction period and is for informational purposes only.

The modeling of the DNL contours with the temporary construction period included aircraft operating on the Airport's existing runway for eight months and operating on the temporary runway for four months in 2028. The resulting 65-75 DNL contours are shown in **Figure 3-8**.

Sixteen mobile/manufactured residences are within the 65 DNL contour just west of the Runway 18 threshold. These properties would experience a temporary increase (4 months) in noise exposure as the temporary runway is closer to the properties when compared to the existing runway. South of the Runway 36 threshold, 11 residential properties are located within the 65 DNL contour. All properties would experience a temporary decrease (4 months) in noise as the temporary runway is about half a mile farther away.

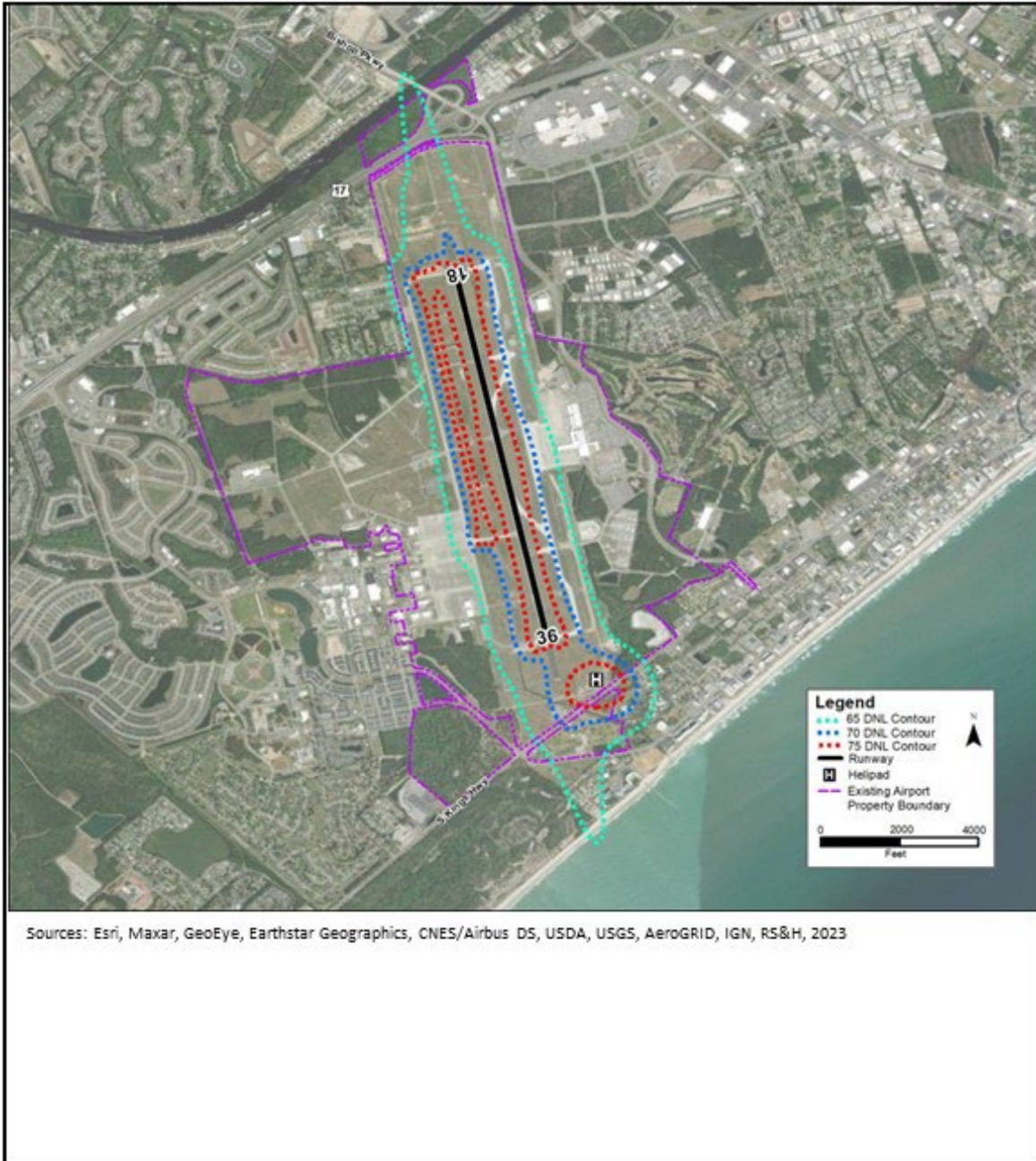
The properties within the 65 DNL contour west and south of the Airport are shown in **Figure 3-9** and **Figure 3-10** respectively. See **Appendix C** for further information.

Mitigation, Avoidance, or Minimization Measures

The Proposed Project would not significantly affect noise and noise-compatible land use. Therefore, no mitigation is required or proposed.

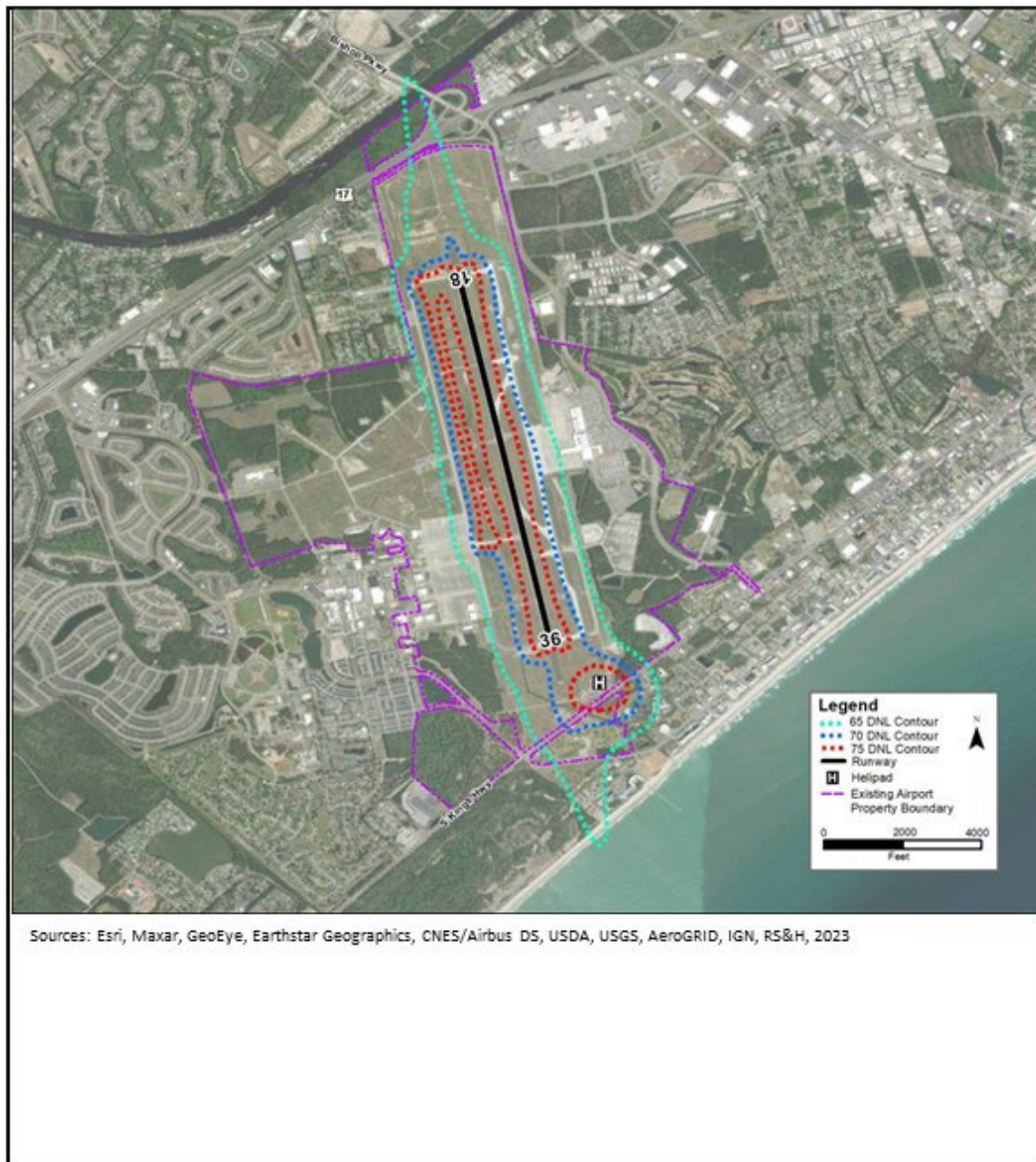
3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

FIGURE 3-8: 2028 DNL CONTOURS WITH TEMPORARY CONSTRUCTION PERIOD



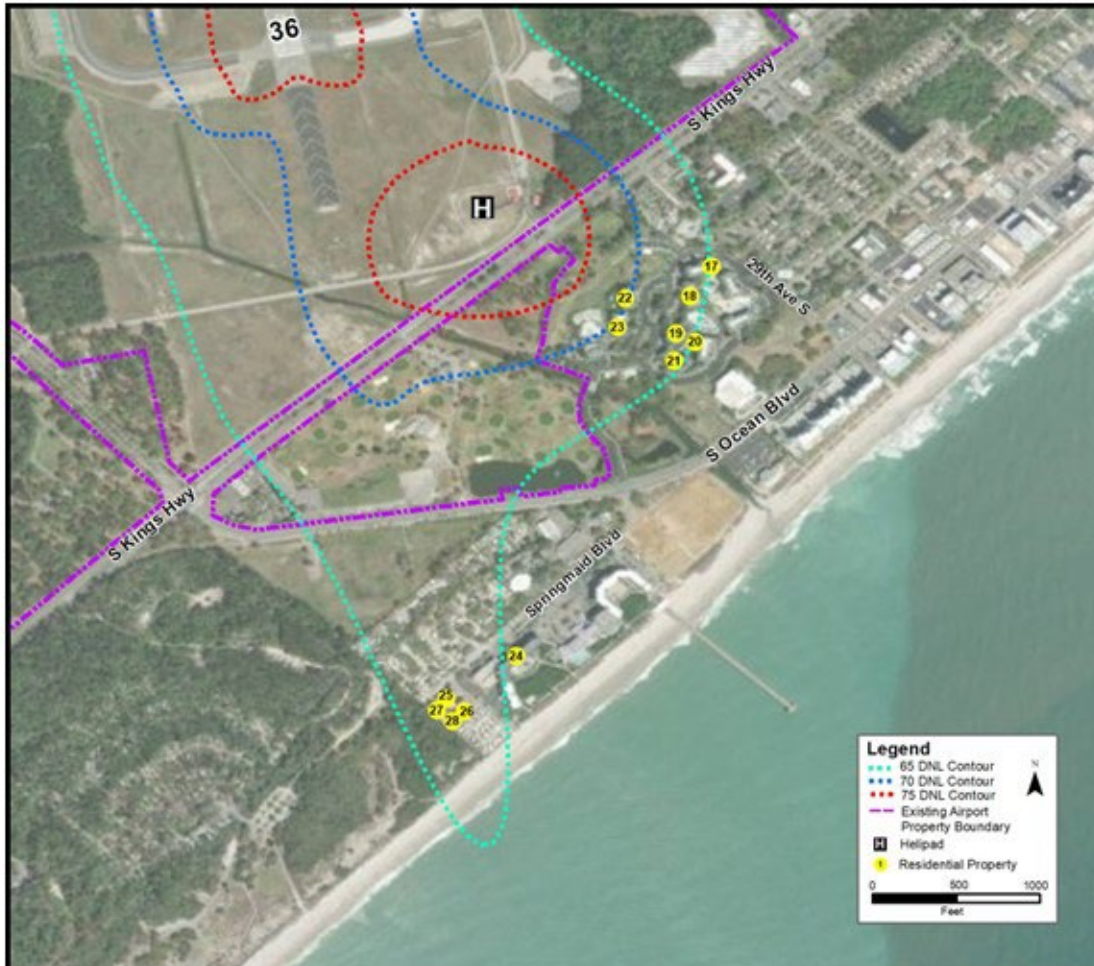
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FIGURE 3-9: RESIDENTIAL PROPERTIES EXPERIENCING A FOUR-MONTH TEMPORARY INCREASE IN NOISE



3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

FIGURE 3-10: RESIDENTIAL PROPERTIES EXPERIENCING A FOUR-MONTH TEMPORARY DECREASE IN NOISE



Sources: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, RS&H, 2023



3.4.6 Socioeconomics and Environmental Justice

Socioeconomics is a broad term for a project’s social or economic aspects or a combination of the two. A socioeconomic analysis evaluates how elements of the human environment, such as population, employment, housing, and public services, might be affected by a Proposed Project and alternative(s).

This section describes the existing condition, the significance threshold(s) pertaining to socioeconomics used to determine the potential effects of the Proposed Project compared to the No Action Alternative and describes those potential effects.

3.4.6.1 Affected Environment

Existing demographics as they relate to socioeconomics and environmental justice were researched. U.S. Census Bureau information for the City of Myrtle Beach and Horry County is the basis of the socioeconomic analysis. U.S. Census Block Group data is the basis for the environmental justice analysis.

Socioeconomics

According to the U.S. Census data, the City of Myrtle Beach has a population of 35,682, an average household income of \$45,701, and 22,456 housing units (U.S. Census Bureau, 2023). Horry County has a population of 351,029, an average household income of \$61,063, and 203,702 housing units (U.S. Census Bureau, 2023). The Airport plays a significant role in economic activity for the City of Myrtle Beach, Horry County, and the State of South Carolina. In 2018, the South Carolina Aeronautics Commission (SCAC) determined that the Airport created nearly 3 billion in economic activity and supported the employment of approximately 26,000 jobs (South Carolina Aeronautics Commission, 2018).

Environmental Justice

Two U.S. Census Blocks have the potential to be indirectly affected by the Proposed Project (450510517001 and 450510515032). **Table 3-9** describes the share of the population in poverty within the Census Blocks compared to South Carolina and the U.S. About 63% of the population in Census Block 450510517001 is below the poverty level. About 40% of the population in Census Block 450510515032 is below the poverty level. **Table 3-10** shows the total minority presence in the Census Blocks compared to South Carolina and the U.S. According to the U.S. Census Bureau, about 22% of the population in Census Block 450510517001 is a minority. About 38% of the population in Census Block 450510515032 is a minority.

TABLE 3-9: POPULATION BELOW THE POVERTY LEVEL

Area	Percent of the Population Living Below the Poverty Level
U.S. Census Block Group 450510517001	63%
U.S. Census Block Group 450510515032	40%
South Carolina	36%
U.S.	31%

Source: USEPA, EJScreen, 2024.

TABLE 3-10: MINORITY POPULATION

Area	Percent Minority
U.S. Census Block Group 450510517001	22%
U.S. Census Block Group 450510515032	38%
South Carolina	38%
U.S.	39%

Source: USEPA, EIScreen, 2024

3.4.6.2 Environmental Consequences

Significance Threshold

The FAA has not established a significance threshold for socioeconomic impacts in FAA Order 1050.1F; however, the FAA has identified factors to consider when evaluating the context and intensity of potential environmental impacts for socioeconomic impacts (see Exhibit 4-1 of FAA Order 1050.1F). Determining that significant impacts exist in the socioeconomic impact category normally depends on whether the potential socioeconomic impact(s) are interrelated with or inseparable from a physical or natural environmental effect. Please note that these factors are not intended to be thresholds. If these factors exist, there is not necessarily a significant impact; rather, the FAA must evaluate these factors in light of context and intensity to determine if there are significant impacts.

Factors to consider that may apply to socioeconomic resources, if they are interrelated with natural or physical environmental impacts (see 40 CFR § 1508.14), include, but are not limited to, situations in which the action would have the potential to:

- » induce substantial economic growth in an area, either directly or indirectly (e.g., through establishing projects in an undeveloped area);
- » disrupt or divide the physical arrangement of an established community;
- » cause extensive relocation when sufficient replacement housing is unavailable;
- » cause extensive relocation of community businesses that would cause severe economic hardship for affected communities;
- » disrupt local traffic patterns and substantially reduce the levels of service of roads serving an airport and its surrounding communities; or
- » produce a substantial change in the community tax base.

Socioeconomics Impacts

The Proposed Project would increase the Airport's and the community's economic activity compared to the No Action Alternative. The Proposed Project would result in short-term construction-related employment of local contractors, which could have a positive effect. Construction-related impacts would be temporary and are not expected to cause a significant secondary (induced) impact on the surrounding area.

The Proposed Project would not cause shifts in the projected population growth, cause changes to population movement, or result in the need for extensive relocations. The Proposed Project does not

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anticipate increasing the demand for fire, police, and life safety services. Compared to the No Action Alternative, the Proposed Project would not disrupt any nearby surrounding communities of any planned development, or relocate community businesses, and it would be consistent with the plans and goals of the community.

Environmental Justice Impacts

The closest environmental justice area (i.e., low income or minority population based on U.S. Census data) is the U.S. Census Block Group 450510515032 (EPA, 2023). Construction of the Proposed Project would occur entirely on Airport property and would not require relocating residents or businesses. No residents would be directly affected by the construction of the Proposed Project. The Proposed Project would occur entirely on Airport property and not within any neighborhoods or minority and low-income communities that could be disproportionately affected (EPA, 2023).

When compared to the No Action Alternative, the Proposed Project would not change the annual aircraft noise exposure (see **Section 3.4.5** for further details) nor result in significant impacts in 2026 or 2029.

As described in **Section 3.4.5**, noise exposure information for the temporary four-month construction period in 2028 was described. Eleven residential parcels in U.S. Census Block Group 450510517001, south of the Airport, would experience a slight decrease in aircraft noise during the four-month construction period. In U.S. Census Block Group Group 450510515032, there are 16 residential parcels west of Runway 18/36 which would experience a slight increase in aircraft noise for the same four months. These are considered temporary impacts and the threshold of significance for annual aircraft noise exposure would not result in a significant impact to environmental justice communities. Therefore, there are no impacts on environmental justice communities.

Mitigation, Avoidance, or Minimization Measures

Construction and implementation of the Proposed Project would not significantly affect socioeconomics or environmental justice. Therefore, no mitigation is required or proposed.

3.4.7 Visual Effects

This section describes the existing condition, significance threshold(s) pertaining to visual effects used to determine the potential visual effects of the Proposed Project compared to the No Action Alternative and describes those potential effects.

According to FAA 1050.1F Desk Reference, “visual effects deal broadly with the extent to which the proposed action or alternative(s) would either: 1) produce light emissions that create an annoyance or interfere with activities; or 2) contrast with, or detract from, the visual resources and/or the visual character of the existing environment.”

3.4.7.1 Affected Environment

The direct project study area is the Airport property. The viewshed of the direct project study area includes Airport facilities such as the terminal, ATCT, hangar facilities, and parking lots. Some residents would have a line of sight to the direct project study area. The closest residential population is adjacent

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to and west of the direct study area. Existing Airport outside lighting is for the safe movement of vehicles (e.g., personnel vehicles) and people by illuminating portions of the project study area.

3.4.7.2 Environmental Consequences

Significance Threshold

FAA Order 1050.1F does not define a significance threshold for visual effects; however, Exhibit 4-1 of the Order provides several factors to consider in evaluating the context and intensity of potential environmental impacts.

For light emissions, these factors include the degree to which the action would have the potential to:

- » “Create annoyance or interfere with normal activities from light emissions; and
- » Affect the visual character of the area due to the light emissions, including the importance, uniqueness, and aesthetic value of the affected visual resources.”

For visual resources/visual character, these include the extent the action would have the potential to:

- » “Affect the nature of the visual character of the area, including the importance, uniqueness, and aesthetic value of the affected visual resources;
- » Contrast with the visual resources and/or visual character in the study area; and
- » Block or obstruct the views of visual resources, including whether these resources would still be viewable from other locations.”

Potential aesthetic effects of an action are generally assessed by comparing the visual characteristics of the proposed development to existing development in the areas and to the environmental setting and by determining if a jurisdictional agency considers this contrast objectionable. The visual effects resulting from constructing and operating the Proposed Project would result from physical changes to the visual character of the project study area, including existing development, landforms, vegetation, and water surfaces.

Visual Effects Impacts

Construction of the Proposed Project would occur during the day and night. Night-time work would require temporary lighting for the safe movement of construction vehicles and workers. The lighting used would be directional and last only for the duration of night-time construction work. The temporary use of directional lighting for construction purposes would not result in light emission impacts on the surrounding area.

Operation of the Proposed Project would include permanent outside lighting to safely move vehicles (e.g., aircraft and personnel vehicles). The closest residential home is about 1,000 ft west of the Proposed Project. The Proposed Project would occur entirely on-Airport property and would not result in viewshed changes or additional light emissions for off-Airport residents as the Proposed Project would not create new buildings (i.e., temporary runway would be ground level) and would match the current existing viewshed at the Airport.

Mitigation, Avoidance, or Minimization Measures

The Proposed Project would have no significant impact on visual effects. Therefore, no mitigation is required or proposed.

3.4.8 Water Resources – Surface Waters

This section describes the existing condition, the significance threshold(s) pertaining to water resources – surface waters used to determine the potential effects of the Proposed Project compared to the No Action Alternative and describes those potential effects.

3.4.8.1 Affected Environment

The Airport's existing drainage at is collected through a system of drop inlets, pipes and open swales that convey the water to two outfalls. Rainfall runoff from the airfield is collected with a system of drop inlets and smaller diameter pipes that convey stormwater into the ditches that are located between the runway and taxiways. A northern portion of the airfield's stormwater system is conveyed to the north under Old Socastee Highway and U.S. Highway 17 through a box culvert that ultimately discharges into the intercoastal waterway. The southern portion of the airfield's stormwater system discharges through a system of swales and ditches that leads under U.S. Highway 17 Business and South Ocean Boulevard and discharges into the Atlantic Ocean.

The HCDA has existing policies and procedures for handling, disposing of, and cleaning up hazardous materials, chemicals, and other substances, including jet fuel. The HCDA developed an SPCC Plan that established roles and responsibilities for spill response on Airport property. The HCDA also has an NPDES permit for industrial activities at the Airport. This permit requires the HCDA to maintain a SWPPP and SPCC plan for the Airport property. These plans minimize the impacts of potentially contaminated stormwater on receiving bodies.

3.4.8.2 Environmental Consequences

Significance Threshold

Exhibit 4-1 of FAA Order 1050.1F provides the FAA's significance threshold for surface waters. A significant impact exists if the action would:

1. Exceed water quality standards established by federal, state, local, and tribal regulatory agencies; or
2. Contaminate public drinking water supply such that public health may be adversely affected.

In addition to the threshold above, Exhibit 4-1 of FAA Order 1050.1F provides additional factors to consider that may apply to surface waters, including the potential to:

- » Adversely affect natural and beneficial water resource values to a degree that substantially diminishes or destroys such values;
- » Adversely affect surface waters such that the beneficial uses and values of such waters are appreciably diminished or can no longer be maintained, and such impairment cannot be avoided or satisfactorily mitigated; or

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- » Present difficulties based on water quality impacts when obtaining a permit or authorization.

Water Resources – Surface Waters Impacts

The Proposed Project would affect on-Airport surface waters and receiving waters. The Proposed Project would be designed to minimize the potential impacts of surface waters. A preliminary analysis is underway to minimize potential effects and comply with FAA design standards.

Construction-related stormwater discharged in the direct study area could affect receiving waters. During construction, land disturbance would cause a short-term increase in sediments in stormwater runoff. Using fuels, lubricants, and solvents needed to operate construction equipment and materials could also cause pollutant discharges during rain events. The HCDA would ensure that their existing NPDES permit is updated to reflect the Proposed Project. To minimize potential impacts, the selected construction contractor would adhere to the NPDES permit requirements and implement best management practices (BMPs) during construction. BMPs for controlling stormwater runoff may include the use of silt fences, sediment traps, or sandbag barriers.

The HCDA would continue to operate under and per the provisions of the NPDES permit, including ensuring that the SWPPP and SPCC Plan address the Proposed Project. With these measures and implementing BMPs during construction, the Proposed Project would not adversely affect nearby water resources.

The HCDA would update the Airport's SWPPP, which outlines erosion and sediment control practices and waste disposal and spill prevention methods. This includes measures to reduce the possibility of accidental spills, improve response times if a spill does occur, and reduce safety hazards. Examples of these measures include, but are not limited to:

- » Neat and orderly storage of any chemical or fuels being stored at the site;
- » Prompt cleanup of any spills of hydraulic fluids, liquid, or dry materials; and
- » Performance of regular preventative maintenance on all equipment to prevent leaks.

The Proposed Project's additional impervious pavement would increase rainfall runoff to the Airport's stormwater system. During the project's design phase, a stormwater model would be prepared using previous storm drainage infrastructure analysis, available Light Detection and Ranging (LIDAR) information, and georeferenced design drawings. The contributing drainage areas would be mapped to build a skeletal model of the existing stormwater infrastructure. A 5-year, 10-year, and 25-year 24-hour design storm for Horry County would be used as the design storm for the water resources analysis. The model calculates the time of concentration of each sub-watershed to accurately reflect existing runoff based on slope, soil type, surface type, length of flow, and type of flow. A conceptual FAA-compliant drainage plan would describe engineered modifications to the existing on-Airport stormwater system to accommodate the Proposed Project's increase in rainfall runoff to the stormwater system and minimize potential effects on water resources – surface waters. The stormwater system would meet the City of Myrtle Beach's City Code of Ordinances water quality requirements. The control structures would be sized to store and release the first half-inch over the entire site or the first inch over the impervious runoff, whichever is greater, from the entire site over a 24-hour period per the South Carolina Department of Health and Environmental Control (SCDHEC) Standards for Stormwater Management and

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Sediment Reduction. The existing outfall ponds are equipped with a stormwater structure with an orifice to slow down the discharge flow from the ponds to meet the storage requirement.

Therefore, the Proposed Project would not significantly affect water resources, such as surface waters, as the Airport's stormwater management systems would be designed to detain rainfall runoff and meet the FAA's standards, implementation of best management practices (BMPs) as applicable (e.g., silt fencing) would occur, and comply with local permit regulations.

3.4.9 Cumulative Impacts

The CEQ regulations require the analysis and disclosure of the project's potential cumulative effects (40CFR § 1508.25(a)(2) and (3)). This disclosure informs the public if the project, when considered with other past, present, and reasonably foreseeable future actions, would contribute to significant environmental effects.

Cumulative effects are only possible for those resources that the Proposed Project would affect, specifically: biological resources, hazardous materials, historic, architectural, archaeological, and cultural resources, natural resources, and water resources, including surface waters and wetlands. The Proposed Project would not cause cumulative effects to resources that the Proposed Project would not affect. Each past, present, and reasonably foreseeable future action was cumulatively analyzed for its potential to affect the same environmental resources affected by the Proposed Project.

This section describes the cumulative projects, significance threshold(s) pertaining to cumulative effects, and the potential for the Proposed Project to contribute to potentially significant cumulative impacts when considered with those of other past, present, and reasonably foreseeable future actions.

3.4.9.1 Cumulative Projects

The following summary of past, present, and reasonably foreseeable future projects includes those undertaken on- and off-Airport property. Past actions include actions completed between 2018 and 2022, present (2023-2024) actions include those currently underway, and reasonably foreseeable future actions include those planned between 2025 and 2030.

On-Airport Projects

Past (2018 - 2022)

- » Taxiway A Rehab. – Phase 1
- » Terminal Apron Expansion
- » Taxiway A Rehab. – Phase 2
- » Taxiway B1 Rehabilitation
- » Rental Car Ready-Return Lot Canopy Project
- » Transient Hangar

Present (2023-2024)

- » Cell Phone Lot and Long Term Parking Expansion
- » Terminal Expansion
- » Economy / Credit Card Parking Expansion

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Future (2024-2030)

- » Terminal Expansion (continued from “Present” category, estimated completion late-2025)
- » 20-Unit T-Hangars
- » LIFT Academy Campus (proposed flight school)

Off-Airport Cumulative Projects

The following are off-Airport cumulative projects that have occurred or have the potential to occur between 2020 and 2030.

- » Historic Boardwalk & Oceanfront Capital Improvements (2021-2026)
 - Maintenance, renovations, and new facilities/infrastructure projects for city facilities and infrastructure in the boardwalk and oceanfront district.
- » Whispering Pines Golf Course (2021-2026)
 - Maintenance, renovations, and new facilities/infrastructure projects.
- » Myrtle Beach Air Force Base Redevelopment District Capital Improvements (2021-2026)
 - Maintenance, renovations, and new facilities/infrastructure projects.
- » Fred Nash Boulevard Connection (timeline unknown)
 - Widen the existing Fred Nash Boulevard to three lanes from Emory Road and extend the existing road to provide a direct connection to Harrelson Boulevard. Bicycle and pedestrian facilities are planned, where applicable.

3.4.9.2 Cumulative Impacts

Significance Threshold

The thresholds of significance in FAA Order 1050.1F, Exhibit 4-1 for each resource category apply to cumulative as well as direct and indirect impacts.

Proposed Project’s Cumulative Impact

The CEQ regulations require the analysis and disclosure of the Proposed Project’s potential cumulative effects (40 CFR §§ 1508.25(a)(2) and (3)). This informs the public if the Proposed Project, when considered with other projects occurring within the project area during specific periods (i.e., “past, present, and reasonably foreseeable actions”), would cause a significant environmental effect. This EA uses the information presented in this chapter to determine potential cumulative impacts.

Each past, present, and reasonably foreseeable future action was cumulatively analyzed for its potential to impact the same environmental resources impacted by the Proposed Project. Cumulative impacts are only considered for those resources the Proposed Project would affect (Air Quality; Climate; Biological Resources; Hazardous Materials; Natural Resources and Energy; Noise and Noise-Compatible Land Use; and Visual Effects). The Proposed Project would not result in cumulative impacts to resources that the Proposed Project would not affect (Coastal Resources; Children’s Health and Safety Risks; Department of Transportation Section 4(f) Resources; Environmental Justice; Farmlands, Historical, Architectural,

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Archaeological, and Cultural Resources; Land Use; Socioeconomics; and Water Resources – Wetlands, Floodplains, Groundwater, and Wild and Scenic Rivers).

Implementation of the Proposed Project would cause less than significant environmental effects related to Air Quality and Climate (temporary construction-related air emissions, a minor increase in surface transportation vehicle emissions); Hazardous Materials (temporary minor additional fuel use), Solid Waste (temporary minor construction waste and MSW), and Pollution Prevention; Natural Resources and Energy Supply (temporary minor increase in fuel, potable water, and electricity); Noise and Compatible Land Use (minor temporary change in aviation noise); Socioeconomics (temporary construction employment); and Water Resources – surface waters (additional rainfall-runoff).

As previous sections describe, the construction and operation of the Proposed Project would have less than significant impacts. When considered with projects that have occurred, are occurring, and are planned to occur in the reasonably foreseeable future, the Proposed Project would not cause significant environmental effects. It would not cause or contribute to significant cumulative environmental effects.

The Airport Sponsor's compliance with all federal, state, and local regulations and permit requirements outlined for the resources in the previous sections would ensure that the Proposed Project would not exceed any significance thresholds identified in FAA Order 1050.1F. All future projects involving federal funding or approval would be subject to review under NEPA to determine the potential for significant environmental impacts to result from their construction or implementation. Therefore, the Proposed Project's construction and operation, combined with the past, present, and reasonably foreseeable future projects, would result in no significant cumulative environmental impacts.

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4

AGENCY AND PUBLIC INVOLVEMENT



RS&H

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4.1 INTRODUCTION

The EA coordination process described in this chapter provides interested agencies and the public the opportunity to comment on the potential effects of the construction and operation of the Proposed Project.

A public involvement process is being conducted as per NEPA and FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*. This process provides the opportunity for public and agency input regarding the Proposed Project analyzed in this EA. The public and agency involvement process goals are to:

- » Provide information about the purpose and need of the Proposed Project and the alternatives the EA discusses (see **Chapter 1** and **Chapter 2**, respectively).
- » Obtain feedback about the proposed project from the public and agencies interested in and affected by the Proposed Project.
- » Inform those interested that the EA discloses information about project-related environmental effects.
- » Provide timely public notices to the interested parties to solicit comments and request participation in public open meetings concerning the Proposed Action.
- » Record comments received from interested parties.

4.2 PUBLIC INVOLVEMENT AND AGENCY COORDINATION APPROACH AND PROCESS

Pertinent federal statutes, regulations, executive orders, and guidance are considered when conducting the public involvement process. **Table 4-1** lists the agencies coordinated with regarding the Proposed Project and provided the opportunity to comment (see **Appendix D**). The agency comments received in response to the initial coordination letters are reflected in the application sections of **Chapter 3** (Affected Environment and Environmental Consequences). Copies of the agency response letters are included in **Appendix D**.

4.3 DISTRIBUTION AND PUBLIC REVIEW OF THE DRAFT EA

The Draft EA is made available for a 30-day review (30 days after the notice of availability advertisement) at the Airport's administrative office during normal business hours, on the Airport's projects website (<https://www.flymyrtlebeach.com/>), and at a local library (see **Table 4-2**).

The HCDA will hold a Draft EA public workshop no less than 30 days after the publication of the notice of availability. The workshop will solicit comments regarding the Proposed Project and discuss the potential environmental impacts with HCDA and its consultant (RS&H, Inc.). The date and location will be announced in a separate notice and published at least one week before the public workshop.

The Draft EA public workshop will occur during evening hours and will be held at a venue easily available to the public. The public workshop will have informational displays explaining the process and identifying the Proposed Project affects, provide the public the ability to ask questions of the HCDA and RS&H staff, and provide written comments at the workshop.

TABLE 4-1: INITIAL AGENCY COORDINATION

Agency	Agency
U.S. Army Corps of Engineers*	South Carolina Department of Health and Environmental Control (Air, Water, Land, Coastal)
U.S. Fish and Wildlife Service**	Horry County Infrastructure & Regulation*
U.S. Environmental Protection Agency	Horry County Planning and Zoning
South Carolina Department of Transportation	City of Myrtle Beach - Engineering Division
South Carolina Office of Coastal Resource Management (OCRM)	City of Myrtle Beach - Public Works
South Carolina Department of Health and Environmental Control Bureau of Environmental Health Services	City of Myrtle Beach - Planning & Zoning
South Carolina Aeronautics Commission (SCAC)	

Notes: * Reply correspondence in Appendix D. ** - Correspondence in Appendix B: Airport Wildlife Survey
 Source: RS&H, 2024.

TABLE 4-2: DRAFT EA AVAILABLE LOCATIONS

Location Name	Address
Myrtle Beach International Airport	1100 Jetport Rd, Myrtle Beach, SC 29577
Chapin Memorial Library	400 14th Ave N, Myrtle Beach, SC 29577

Source: RS&H, 2024.



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LIST OF PREPARERS



RS&H

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5.1 PRINCIPAL PREPARERS

This section lists the EA’s principal preparers, including HCDA and RS&H, Inc. representatives.

5.1.1 Horry County Department of Airports

Breck Dunne

Position: Director of Airport Development

5.1.2 RS&H Inc.

David Alberts

Position: Project Manager, Senior Environmental Planner

Education: B.S. Geography

Experience: Mr. Alberts has 25 years of NEPA-related experience. He is the MYR EA’s Project Manager and his primary responsibility was the Purpose and Need and Alternatives chapters. Mr. Alberts wrote technical sections for the EA, managed client, FAA, and RS&H team coordination, and conducted quality assurance.

Dave Full, AICP

Position: Vice President, Aviation Environmental Planning Service Group

Education: M.A. Urban Planning; B.A. Urban Planning

Experience: Mr. Full has 36 years of experience. He is responsible for the independent quality assurance of the NEPA analysis in the EA.

Dale Stubbs

Position: Vice President/Project Officer

Education: BS Civil Engineering; MS Technical Management

Experience: Mr. Stubbs has 35 years of Airfield Design and Construction experience. Mr. Stubbs is the Project Director/Engineer for the EA development and Runway Replacement Program, providing senior insight to the runway rehabilitation needs.

Andrew Bolin

Position: Senior Airfield Engineer

Education: B.S. Civil Engineering

Experience: Mr. Bolin is a licensed professional Engineer and has 16 years of civil engineering design experience, 15 years of which have been focused on airfield design and construction. Mr. Bolin provided civil design and construction insight for the EA development, with particular focus on the pavement design and construction phasing.

Mike Alberts

Position: Senior Aviation Specialist

Education: B.S. Geography

Experience: Mr. Alberts has 29 years of aviation noise modeling/mitigation experience. He is responsible for the technical noise analysis in the EA.

Katy Martin

Position: Environmental Consultant
Education: B.S. Natural Resources; M.S. Environmental Science
Experience: Ms. Martin has 8 years of environmental consulting experience. Her primary responsibility was conducting the wildlife assessment for T&E species at the Airport. Ms. Martin was the author of the Airport Wildlife Survey Report for the EA.

Monica Hamblin

Position: Aviation Environmental Specialist
Education: B.S. Interdisciplinary Studies-Environmental Science
Experience: Ms. Hamblin has 5 years of experience in the environmental field. She is responsible for assisting with data collection, and technical writing.

Michael Fesanco

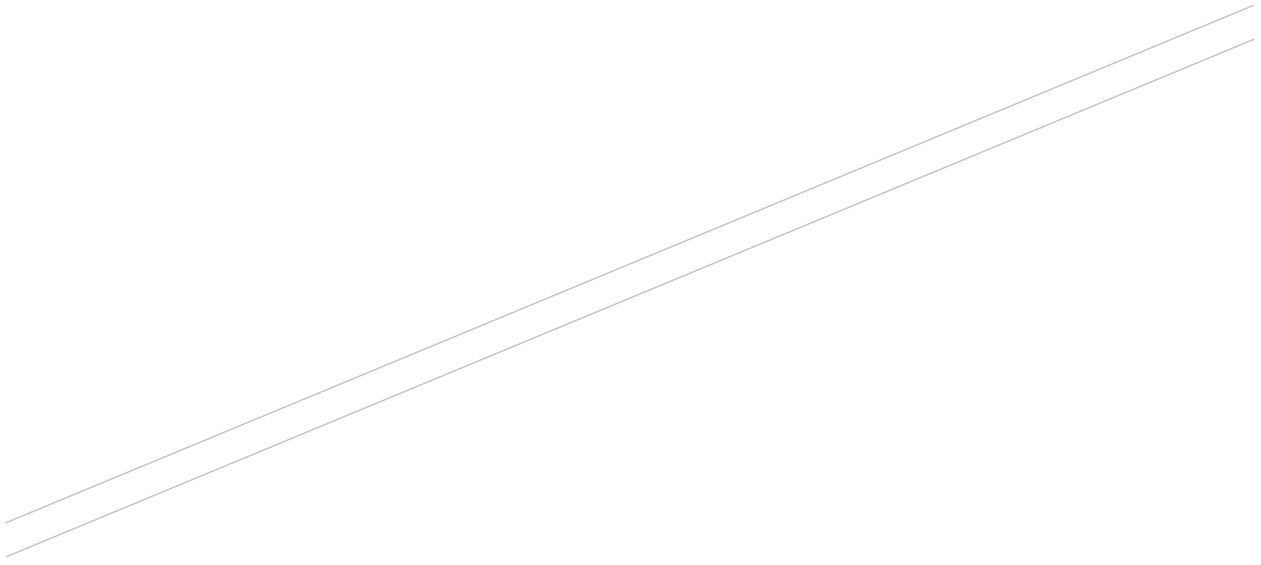
Position: Aviation Environmental Specialist
Education: M.S. Aviation Management; B.S. Aviation Management
Experience: Mr. Fesanco has 1 year of experience in the environmental field. He is responsible for assisting with data collection, technical writing, and exhibit production.

Alex Philipson

Position: Aviation Environmental Specialist
Education: M.S. Geology
Experience: Mr. Philipson has two years of experience in the environmental field. He is responsible for assisting with exhibit production.

Audrey Hsu

Position: Aviation Environmental Specialist
Education: B.S. Environmental Management and Science
Experience: Ms. Hsu has two years of experience in the environmental field. She is responsible for assisting with exhibit production.



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