Appendix A

Runway Length Justification

EWN Runway Length Justification

Introduction & Existing Conditions

Coastal Carolina Regional Airport (EWN) is located in the coastal region of Southeastern North Carolina. The Runway system consists of Runway 4-22, at 6,453 feet long and 150 feet wide; and Runway 14-32, at 4,001 feet long and 150 feet wide. Each Runway is served by a full-length parallel taxiway. The approach end of Runway 04 includes a 299-foot displaced threshold and a 333-foot paved overrun that is equipped with a 282-foot long Engineered Materials Arresting System (EMAS). Brice Creek is located off the end of Runway 4, which necessitated the EMAS system on Runway 4 approach end. Runway 4 has a precision approach with 3/4 mile visibility and Runway 22 has a non-precision approach with 7/8 mile visibility. Runway characteristics are presented in **Table 1**.

Table 1 – EWN Existing Runway Information

	Runway 4	Runway 22	Runway 14	Runway 32
Runway Length/Width	6,453′/150′		4,000′/150′	
Displaced Threshold	299′	N/A	N/A	
Runway RDC	C-III-4000		B-II-VIS	
Approach Type	Precision	Non-Precision	Visual	
Approach Minimums	≥ ¾ Mile		Visual	
TORA	6,453′		4,001′	
TODA	6,453′		4,001′	
ASDA	6,053′	6,153′	4,001′	
LDA	5,753′	6,153′	4,001′	

Definitions: RDC – Runway Design Code; TORA – Takeoff Run Available; TODA – Takeoff Distance Available; ASDA – Accelerate Stop Distance Available; LDA – Landing Distance Available
Source: EWN 5010 Data Sheet, FAA IAPs

Coastal Carolina Regional Airport is currently served by American Airlines for Air-Taxi/Air-Carrier operations with the Embraer 145 and the Bombardier CRJ 700 and CRJ 900. As described in the recent Airport Master Plan Update, although the current critical aircraft is the Bombardier CRJ-200, this is projected to change to a Bombardier CRJ-900 or similar category aircraft within the next 10 years.

EWN is proposing an extension of Runway 4/22 off the 22 end. This extension would provide extra landing distance for approaches on Runway 4 and extra takeoff distance from both runway ends. The Runway 4 approach currently has 5,753 feet of landing distance available (LDA) and 6,453 feet of Takeoff Run and Takeoff Distance Available (TORA & TODA) This extension would provide much needed landing distance and obstacle mitigation from Croatan National Forest.

The following sections present a Runway Length Analysis for EWN based on the guidelines laid out in **FAA AC 150/5325-4B - *Runway Length Requirements for Airport Design***.

Runway Length Analysis

The steps for determining runway length based on FAA AC 150/5325-4B are summarized below:

- **Step 1**: Identify the critical fleet mix of aircraft that make "regular use" at the airport (i.e. 500 operations or more per year.
- **Step 2**: Identify the aircraft that will require the longest runway length at Maximum Takeoff Weight (MTOW)
- **Step 3**: Use the aircraft weight category (described below) to determine the design methodology
- **Step 4**: Select the recommended length following the process laid out in the chapter associated with the weight classification identified in Step 3
- **Step 5**: Apply any required length adjustments

As noted in Step 3 above, there are three distinct design approaches for determining runway length requirements depending on an airplane's MTOW:

- **12,500 lbs or less**: Family grouping of small airplanes (Chapter 2 of AC)
- **Over 12,500 lbs but less than 60,000 lbs**: Family grouping of large airplanes (Chapter 3 of AC)
- **60,000 lbs or more, and Regional Jets below 60,000 lbs**: Individual Airplane planning manuals (Chapter 4 of AC)

Because the airport has two runways, many of the General Aviation operations occur on the crosswind Runway 14/32; however, it was assumed that the GA Jet traffic as well as the commercial traffic would occur on the main Runway 04/22 because of its longer length, lower minimums, and instrument approaches. For this reason, the sections below individually explore the analysis laid out in Chapters 3 and 4 of the Advisory Circular.

General Aviation Jet Operations Analysis (FAA AC Chapter 3)

Using counts from the FAA's Traffic Flow Management System Counts (TFMSC) it was determined that the following aircraft over 12,500 lbs perform the most operations and are using – or may be using – the Airport on a regular basis. While the TFMSC doesn't identify any of these jets as performing 500 or more operations individually, TFMSC operations totals are lower than tower counts, and the Master Plan noise calculations note that approximately 28% of GA operations were performed by jets, equaling approximately 15,000 ops when applied to 2022 tower data. Most commonly used GA jets falling within the identified weight ranges at the airport include:

- Raytheon / Beech Beechjet 400 / T-1 (MTOW: 16,100 lbs)
- Bombardier / Canadair Challenger 300 (MTOW: 38,850 lbs)
- Cessna Citation CJ3 (MTOW: 13,870 lbs)
- Cessna Citation V / Ultra / Encore (MTOW: 16,300 lbs)
- Cessna Excel / XLS (MTOW: 20,200 lbs)

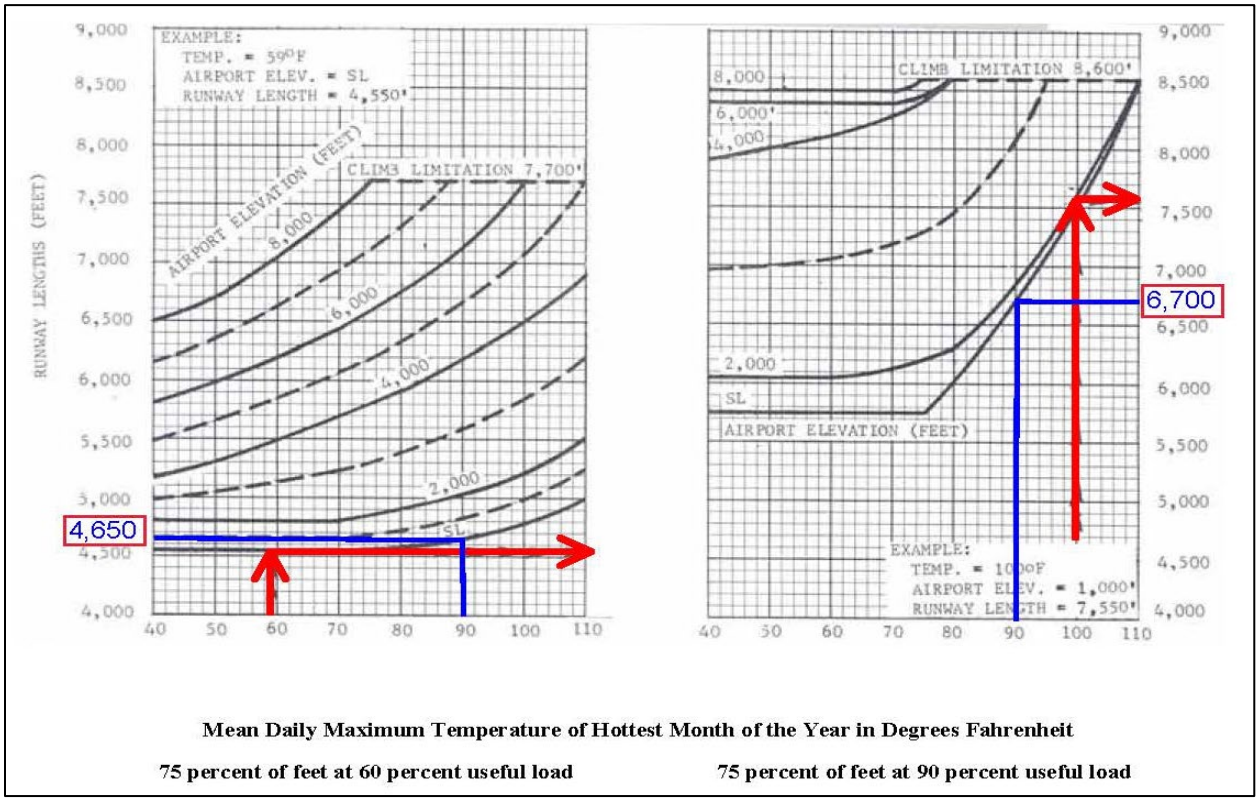
Calculations based on 75 and 100 percent of fleet can be seen in **Exhibits 1** and **2** on the following pages. Aircraft identified as making up 75 and 100 percent of fleet as identified in the AC are shown in **Tables 2** and **3**.

Table 2 – Airplanes that Make Up 75 Percent of the Fleet

Manufacturer	Model	Manufacturer	Model
Aerospatiale	Sn-601 Corvette	Dassault	Falcon 10
Bae	125-700	Dassault	Falcon 20
Beech Jet	400A	Dassault	Falcon 50 / 50 EX
Beech Jet	Premier I	Dassault	Falcon 900 / 900 B
Beech Jet	2000 Starship	IAI	Jet Commander 1121
Bombardier	Challenger 300	IAI	Westwind 1123 / 1124
Cessna	500 Citation / 501 Citation Sp	Learjet	20 Series
Cessna	Citation I / II / III	Learjet	31 / 31A / 31A ER
Cessna	525 A Citation II (CJ-2)	Learjet	35 / 35A / 36 / 36A
Cessna	550 Citation Bravo	Learjet	40 / 45
Cessna	550 Citation II	Mitsubishi	Mu-300 Diamond
Cessna	551 Citation II / Special	Raytheon	390 Premier
Cessna	552 Citation	Raytheon Hawker	400 / 400 XP
Cessna	560 Citation Encore	Raytheon Hawker	600
Cessna	560 / 560 XL Citation Excel	Sabreliner	40 / 60
Cessna	560 Citation V Ultra	Sabreliner	75 A
Cessna	650 Citation VII	Sabreliner	80
Cessna	680 Citation Sovereign	Sabreliner	T-39

Source: FAA AC 150/5325-4B

Exhibit 1 - 75 Percent of Fleet Runway Length Analysis



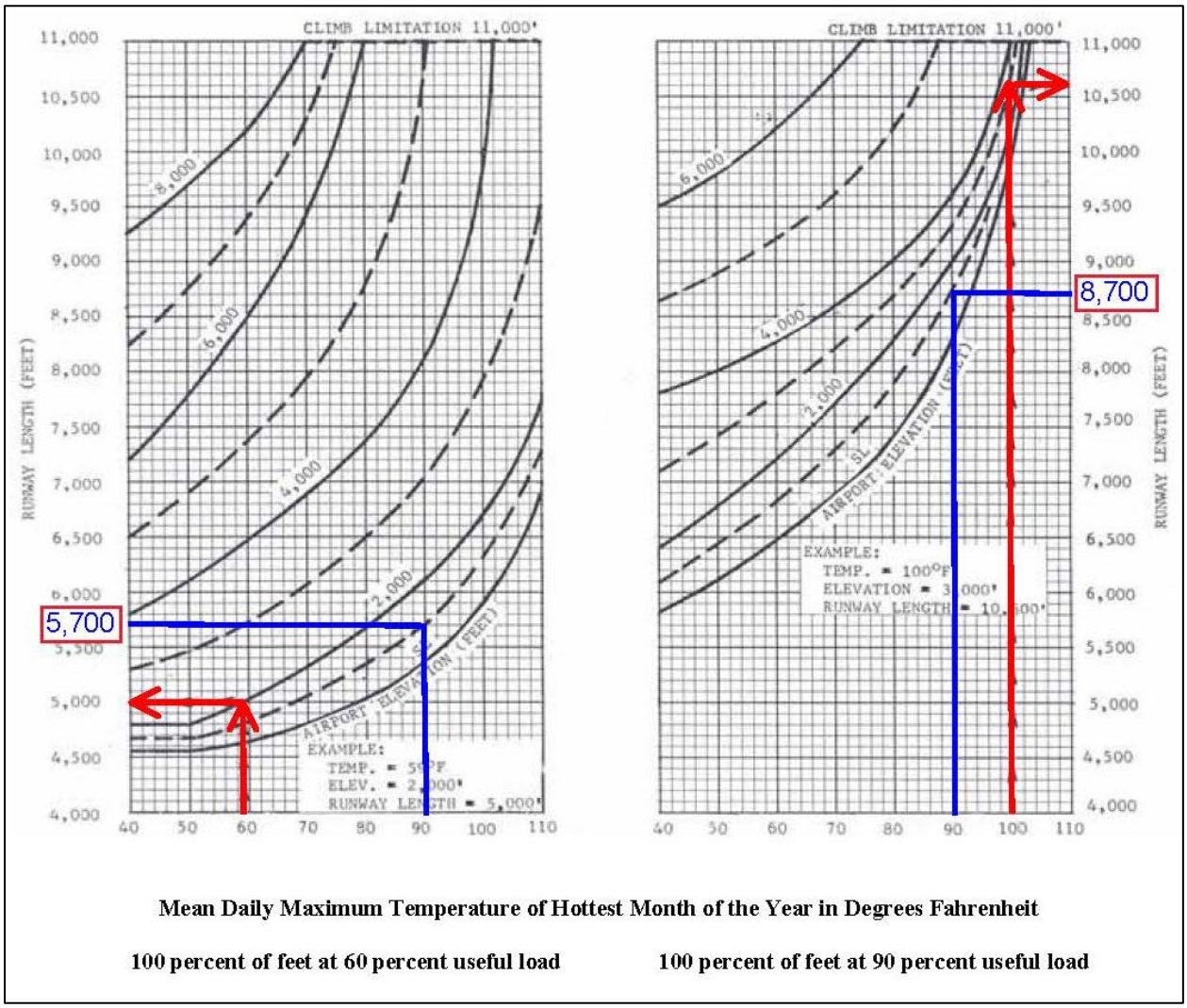
Source: FAA AC 150/5325-4B, Parrish & Partners Analysis 2024.

Table 3 – Airplanes that Make Up 100 Percent of the Fleet

Manufacturer	Model	Manufacturer	Model
Bae	Corporate 800 / 1000	IAI	Astra 1125
Bombardier	600 Challenger	IAI	Galaxy 1126
Bombardier	601 / 601-3A / 3ER Challenger	Learjet	45 XR
Bombardier	604 Challenger	Learjet	55 / 55B / 55 C
Bombardier	BD-100 Continental	Learjet	60
Cessna	S550 Citation S / II	Raytheon Hawker	Horizon
Cessna	650 Citation III / IV	Raytheon Hawker	800 / 800 XP
Cessna	750 Citation X	Raytheon Hawker	1000
Dassault	Falcon 900 C / 900 EX	Sabreliner	65 / 75
Dassault	Falcon 2000 / 2000 EX	-	-

Source: FAA AC 150/5325-4B

Exhibit 2 – 100 Percent of Fleet



Source: FAA AC 150/5325-4B, Parrish & Partners Analysis 2024.

These charts, however, are calculated based on a runway with zero gradient and no wind in dry conditions. While only landing distance is affected by slippery runways, the effective gradient of Runway 04-22 should be adjusted for in the takeoff distance calculations (+11 feet;, Runway High Point – Runway Low Point = 1.1) **Table 4** below presents the lengths presented in **Exhibits 1** and **2** adjusted for the gradient.

Table 4 – Runway Length Analysis

Fleet & Load Factor (Aircraft > 12,500 lbs but <= 60,000 lbs)	Takeoff Distance (From Chart)	Distance Adjusted for Gradient (+11')
100% of Fleet & 90% of Useful Load	8,700	8,711
100% of Fleet & 60% of Useful Load	5,700	5,711
75% of Fleet & 90% of Useful Load	6,700	6,711
75% of Fleet & 60% of Useful Load	4,650	4,661

Source: FAA AC 150/5325-4B, Parrish & Partners Analysis 2024.

While there may not be evidence that 100% of the fleet operates at the airport on a regular basis, it is reasonable to assume that because of the nature of travel to the airport (leisure / vacation), aircraft may be operating at higher than a 60% useful load, therefore a length of **6,711 for 75% of fleet at 90% of useful load is preferred**. Under current conditions, aircraft in the 75% (or 100%) fleet category cannot operate at 90% of useful load.

Commercial Operations Analysis (AC Chapter 4)

FAA AC 150/5325-4B, Runway Length Requirements for Airport Design, provides guidance for determining runway length based on the weight of the critical aircraft. According to the advisory circular, runway length design for larger GA jets and commercial aircraft based on the following:

- Critical design aircraft and the associated Airport Planning Manuals (APM)
- Operational Take-Off Weight
- Maximum Landing Weight (MLW)
- Mean Daily Maximum Temperature of the Hottest Month at the Airport
- Airport Elevation above Mean Sea Level
- Dry Runway for Take-Off, Dry and Wet Runway for Landing
- Effective Runway Gradient, No Wind

Table 5 below presents the highest operating aircraft or most demanding aircraft at the airport that takes the above-listed items into consideration.

(The rest of this page is intentionally left blank)

Table 5 - Runway Length Required for Commercial Aircraft Takeoff & Landing

Aircraft	Maximum Takeoff Weight (MTOW)	Takeoff Distance (FT) @ ISA	Takeoff Distance @ ISA + 15° C	Maximum Landing Distance[1]	Maximum Landing Distance (Ft.) Wet (+15%)
Embraer 145[2]	46,275	6,750	6,850	4,500	5,175
Bombardier CRJ 200	53,000	5,800	6,700	4,900	5,635
Bombardier CRJ 700	72,750	5,040	5,300	5,100	5,865
Bombardier CRJ 900[3]	84,500	5,775	6,800	5,800	6,670

Source: 2016 Master Plan Update, Aircraft Planning Manual (for Embraer 145).
Definitions: ISA – International Standard Atmosphere
Note 1: It was assumed flaps are at 45°
Note 2: It was assumed that the ERJ-145 EP model (AE3007 A1/1 engine) operates at the airport
Note 3: American Airlines does not currently operate CRJ 900 at Maximum Takeoff Weight due to Runway length restrictions.

Currently the Embraer 145, the CRJ-200, and CRJ-900 would not be able to take off at MTOW. Additionally, the CRJ-700 and CRJ-900 would not be able to land in wet conditions.

With more than 100 monthly departures at EWN, commercial service by American Airlines is impacted by the declared distances on Runway 4-22. Based on information provided on the following page regarding their Embraer 145 operations, if not operating under current restricted takeoff weights, American Airlines would carry an estimated additional payload of 350 to 1,500 pounds (2 to 7 passengers) per flight.

American Airlines

April 12, 2023

Mr. Tommy Dupree
District Director, Southern Regional Airports Division
Federal Aviation Administration
2600 Thousand Oaks Blvd., Suite 2250
Memphis, TN 38118

Mr. Dupree,

American Airlines is pleased to submit this letter of support for Coastal Carolina Regional Airport's (EWN) application for funding for a proposed runway extension.

American provides more than 100 departures per month from EWN Airport with daily non-stop service to Charlotte Douglas International Airport (CLT) and seasonal service to Ronald Reagan National Airport (DCA). American has evaluated the Airport's proposal and found it to be beneficial to American's operations with E145 aircraft, as that fleet type requires more runway length than most regional jets.

A runway extension would offer additional payload capability and obstacle mitigation when comparing summer departure temperatures as well as a high route probability. On Runway 22, we believe a runway extension would increase payload by 350 LBs or 2 passengers, while departures on Runway 04 could see an increase of 1,500 LBs in additional payload or 7 passengers. Given the proximity of the Brices Creek Recreation Area to the airport, we also believe the runway extension would serve as the most effective investment to address obstacle mitigation from the nearby forested area.

American Airlines supports Coastal Carolina Regional Airport's request for AIP funding to increase the runway length and improve the safety area, and we ask that the Memphis ADO give this request full consideration. We are happy to provide additional feedback on the benefits of the runway extension with other inputs, when needed.

Sincerely,

Lenore Diamond

Lenore Diamond
Managing Director, Airport Affairs and Properties

Appendix B

2016 Airport Master Plan Update

Alternative Analysis

.

4.1 Runway Alternatives

The results of the Facility Requirements (Chapter 3) indicates a need for improvements to both runways at EWN. These improvements include extending Runway 04/22 to accommodate the future critical aircraft and address the separation between both runways and their associated parallel taxiways. The alternatives developed to address these improvements are discussed in the following sections.

4.1.1 Runway 04/22 Alternatives

The forecasts and facility requirements analysis developed for this Master Plan Update indicate that the critical aircraft for Runway 04/22 will increase from a Bombardier CRJ-200 (current critical aircraft) to a Bombardier CRJ-900 within the next 10 years. This change will occur once there are 500 annual operations by the CRJ-900 or similar category aircraft. The change will result in the Airport Reference Code (ARC) increasing from C-II to C-III. Also, the CRJ-900 requires a 6,800-foot runway length when adjusted for runway end elevations and maximum daily temperatures to operate without weight penalties or reduced range. Therefore, as noted in Chapter 3, it is recommended to extend the existing Runway 04/22 length of 6,453-feet by 347-feet resulting in a total runway length of 6,800-feet. The following alternatives have been developed to identify options for extending Runway 04/22.

Runway 22 Alternative 1 – Extend the approach end of Runway 22 and Taxiway A by 347-feet towards the northeast, resulting in a 6,800-foot runway (**Figure 4-1**). This alternative requires the relocation of the existing localizer antenna, so it is clear of the minimum 600-feet Runway Safety Area (RSA) and Runway Object Free Area (ROFA) from the end of the extended runway. Also required is the realignment of Williams Road and a portion of Scott Street to accommodate the RSA and ROFA. This alternative would result in declared distances impacts to Accelerate-Stop Distance Available and Landing Distance Available for Runway 04 operations since the RSA and ROFA on the Runway 22 End are 600-feet long rather than the standard 1,000 feet.

Pros

- Provides 6,800-feet of Takeoff Run Available on Runway 04 and Runway 22
- Road relocation does not require a new rail crossing
- Minimizes the road relocation curve requirements

Cons

- Requires land acquisition for Runway 22 RPZ
- Provides only 6,100 feet of Landing Distance Available for landing on Runway 4
- Potential impacts to businesses/residences
- Requires realignment of Williams Road
- Williams Road realignment limits the potential for any future extension

Runway 22 Alternative 2 – Extend the approach end of Runway 22 and Taxiway A by 347-feet towards the northeast, resulting in a 6,800-foot runway and requires relocating Williams Road and the localizer antenna so a 1,000-foot long RSA and ROFA standard is met (**Figure 4-2**). This alternative provides for the full 6,800-foot runway for take-off run available on both Runway 04 and 22. This alternative would result in a straight realignment of Williams Road, crossing the adjacent railroad tracks, and tying into Brown Drive.

Pros

- Provides 6,800-feet for Runway 04/22 take-off run requirements
- Increases Landing Distance Available (6,500-feet) for Runway 04
- Provides full 6,800-foot runway length for requirements on Runway 04
- Provides full 1,000 foot of RSA/ROFA on Runway 22 end
- Relocates localizer beyond recommended 1,000 feet from Runway 22 end
- Removes Williams Road from directly beyond the end of Runway 22

Cons

- Requires a new rail crossing
- Requires land acquisition for Runway 22 RPZ
- Potential impacts to businesses/residences
- Requires relocation of the Williams Road access to Highway 70

Runway 22 Alternative 3 – Similar to Alternative 1 but relocates the localizer antenna beyond 800-feet from the proposed Runway 22 end (**Figure 4-3**), requiring a sharper curve in the realigned Williams Road. This alternative provides for a full 6,800- on Runway 04 and 22. This road relocation and localizer location will accommodate 800-feet of RSA and ROFA.

This alternative would also allow the Airport to extend the runway an additional 200 feet (to 7,000 feet) in the future without requiring Williams Road to be relocated again.

Pros

- Provides 6,800-feet for Runway 04/22 take-off run requirements
- Less Impacts to Runway 04 Accelerate-Stop Distance Available and Landing Distance Available compared to Alternative 1 due to additional 200' of RSA provided
- Does not require a new rail crossing
- Maximizes available airport land for runway extension to 7,000' without the need for a future road and localizer relocation

Cons

- Requires land acquisition for Runway 22 RPZ
- Potential impacts to businesses/residences
- Requires relocation of Williams Road

Runway 22 Alternative 4 – Does not include a runway extension but does provide an option for meeting the FAA 1,000-foot RSA and ROFA requirement. (**Figure 4-4**). The localizer antenna would be relocated approximately 400-feet from its current location so that it falls outside of the 1,000-foot RSA. Williams Road and Scott Street would be realigned along the same alignment as proposed in Alternative 1. The full existing runway length would be available for takeoff run (6,453-feet) in both directions with this alternative, and the full runway length would be provided for Landing Distance Available on Runway 04.

Pros

- Minimizes development costs
- Provides full 1,000-foot RSA/ROFA on Runway 22 end
- Maximizes available use of the runway without an extension
- Would accommodate a future extension of Runway 22 to 6,800-feet
- Does not require additional land acquisition for Runway 22 RPZ
- Location of RPZ does not change, minimizing potential impacts to businesses/residences

Cons

- Does not achieve the entire 6,800-foot facility requirements for runway length
- Requires relocation of Williams Road

Runway 04 Alternative 1 – Extends the approach end of Runway 04 by 347-feet towards the south and allows the existing threshold to be relocated 647-feet to the end of the extended runway (**Figure 4-5**). This alternative would require installation of a new or relocated EMAS to meet the RSA requirements. This alternative provides a 6,800-feet of take-off run in both directions and would maximize the ability to utilize the runway for take-off and landing on Runway 22 and increases the Landing Distance Available on Runway 04. The alternative would require the filling and grading of a portion of Brice Creek to accommodate the overrun.

Pros

- Provides 6,800-feet for Runway 04/22 take-off run requirements
- Allows for full 6,800-foot Accelerate-Stop Distance and Landing Distance Available for operations on Runway 22.
- Provides for full use of runway for take-off and landing on Runway 22 and increases Landing Distance Available on Runway 04.
- No significant property/easement acquisitions for Runway 04 RPZ
- No residential/business impacts

Cons

- Requires partial fill of Brice Creek
- Requires relocation/reconstruction of Runway 04 EMAS
- Extensive environmental/permitting requirements
- High construction and mitigation costs
- May require removal of additional tree obstructions within the Croatan National Forest

Runway 04 Alternative 2 – Similar to Alternative 1, extending the approach end of Runway 04 by 347-feet towards the south and allowing the existing threshold to be relocated 647-feet to the end of the extended runway but does not require the use of an EMAS system to meet the minimum RSA requirements (**Figure 4-6**). This alternative provides a 600-foot safety area on the approach end of Runway 04 which results in a reduced (6,400-foot) Landing Distance Available and Accelerate-Stop Distance on Runway 22. This alternative would require the same filling and grading of Brice Creek as proposed in Alternative 1.

Pros

- Provides 6,800-feet for Runway 04/22 take-off run requirements
- No significant property/easement acquisitions for Runway 04 RPZ
- No residential/business impacts
- Does not require an EMAS system

Cons

- Does not provide the full 1,000-foot RSA beyond Runway 04 limiting the Runway 22 Accelerate-Stop Distance and Landing Distance Available to 6,400-feet
- Requires partial fill of Brice Creek
- Significant environmental/permitting requirements
- Does not provide full standard RSA/ROFA
- High construction and mitigation costs
- May require removal of additional tree obstructions within the Croatan National Forest

Runway 04 Alternative 3 – Extends the approach end of Runway 04 by 347-feet towards the south and allows the existing threshold to be relocated 647-feet to the end of the extended runway, however a full 1,000-foot RSA and ROFA would be constructed beyond the proposed Runway 04 approach end (**Figure 4-7**). This alternative would not require installation of an EMAS system. This alternative provides a 6,800-foot in both directions and would maximize the ability to utilize the runway for take-off and landing on Runway 22 and increase the Accelerate-Stop Distance and Landing Distance Available for Runway 04. This option would result in additional land disturbance and additional filling of Brice Creek, potentially requiring realignment of the creek channel.

Pros

- Provides 6,800-feet for Runway 04/22 take-off runway requirements
- Allows for full 6,800-foot Accelerate-Stop Distance and Landing Distance Available for operations on Runway 22.
- Increases Accelerate-Stop Distance and Landing Distance Available for operations on Runway 04
- No significant property/easement acquisitions for Runway 04 RPZ
- Provides full 1,000-foot RSA/ROFA on Runway 04 end
- Does not require an EMAS system

Cons

- Requires the partial fill and realignment of Brice Creek
- Significant environmental/permitting requirements
- High construction and mitigation costs
- May require removal of additional tree obstructions within the Croatan National Forest

The proximity of Williams Road and commercial/residential development on the northeast side of the Airport and Brice Creek on the southwest side limit the options available for extending Runway 04/22. Extending the runway towards the northeast (Runway 22 end) results in road realignment/relocations and potential land, residence, and commercial property acquisitions and impacts. The rail line located northeast of the Airport also presents a challenge for relocating roadways without adding additional rail crossings.

Extending the runway towards the southwest (Runway 04 end) presents a challenge due to the proximity of Brice Creek. Any extension in this direction will require filling and grading of a portion of the Creek to meet RSA design standards. Also, extending the runway in this direction will likely require the removal of additional obstructions located within the Croatan National Forest which is administered by the U.S. Forest Service.

LEGEND

- AIRPORT PROPERTY LINE
- PROPOSED AIRSIDE PAVEMENT (RUNWAY, TAXIWAY, APRON)
- PROPOSED VEHICULAR PAVEMENT (ROADWAY, PARKING LOT)
- PROPOSED BUILDINGS (TERMINAL, ARFF, HANGARS, ETC.)
- PROPOSED NAVAID FACILITIES

HISTORIC CEMETERY

RUNWAY PROTECTION ZONE

RELOCATE WILLIAMS ROAD

TAXIWAY K

347' EXTENSION

RSA

RUNWAY 4-22

22

600'

RELOCATE LOCALIZER

TAXIWAY A

AIR CARRIER APRON

EXTEND RUNWAY 22 347' WITH 600' RSA BEYOND END

	4	22
EXTENSION	-	347
DISPLACED THRESHOLD	300	0
RSA BEYOND END	EMAS	600
TORA/TODA	6800	6800
ASDA	6400	6500
LDA	6100	6500

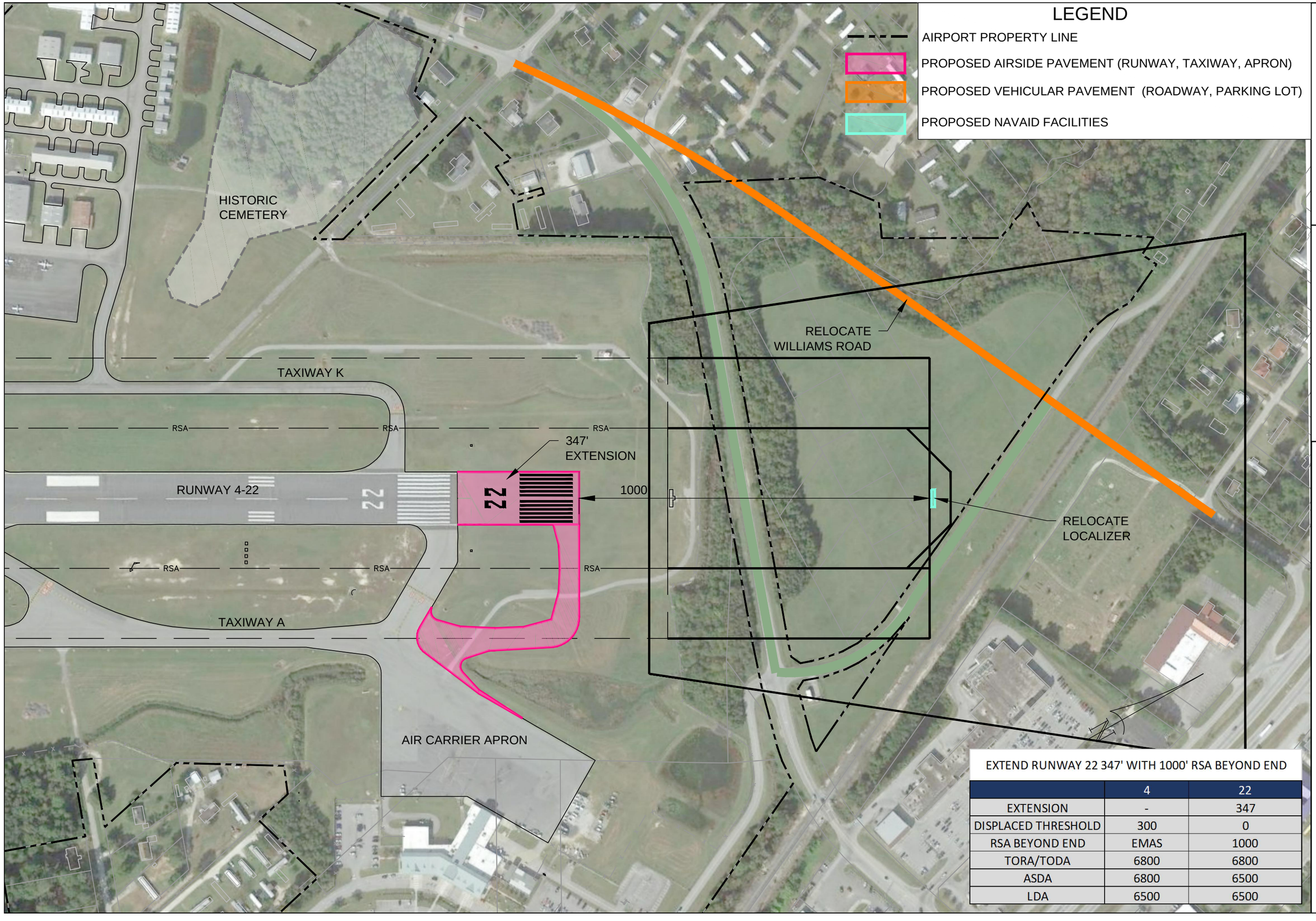
125 0 250

SCALE IN FEET
1"= 250'

COASTAL CAROLINA Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension - Runway 22 Extension - Alternative 1

FIGURE 4-1 MARCH 2018 TALBERT & BRIGHT, INC.



LEGEND

- AIRPORT PROPERTY LINE
- PROPOSED AIRSIDE PAVEMENT (RUNWAY, TAXIWAY, APRON)
- PROPOSED VEHICULAR PAVEMENT (ROADWAY, PARKING LOT)
- PROPOSED NAVAID FACILITIES

250
0
125
SCALE IN FEET
1"= 250'

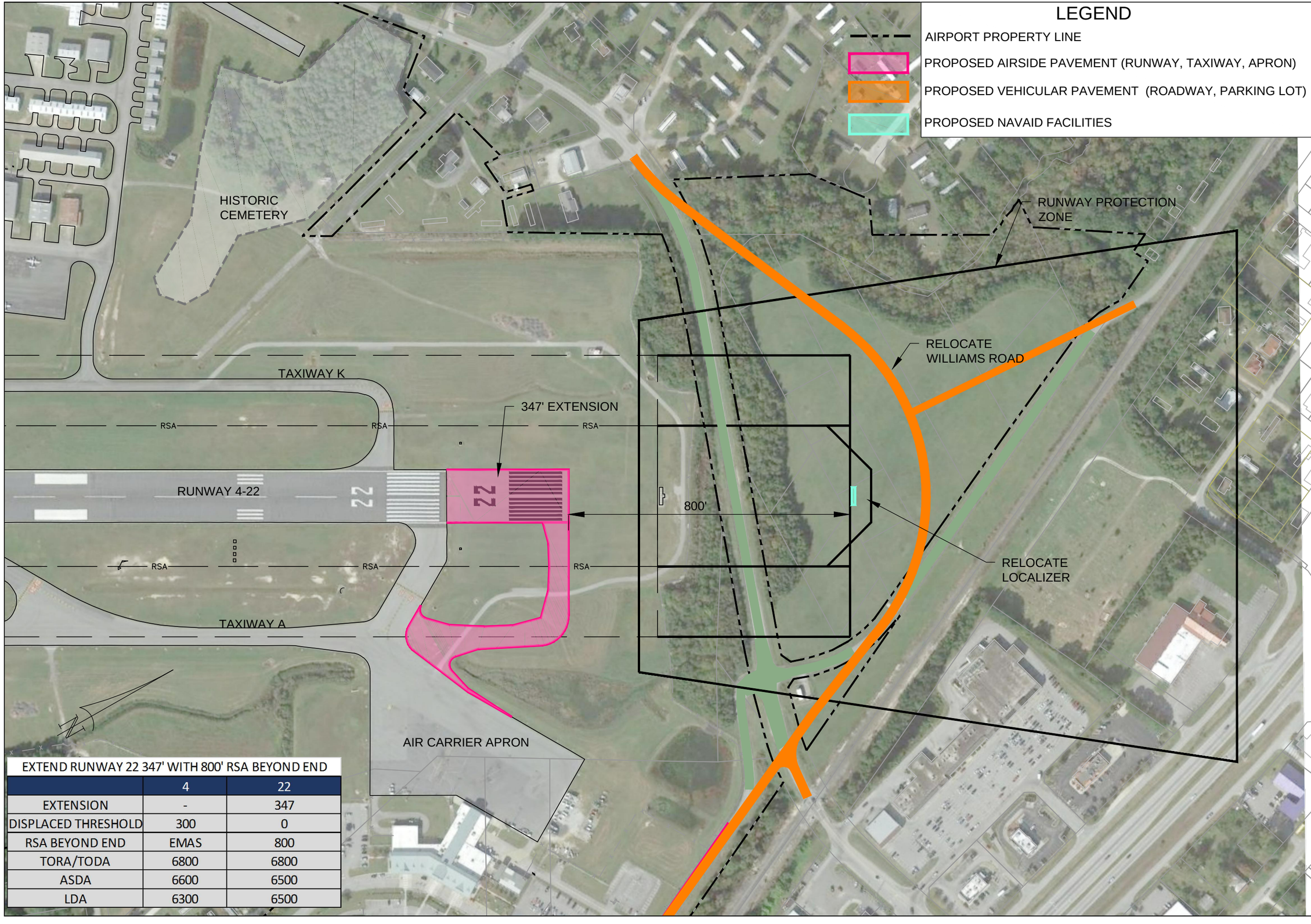
EXTEND RUNWAY 22 347' WITH 1000' RSA BEYOND END

	4	22
EXTENSION	-	347
DISPLACED THRESHOLD	300	0
RSA BEYOND END	EMAS	1000
TORA/TODA	6800	6800
ASDA	6800	6500
LDA	6500	6500

COASTAL CAROLINA
Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension - Runway 22 Extension-Alternative 2

FIGURE 4-2 MARCH 2018 TALBERT & BRIGHT, INC.



EXTEND RUNWAY 22 347' WITH 800' RSA BEYOND END

	4	22
EXTENSION	-	347
DISPLACED THRESHOLD	300	0
RSA BEYOND END	EMAS	800
TORA/TODA	6800	6800
ASDA	6600	6500
LDA	6300	6500

125 0 250

SCALE IN FEET
1"= 250'

COASTAL CAROLINA
Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension

FIGURE 4-3 MARCH 2018 TALBERT & BRIGHT, INC.

LEGEND

AIRPORT PROPERTY LINE

PROPOSED VEHICULAR PAVEMENT (ROADWAY, PARKING LOT)

PROPOSED NAVAID FACILITIES

HISTORIC CEMETERY

TAXIWAY K

RSA

RUNWAY 4-22

22

1000'

TAXIWAY A

AIR CARRIER APRON

RELOCATE WILLIAMS ROAD

RELOCATE LOCALIZER

GRADE RUNWAY 22 RSA TO 1,000'

	4	22
EXTENSION	-	-
DISPLACED THRESHOLD	300	0
RSA BEYOND END	EMAS	1000
TORA/TODA	6453	6453
ASDA	6453	6153
LDA	6153	6153

125 0 250

SCALE IN FEET
1"= 250'

COASTAL CAROLINA
Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension - Runway 22 Extension-Alternative 5

FIGURE 4-4 MARCH 2018 TALBERT & BRIGHT, INC.

LEGEND

AIRPORT PROPERTY LINE

PROPOSED AIRSIDE PAVEMENT (RUNWAY, TAXIWAY, APRON)

100 0 200

SCALE IN FEET
1"= 200'

APPROXIMATE GRADING LIMITS

RSA

347' EXTENSION

EMAS

RUNWAY 4-22

TAXIWAY D

RSA

TAXIWAY A

EXTEND RUNWAY 4 347' WITH EMAS TO 600' BEYOND END		
	4	22
EXTENSION	347	-
DISPLACED THRESHOLD	0	0
RSA BEYOND END	1000* (600' EMAS)	600
TORA/TODA	6800	6800
ASDA	6400	6800
LDA	6400	6800

COASTAL CAROLINA
Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension - Runway 4 Extension -Alternative 1

FIGURE 4-5 MARCH 2018 TALBERT & BRIGHT, INC.

LEGEND

AIRPORT PROPERTY LINE

PROPOSED AIRSIDE PAVEMENT (RUNWAY, TAXIWAY, APRON)

100 0 200

SCALE IN FEET
1"= 200'

APPROXIMATE
GRADING LIMITS

RSA

347' EXTENSION

600'

RUNWAY 4-22

TAXIWAY D

RSA

TAXIWAY A

N

EXTEND RUNWAY 4 347' WITH 600' RSA BEYOND END		
	4	22
EXTENSION	347	-
DISPLACED THRESHOLD	0	0
RSA BEYOND END	600	600
TORA/TODA	6800	6800
ASDA	6400	6400
LDA	6400	6400

COASTAL CAROLINA
Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension - Runway 4 Extension -Alternative 2

FIGURE 4-6 MARCH 2018 TALBERT & BRIGHT, INC.

LEGEND

AIRPORT PROPERTY LINE

PROPOSED AIRSIDE PAVEMENT (RUNWAY, TAXIWAY, APRON)

100 0 200

SCALE IN FEET
1"= 200'

APPROXIMATE
GRADING LIMITS

RSA

347' EXTENSION

RUNWAY 4-22

TAXIWAY D

RSA

TAXIWAY A

1000'

EXTEND RUNWAY 4 347' WITH 1000' RSA BEYOND END

	4	22
EXTENSION	347	-
DISPLACED THRESHOLD	0	0
RSA BEYOND END	1000	600
TORA/TODA	6800	6800
ASDA	6400	6800
LDA	6400	6800

COASTAL CAROLINA
Regional Airport

COASTAL CAROLINA REGIONAL AIRPORT
AIRPORT MASTER PLAN - ALTERNATIVES
Runway 4-22 Extension - Runway 4 Extension -Alternative 3

FIGURE 4-7 MARCH 2018 TALBERT & BRIGHT, INC.

Each of the seven Runway 04/22 extension alternatives were evaluated using the five criteria listed in Section 4.0. These criteria were weighted based on their level of influence. The weighting percentages as well as the results of the alternatives comparison matrix are shown in **Figure 4-8**.

Figure 4-8: Runway 04/22 Extension Alternatives Matrix

ALTERNATIVE	OPERATIONAL PERFORMANCE	BEST PLANNING TENETS	ENVIRO. FACTORS	OPERATIONAL IMPACTS	FISCAL FACTORS	TOTAL WEIGHTED SCORE
	WEIGHTING FACTOR					
	40%	25%	20%	5%	10%	
RWY 22 – 1	4.25	2.75	3	2	3	3.4
RWY 22 – 2	4.5	2.5	2	2	3	3.2
RWY 22 – 3	4.75	2.55	3	2	3	3.5
RWY 22 – 4	1	3.5	3	3	4	2.3
RWY 04 – 1	4.75	2.95	1	4	1	3.1
RWY 04 – 2	4.25	3.1	1	4	2	3.1
RWY 04 – 3	4.5	3.25	1	4	1	3.1

Source: Talbert & Bright, Inc. analysis

Based on the scoring in the alternatives analysis matrix, Runway 22 Alternative 3 ranked the highest. This alternative can meet the future runway length requirements while minimizing development costs and impacts on the environment and surrounding community. This alternative would require the realignment of Williams Road and the relocation of the localizer antenna but would provide 6,800-feet of runway length for take-off run from both runway ends. This alternative also allows the Airport the option of a future 200' extension with no additional roadway or localizer impacts. Alternative 1 scored just below Alternative 3 but does not allow the Airport to extend the runway much further in the future without an additional relocation of Williams Road and the localizer. The Runway 4 alternatives are not preferred due in large part to the the environmental impacts associated with the filling and possible realignment of the Brice Creek channel.

4.1.2 Runway 14/32 Alternatives

Runway 14/32 serves as the crosswind runway at EWN and accommodates small and medium size corporate and general aviation aircraft. The runway has a Reference Code of B-II which is not anticipated to change over the 20-year planning period.

The existing runway is 4,000-feet long and 150-feet wide. The runway meets or exceeds all airport design standards except for the taxiway separation standard. The required separation between the runway centerline and taxiway centerline is 240-feet, however; Taxiway B along the east side of the runway is

Appendix C

Traffic Technical Memorandum

(Selected Pages)

Extension and Relocation of SR 1167 (Williams Road)

Coastal Carolina Airport

WBS # 50363

DRAFT Traffic Analysis Technical Memorandum

Prepared for:

North Carolina Department of Transportation

Prepared by:

Three Oaks Engineering, Inc.

324 Blackwell Street, Ste 1200

Durham, NC 27701

NCBELS License #: F-1334

Contents

Tables

Appendices

- A - Figures
  - 1: Project Study Area
  - 2: No-Build Lane Configuration and Traffic Control
  - 3: 2045 Build Alternative 1 Lane Configuration and Traffic Control
  - 4: 2045 Build Alternative 3 Lane Configuration and Traffic Control
  - 5: 2023 Existing Turning Movement Volumes
  - 6: 2045 No-Build Turning Movement Volumes
  - 7: 2045 Build Alternative 1 Turning Movement Volumes
  - 8: 2045 Build Alternative 1 Turning Movement Volumes
- B - EDTE Tool and Traffic Count
- C - Alternative Designs
- D - Rerouted Build Volumes
- E - Analysis Results (Synchro)
  - 2023 Existing Analysis Results
  - 2045 No-Build Analysis Results
  - 2045 Build Alternative 1 Analysis Results
  - 2045 Build Alternative 3 Analysis Results
- F - Analysis Results (SimTraffic)
  - 2023 Existing Analysis Results
  - 2045 No-Build Analysis Results
  - 2045 Build Alternative 1 Analysis Results
  - 2045 Build Alternative 3 Analysis Results
- G - Analysis Results (SIDRA)
  - 2045 Build Alternative 1 Analysis Results
  - 2045 Build Alternative 3 Analysis Results

EXTENSION AND RELOCATION OF SR 1167 (WILLIAMS ROAD) COASTAL CAROLINA AIRPORT

WBS Number # 50363

Craven County

1 PURPOSE OF THE TECHNICAL MEMORANDUM

The purpose of this technical memorandum is to evaluate the traffic operations of the proposed relocation of SR 1167 (Williams Road) due to the extension and relocation of the runway at the Coastal Carolina Regional Airport in Craven County, North Carolina. This evaluation includes the AM and PM peak period analyses for the 2023 Existing, 2045 No-Build, and 2045 Build Alternatives 1 and 3 scenarios, which are detailed later in this memorandum.

1.1 Project Description

The extension and relocation of SR 1167 (Wiliams Road), STIP AV-5891 project area, is located within Craven County in North Carolina. The project area is located within NCDOT Division 2 and the New Bern Metropolitan Planning Organization boundary. The project study area is shown in **Figure 1**. Note that all figures are located in **Appendix A.** The following intersections were analyzed as a part of this study.

2023 Existing and 2045 No-Build:

1. SR 1167 (Williams Road) and SR 1995 (Scott Street)/SR 2094 (Airline Drive)

2045 Build (Alternative 1 and 3):

1. Relocation of SR 1167 (Williams Road) and SR 1995 (Scott Street)
2. Relocation of SR 1167 (Williams Road) and SR 2094 (Airline Drive)

1.1.1 Roadway Descriptions

The classifications listed for each evaluated roadway are based on the Federal Functional Classification System. The following roadways were analyzed in Synchro.

SR 1167 (Williams Road) is a two-lane roadway with a posted speed limit of 45 mph. SR 1167 (Williams Road) is classified as a Minor Arterial. Land use along the facility is a mix of agricultural and residential. Within the project area, the Coastal Carolina Regional Airport is located to the south. This roadway runs east-west with a direct connection to US 70 and serves as the main outlet to US 70 for a landlock area.

SR 1995 (Scott Street) is a two-lane roadway with an assumed speed limit of 35 mph in the study area. Land use along the facility is a mix of agricultural and residential. It is classified as a local facility.

SR 2094 (Airline Drive) a two-lane roadway with a posted speed limit of 25 mph in the study area. It is classified as a local facility. The entrance to the Coastal Carolina Regional Airport is located off SR 2094 (Airline Drive), and it connects to SR 1167 (Williams Road) to the north and Airport Road to the south.

2 ALTERNATIVES ANALYSIS

This study analyzed the 2023 existing conditions as well as the 2045 design year conditions with and without the proposed relocation of SR 1167 (Williams Road) project. Operations for the following scenarios were evaluated as a part of this study.

2.1 2023 Existing

The 2023 Existing scenario analysis provides the baseline conditions for the project and serves as a comparison for the future-year scenarios. The 2023 Existing scenario is comprised of the roadways and intersections as they currently exist at the time of this study based on aerial photography and a site visit conducted on October 18, 2023. The analysis traffic volumes were calculated using NCDOT's Express Design Traffic Evaluation (EDTE) Tool and traffic counts collected on September 7, 2023, to evaluate the existing conditions. Lane configurations and traffic control are shown in Figure 2. Detailed analysis results and a discussion of the results are presented in Section 6. EDTE Tool and traffic count data is provided in Appendix B.

2.2 2045 No-Build

The 2045 No-Build scenario analysis uses the 2023 traffic grown to 2045. The growth rate was determined by looking at the historic growth rate as well as any additional planned or current developments in the area. The 2045 No-Build scenario lane configurations and traffic control are shown in Figure 2. Detailed analysis results and a discussion of the results are presented in Section 7.

2.3 2045 Build

The 2045 Build scenario analysis uses traffic volumes from the 2045 No-Build Scenario rerouted to align with the proposed Alternative 1 and 3 designs. The designs for Alternatives 1 and 3 were provided by Parrish and Partners and are included in Appendix C. The alternative designs propose that the intersection of SR 1167 (Williams Road) and SR 1995 (Scott Street)/SR 2094 (Airline Drive) be relocated in order to allow for a runway extension at the Coastal Carolina Regional Airport.

Alternative 1, shown in Figure 3, proposes to relocate the intersection of SR 1167 (Williams Road) and SR 1995 (Scott Street) to the northwest. This intersection will function as a stop-controlled intersection, while the SR 1167 (Williams Road) and SR 2094 (Airline Drive) intersection will be converted to a three-leg roundabout. SR 1995 (Scott Street) will be realigned to intersect SR 1167 (Williams Road) northwest of its current location.

Alternative 3, shown in Figure 4, proposes to relocate the intersection of SR 1167 (Williams Road) and SR 1995 (Scott Street) to the north. The SR 1167 (Williams Road) and SR 2094 (Airline Drive) intersection will be realigned. Both intersections will be converted to three-leg roundabouts.

The 2045 Build Alternative 1 and Alternative 3 lane configuration and traffic control are shown in Figure 3 and Figure 4, respectively. Detailed analysis results and a discussion of the results are presented in Section 8.

3 METHODOLOGY

Intersection capacity analyses were performed for the 2023 Existing, 2045 No-Build, and the 2045 Build Alternatives 1 and 3 scenarios using Synchro and SimTraffic version 11. SimTraffic analysis results are based on the average of ten simulation runs. Additionally, SIDRA was used to supplement the Synchro analysis for the 2045 Build Alternatives 1 and 3 at the roundabout locations.

All analyses were based on NCDOT's Congestion Management Capacity Analysis Guidelines (March 2022) unless otherwise specified.

4 MEASURES OF EFFECTIVENESS

Measures of effectiveness (MOEs) are system-wide benchmarks which are used to help assess the existing and future conditions and whether the Build scenarios improved various operational aspects within the study area. It should be noted that Highway Capacity Manual 6th Edition procedures were used to determine all Synchro MOEs. The following MOEs were collected for the AM and PM peak periods (for all SimTraffic output, the average of ten runs was used):

- Yielding movement level of service and average delay (seconds/vehicle) (Synchro)
- Roundabout level of service and average delay (seconds/vehicle) (Synchro/SIDRA)
- 95% percentile queue length (feet) by lane group (Synchro/SIDRA)
- Maximum queue length (feet) by lane group (SimTraffic)

5 TRAFFIC VOLUME DEVELOPMENT

5.1 2023 Existing Volumes

The 2023 Existing scenario traffic volumes were calculated using the EDTE Tool and traffic counts taken from a count collected on September 7, 2023. EDTE Tool and traffic count data is provided in **Appendix B**. The 2023 Existing scenario turning movement volumes can be found in **Figure 5**.

5.2 2045 No-Build Volumes

The 2045 No-Build scenario analysis uses the 2023 traffic volumes but adds on an annual growth rate to estimate 2045 volumes. As previously described, the growth rate was determined by looking at the historic growth rate and the U-5713 US 70 Upgrade to Interstate Standards traffic forecast. We used the EDTE Tool and the previously mentioned data and selected a 2% growth rate for SR 1995 (Scott Street) and SR 2094 (Airline Drive), and a 1% growth rate for SR 167 (Williams Road). The EDTE tool can be found in **Appendix B**. The 2045 No-Build volumes can be found in **Figure 6.**

5.3 2045 Build Volumes

No change to the 2045 No-Build volumes is expected with the construction of the project. Based on this, the 2045 Build peak hour volumes are the same as in the 2045 No-Build scenario. These volumes were rerouted as appropriate to develop the volumes for the Alternative 1 and 3 analysis. These rerouted volumes can be found in **Appendix D**. The 2045 Build volumes for Alternatives 1 and 3 can be found in **Figure 7** and **Figure 8** respectively.

6 2023 EXISTING

The 2023 Existing scenario was modeled to emulate 2023 existing conditions (volumes and laneage). As previously mentioned, the laneage and traffic control used for the 2023 Existing analysis is shown in **Figure 2**.

Table 1 below provides the 2030 Existing scenario level of service, delay, and 95th percentile queuing information from Synchro and maximum queue from the average of ten SimTraffic runs for the SR 1167 (Williams Road) and SR 1995 (Scott Street)/SR 2094 (Airline Drive) intersection. The Synchro analysis results are in Appendix E and SimTraffic analysis results are in Appendix F.

At the intersection of SR 1167 (Williams Road) and SR 1995 (Scott Street)/SR 2094 (Airline Drive), the northbound left-turn lane group operates at LOS E with an approximate projected queue of 70 feet in the PM peak period. All other movements and scenarios operate at a LOS C or better in both the AM and PM peak periods.

Table 1 - 2023 Existing - Synchro and SimTraffic Results

2023 Existing Synchro and SimTraffic Results

HCM 6th Edition

Intersection No.	Intersection	Approach	Lane Group	Delay (sec/veh)		LOS		95th % Queue (ft)* (Synchro)		Max Queue (ft) (SimTraffic)	
				AM	PM	AM	PM	AM	PM	AM	PM
100	Williams Road & Scott Street/Airline Drive	Airline Drive (Northbound)	LT	15.0	41.3	C	E	15.0	72.5	56	68
			R	10.6	10.5	B	B	12.5	12.5	80	91
		Williams Road (Eastbound)	L	8.5	7.9	A	A	0.0	0.0	-	18
			TR	-	-	-	-	-	-	2	17
		Williams Road (Westbound)	L	8.1	8.4	A	A	5.0	12.5	42	60
			TR	-	-	-	-	-	-	-	-
		Scott Street (Southbound)	LTR	13.8	16.3	B	C	2.5	2.5	27	46

** 95th percentile queue (feet) was calculated as 95th percentile queue (veh) x 25 feet*

7 2045 NO-BUILD

The 2045 No-Build scenario was modeled to emulate what the traffic operations are expected to look like in 2045 if this project was not constructed. As previously mentioned, the laneage and traffic control used for the 2045 No-Build analysis is shown in Figure 2.

Table 2 below provides the 2045 No-Build level of service, delay, and 95th percentile queuing information from Synchro and maximum queue from the average of ten SimTraffic runs for the SR 1167 (Williams Road) and SR 1995 (Scott Street)/SR 2094 (Airline Drive). The Synchro analysis results are located in Appendix E and SimTraffic analysis results are located in Appendix F.

As shown in Tables 1 and 2, both 2023 and 2045 No-Build alternatives operate very similarly with comparable delay and level of service values. At the intersection of SR 1167 (Williams Road) and SR 1995 (Scott Street)/SR 2094 (Airline Drive), the northbound shared through-left turn lane group is projected to operate at LOS F with a 95th percentile queue of 310 feet in the PM peak period. It should be noted that, compared to the 2023 Existing scenario, the northbound shared through-left turn delay increases from 41 to 307 seconds per vehicle and 95th percentile queue increases from 73 to 310 feet. All other lane groups operate at a LOS C or better in both the AM and PM peak periods.

Table 2 - 2045 No-Build - Synchro and SimTraffic Results

2045 No-Build Synchro and SimTraffic Results											
HCM 6th Edition											
Intersection No.	Intersection	Approach	Lane Group	Delay (sec/veh)		LOS		95th % Queue (ft)* (Synchro)		Max Queue (ft) (SimTraffic)	
				AM	PM	AM	PM	AM	PM	AM	PM
100	Williams Road & Scott Street/Airline Drive	Airline Drive (Northbound)	LT	20.2	306.8	C	F	32.5	310.0	69	71
			R	11.6	11.5	B	B	22.5	22.5	112	226
		Williams Road (Eastbound)	L	8.5	7.9	A	A	0.0	0.0	10	17
			TR	-	-	-	-	-	-	10	27
		Williams Road (Westbound)	L	8.3	9.1	A	A	7.5	22.5	52	93
			TR	-	-	-	-	-	-	-	15
		Scott Street (Southbound)	LTR	18.2	22.6	C	C	7.5	7.5	33	59

** 95th percentile queue (feet) was calculated as 95th percentile queue (veh) x 25 feet*

8 2045 BUILD

The 2045 Build scenarios were modeled to emulate what the traffic is expected to look like in 2045 when the project is constructed.

Alternative 1 proposes to realign SR 1995 (Scott Street) and SR 1167 (Williams Road) northwest of its current location. This intersection will become a three leg stop-controlled intersection with SR 1995 (Scott Street) being the stop-controlled movement. The SR 1167 (Williams Road) and SR 2094 (Airline Drive) intersection will be converted to a three-leg roundabout.

Alternative 3 proposes to relocate the intersection of SR 1167 (Williams Road) and SR 1995 (Scott Street) to the north as a three-leg roundabout. The SR 1167 (Williams Road) and SR 2094 (Airline Drive) intersection will also be configured as a three-leg roundabout. As previously mentioned, the laneage and traffic control used for the 2045 Build analyses is shown in Figures 3 and 4.

Tables 3 and 4 provide the Synchro and SIDRA level of service and delay information, Synchro 95th percentile queues and SimTraffic maximum queues for the intersections of SR 1167 (Williams Road) and SR 1995 (Scott Street) and SR 1167 (Williams Road) and SR 2094 (Airline Drive) for Alternative 1. Tables 5 and 6 provide the Synchro and SIDRA level of service and delay information, Synchro 95th percentile queues and SimTraffic maximum queues for the intersections of SR 1167 (Williams Road) and SR 1995 (Scott Street) and SR 1167 (Williams Road) and SR 2094 (Airline Drive) for Alternative 3. The Synchro analysis results are located in Appendix E, SimTraffic analysis results are located in Appendix F, and SIDRA results are located in Appendix G.

Based on the Synchro and SIDRA analyses, all approaches for both Alternatives 1 and 3, are expected to operate at a LOS B or better in the AM and PM peak periods.

Table 3 - 2045 Build Alternative 1 - Synchro and SimTraffic Results

2045 Build Alternative 1 Synchro and SimTraffic Results											
HCM 6th Edition											
Intersection No.	Intersection	Approach	Lane Group	Delay (sec/veh)		LOS		95th % Queue (ft)* (Synchro)		Max Queue (ft) (SimTraffic)	
				AM	PM	AM	PM	AM	PM	AM	PM
100	Williams Road & Scott Street	Williams Road (Eastbound)	L	8.9	8.4	A	A	0.0	0.0	22	29
		Scott Street (Southbound)	LR	12.6	14.0	B	B	2.5	2.5	38	48
1000	Airline Drive & Williams Road (Roundabout)	**Overall**		**5.8**	**8.4**	**A**	**A**				
		Williams Road (Westbound)	LR	4.7	9.7	A	A	25	75	49	123
		Airline Drive (Northbound)	TR	6.6	6.8	A	A	25	25	90	85
		Williams Road (Southbound)	LT	5.9	7.9	A	A	25	50	77	79

** 95th percentile queue (feet) was calculated as 95th percentile queue (veh) x 25 feet*

Table 4 - 2045 Build Alternative 1 - SIDRA Results

2045 Build Alternative 1 SIDRA Results									
Site No.	Intersection	Approach	Lane Group	Delay (sec/veh)		LOS		95th % Queue (ft)	
				AM	PM	AM	PM	AM	PM
1	Airline Drive & Williams Road (Roundabout)	**Overall**		**7.2**	**11.5**	**A**	**B**	**67.3**	**188.5**
		Airline Drive (Northbound)	TR	8.1	8.9	A	A	50.8	71.9
		Williams Road (Westbound)	LR	5.6	13.6	A	B	34.5	188.5
		Williams Road (Southbound)	LT	7.3	10.6	A	B	67.3	92.1

Table 5 - 2045 Build Alternative 3 - Synchro and SimTraffic Results

2045 Build Alternative 3 Synchro and SimTraffic Results											
HCM 6th Edition											
Intersection No.	Intersection	Approach	Lane Group	Delay (sec/veh)		LOS		95th % Queue (ft)* (Synchro)		Max Queue (ft) (SimTraffic)	
				AM	PM	AM	PM	AM	PM	AM	PM
100	Williams Road & Scott Street (Roundabout)	**Overall**		**4.9**	**5.8**	**A**	**A**				
		Williams Rd (Eastbound)	LR	5.3	5.3	A	A	25	25	21	8
		Williams Rd (Northbound)	LT	4.2	6.2	A	A	25	50	46	100
		Scott St (Southbound)	TR	3.5	5.1	A	A	0	0	26	36
1000	Airline Drive & Williams Road (Roundabout)	**Overall**		**5.8**	**8.4**	**A**	**A**				
		Williams Rd (Westbound)	LR	4.7	9.7	A	A	25	75	50	113
		Airline Dr (Northbound)	TR	6.6	6.8	A	A	25	25	98	80
		Williams Rd (Southbound)	LT	5.9	7.9	A	A	25	50	66	63

** 95th percentile queue (feet) was calculated as 95th percentile queue (veh) x 25 feet*

Table 6 - 2045 Build Alternative 3 - SIDRA Results

2045 Build Alternative 3 SIDRA Results									
Site No.	Intersection	Approach	Lane Group	Delay (sec/veh)		LOS		95th % Queue (ft)	
				AM	PM	AM	PM	AM	PM
1	Airline Drive & Williams Road (Roundabout)	**Overall**		**7.2**	**11.5**	**A**	**B**	**67.3**	**188.5**
		Airline Dr (Northbound)	TR	8.1	8.9	A	A	50.8	71.9
		Williams Rd (Westbound)	LR	5.6	13.6	A	B	34.5	188.5
		Williams Rd (Southbound)	LT	7.3	10.6	A	B	67.3	92.1
2	Williams Road and Scott Street (Roundabout)	**Overall**		**5.4**	**5.6**	**A**	**A**	**61.1**	**87.8**
		Williams Rd (Northbound)	LT	4.6	5.8	A	A	30.2	87.8
		Scott St (Southbound)	TR	4.2	5.9	A	A	3.0	4.0
		Williams Rd (Eastbound)	LR	5.9	5.4	A	A	61.1	68.1

9 CONCLUSIONS

As previously discussed, both Synchro and SIDRA analyses were performed to evaluate the operations for the project study intersection. A summary of the analysis results is discussed below.

As shown in Table 1, the level of service and delay results for the 2023 Existing conditions indicate that, overall, all intersection lane groups operate at LOS C or better in both peak periods, except the northbound shared through-left turn lane group that operates at LOS E in the PM peak period.

As shown in Table 2, the level of service and delay results for the 2045 No-Build scenario indicate that, overall, all intersection movements operate at LOS C or better in both peak periods, except the northbound left-turn lane group that operates at LOS F in the PM peak period. It should be noted that, compared to the 2023 Existing scenario, the northbound shared through-left turn lane delay increases from 41 to 307 seconds per vehicle and maximum queue increases from 73 to 310 feet. All other lane groups operate at a LOS C or better in the AM and PM peak periods.

As shown in Tables 3 and 4, for Alternative 1, all approaches operate at a LOS B or better. As shown in Tables 5 and 6, for Alternative 3, all approaches operate at a LOS B or better in the AM and PM peak period. Both build alternatives remove the northbound shared through-left turn lane operational issue found in the existing intersection laneage.

In summary, with the proposed laneage, the one failing lane group in the 2045 No-Build scenario improves to LOS A. The remaining lane groups/approaches are expected to operate at LOS B or better in the design year for both Alternatives 1 and 3.

Appendix A
Figures

THREE OAKS ENGINEERING · THREE OAKS ENGINEERING ·

Coastal Carolina Regional Airport

Project Study Area

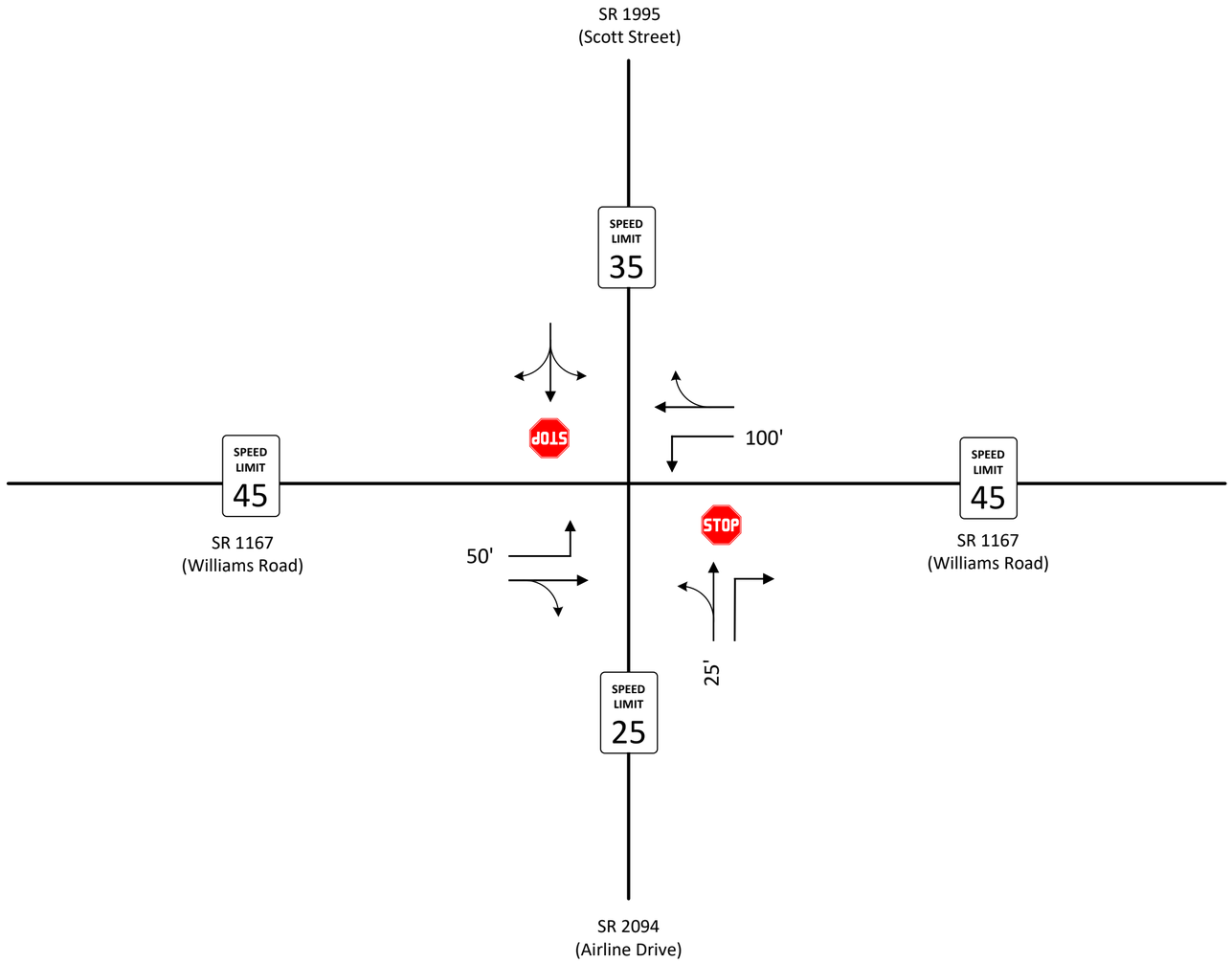
Legend

Study Area

Study Intersection

Figure

1



NOT TO SCALE

N

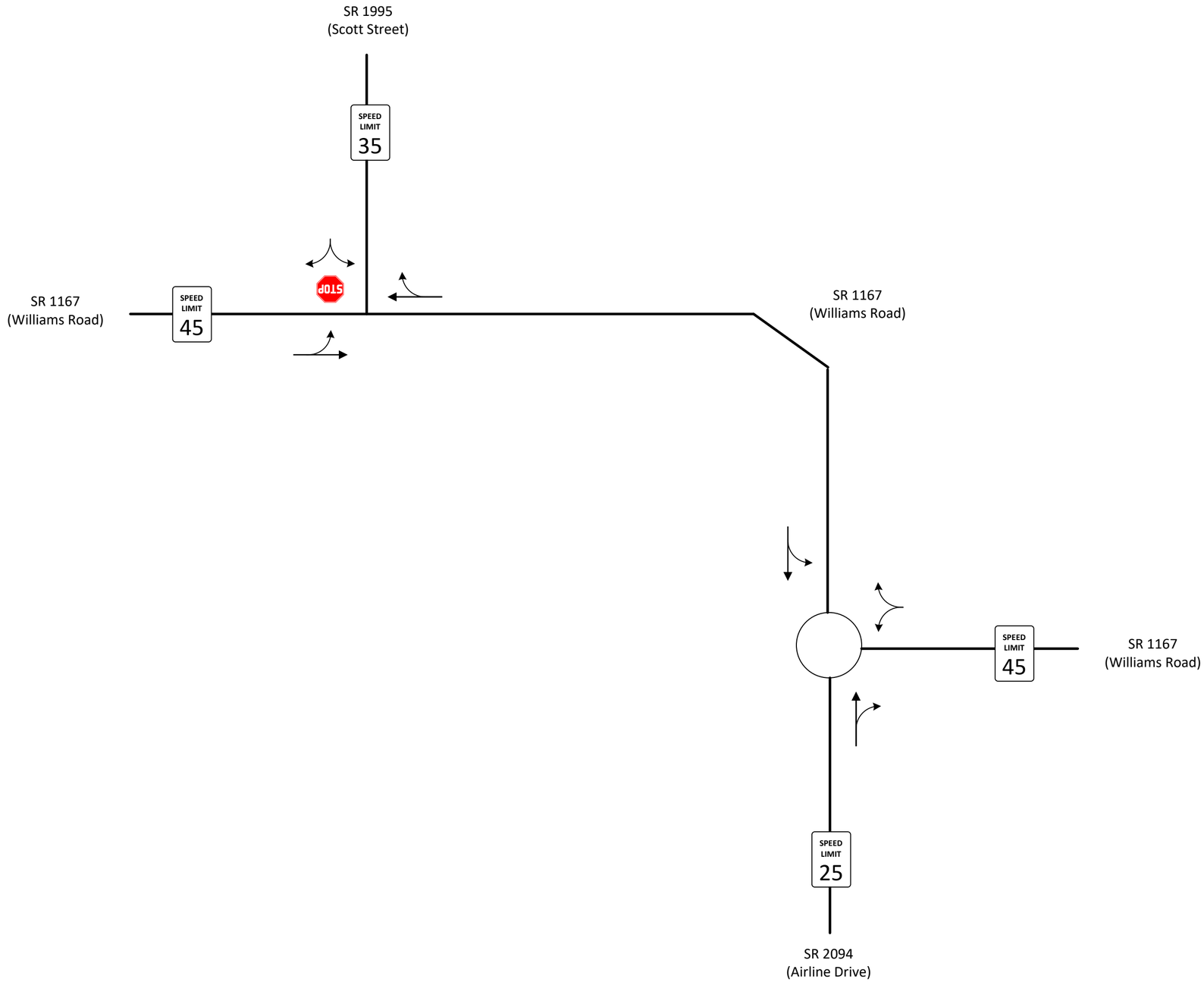
Coastal Carolina Regional Airport

Existing/No-Build Lane Configuration and Traffic Control

Legend

- Existing Roadway
- Existing Lanes
- XX' Storage Distance
- Stop Sign
- Speed Limit

Figure **2**



NOT TO SCALE

N

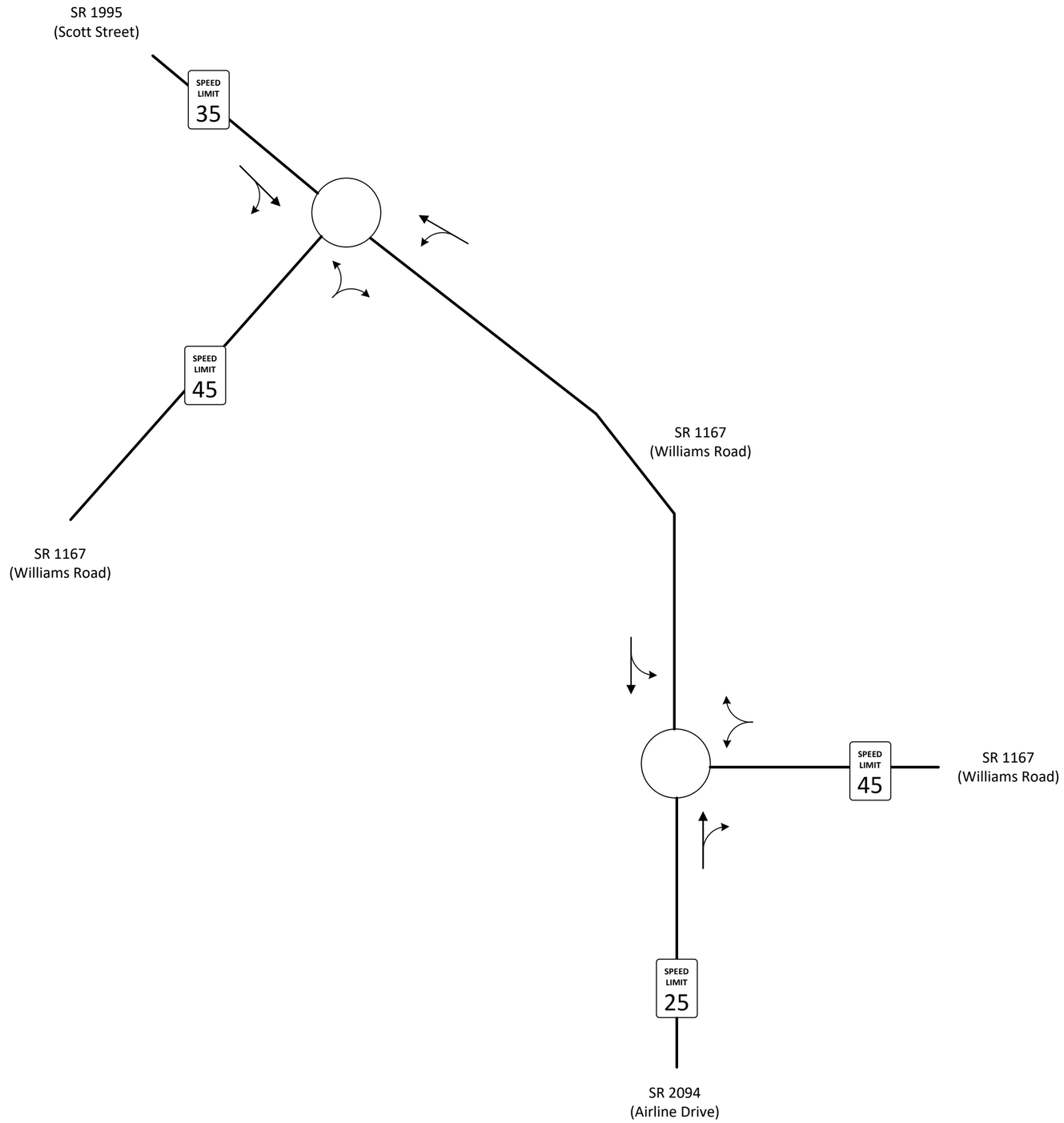
Coastal Carolina Regional Airport

2045 Build Alternative 1 Lane Configuration and Traffic Control

Legend

- Stop Sign
- Speed Limit
- Proposed Roadway
- Proposed Lanes
- XX' Storage Distance
- Roundabout

Figure **3**



NOT TO SCALE

N

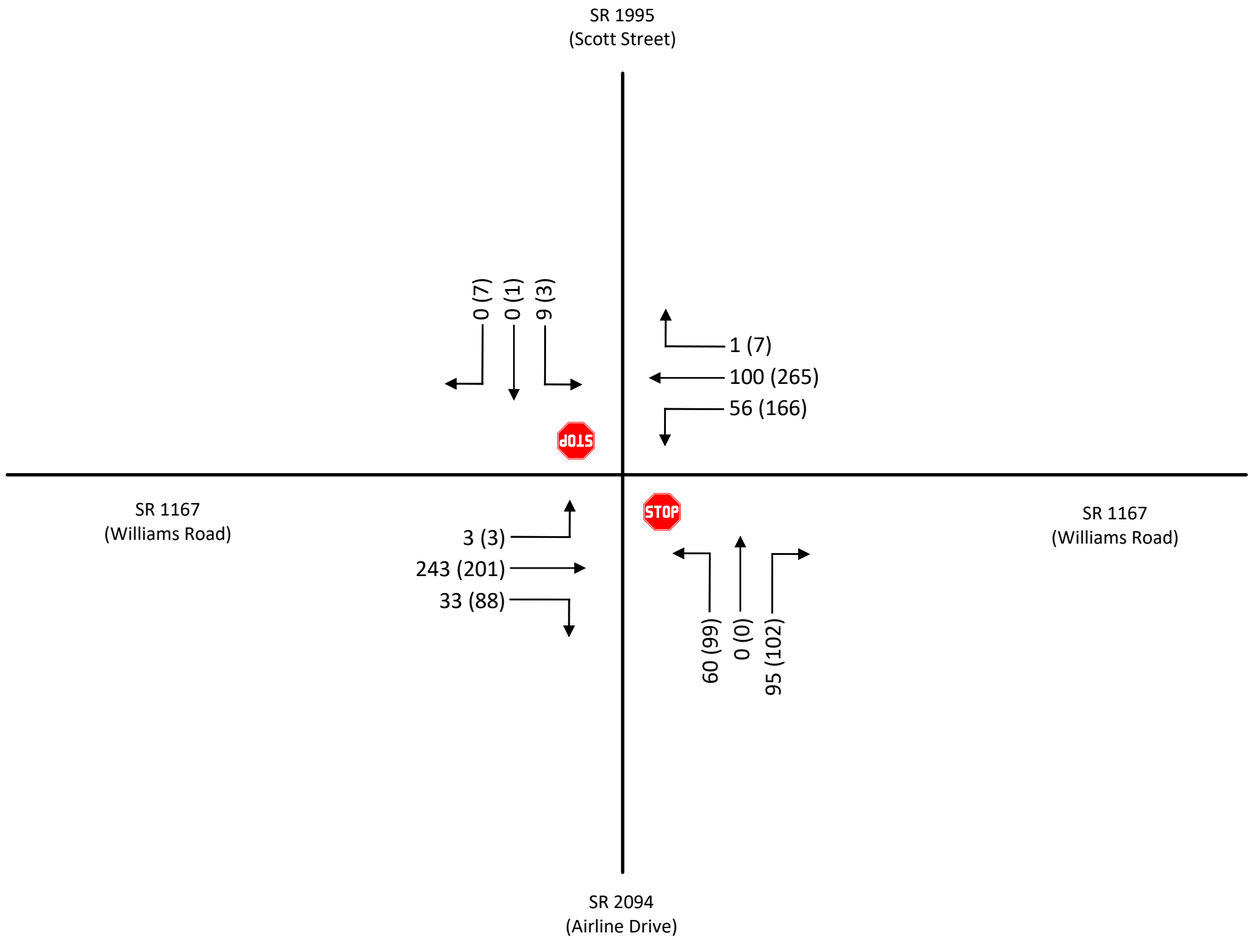
Coastal Carolina Regional Airport

2045 Build Alternative 3 Lane Configuration and Traffic Control

Legend

- Roundabout
- Speed Limit 45
- Proposed Roadway
- Proposed Lanes
- XX' Storage Distance

Figure **4**



NOT TO SCALE

N

*Minimum of 4 vehicles assumed for movements with 0 for anaysis

THREE OAKS ENGINEERING

Coastal Carolina Regional Airport

2023 Existing Turning Movement Volumes

Legend

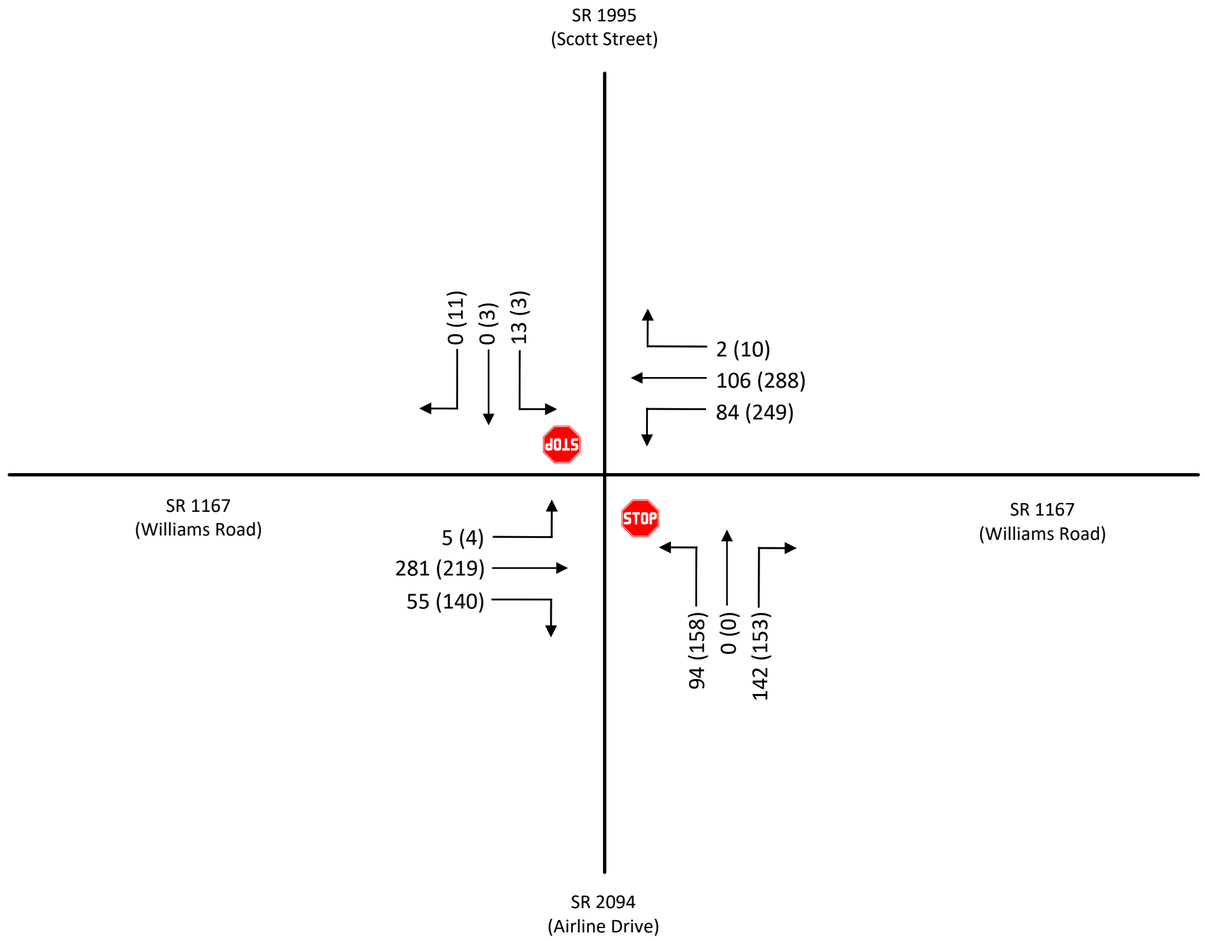
—— Existing Roadway

XX (XX) AM (PM) Volume

STOP Stop Sign

Figure

5



NOT TO SCALE

N

*Minimum of 4 vehicles assumed for movements with 0 for anaysis

THREE OAKS ENGINEERING

Coastal Carolina Regional Airport

2045 No-Build Turning Movement Volumes

Legend

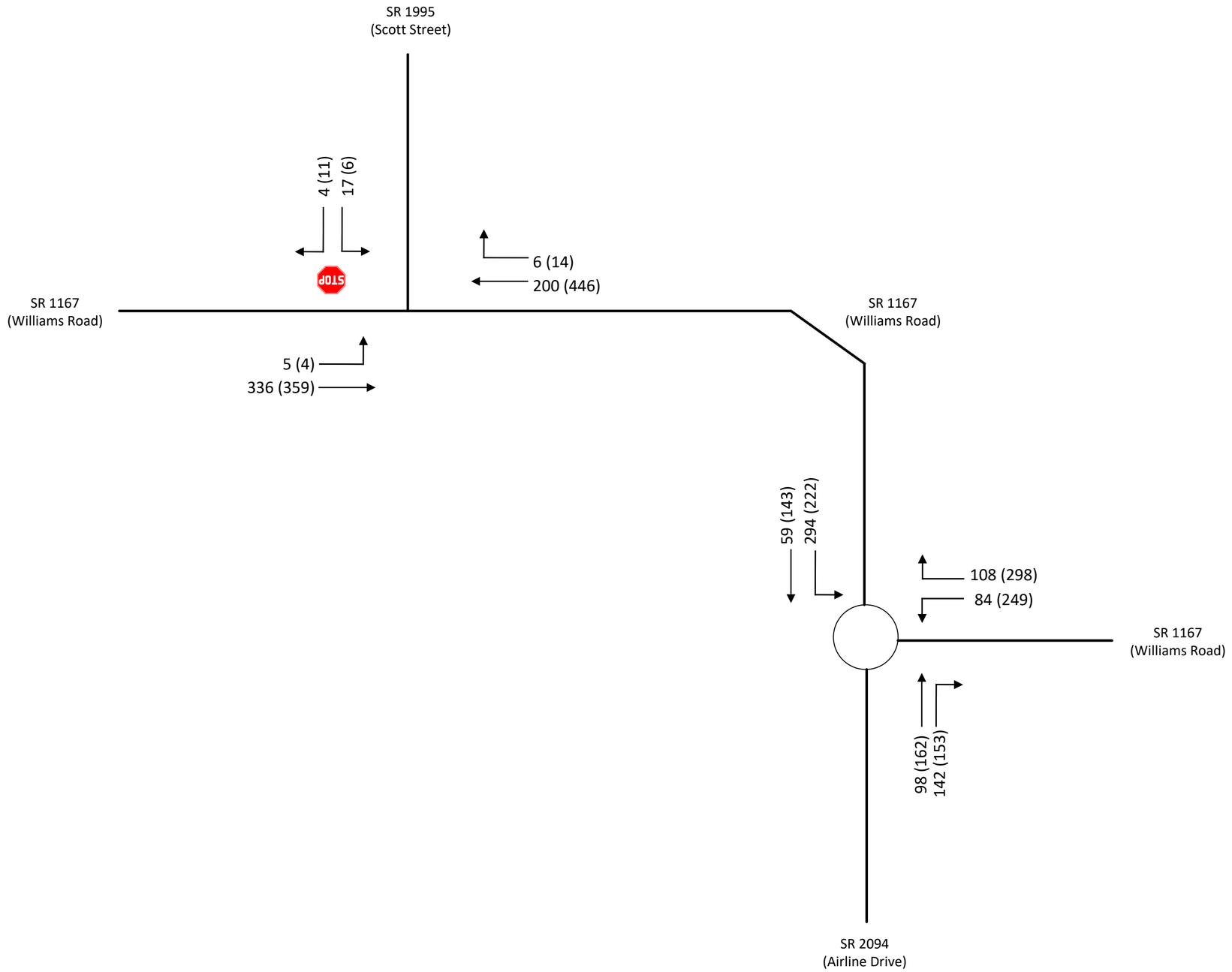
—— Existing Roadway

XX (XX) AM (PM) Volume

STOP Stop Sign

Figure

6



NOT TO SCALE

N

Coastal Carolina Regional Airport

2045 Build Turning Movement Volumes

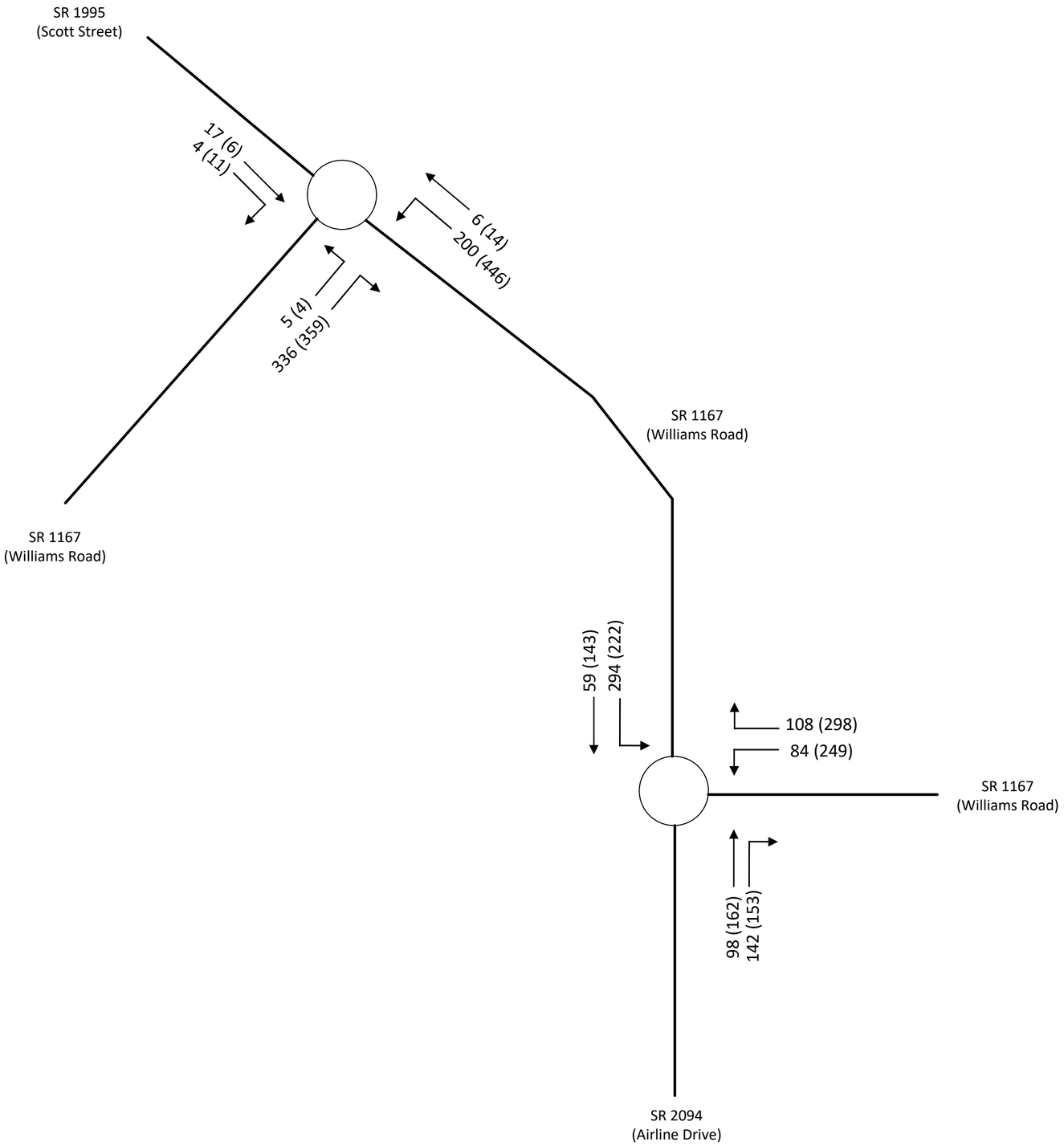
Alternative 1

Legend

- STOP Stop Sign
- Roundabout
- XX (XX) - AM (PM) Volume
- Proposed Roadway

Figure

7



NOT TO SCALE

N

Coastal Carolina Regional Airport

2045 Build Turning Movement Volumes

Alternative 3

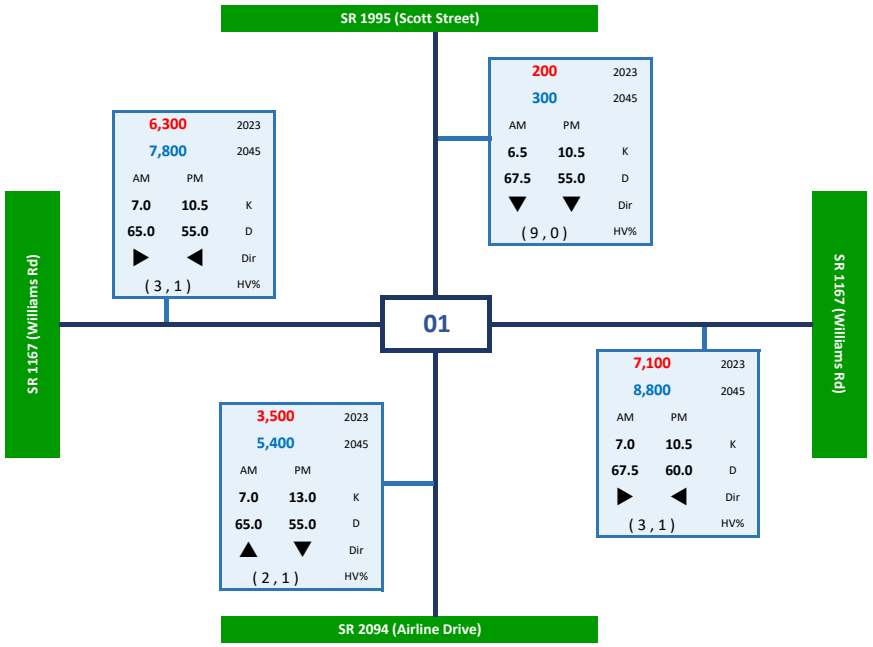
Legend

- Roundabout
- XX (XX) - AM (PM) Volume
- Proposed Roadway

Figure
8

Appendix B
EDTE Tool and Traffic Count

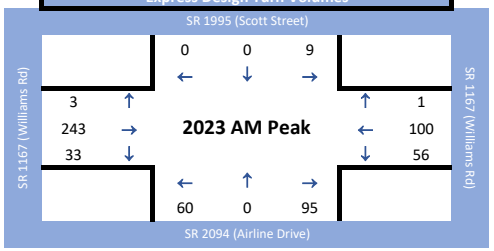
--		01	Craven	SR 1167 (Williams Rd) and SR 1995 (Scott Street)/SR 2094 (Airline Drive)
STIP No.	SPOT ID	Int. No.	County	Intersection Location

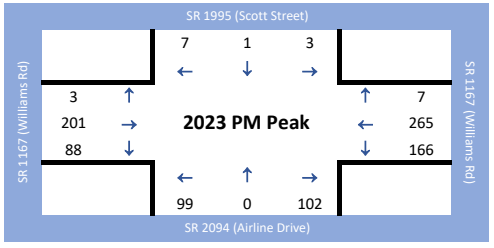


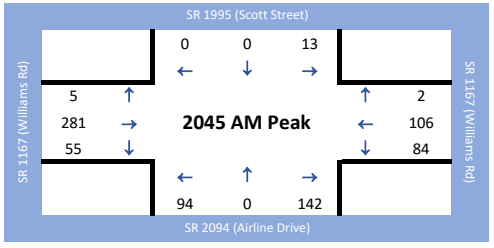
Approach	Road Name	Route Type	No. of Lanes	Facility Type	Functional Class	Capacity	2023 V/C Ratio
North	SR 1995 (Scott Street)	SR	2	Arterial	Local	15,843	0.01
East	SR 1167 (Williams Rd)	SR	2	Arterial	Arterial	15,843	0.45
South	SR 2094 (Airline Drive)	SR	2	Arterial	Local	15,843	0.22
West	SR 1167 (Williams Rd)	SR	2	Arterial	Arterial	15,843	0.40

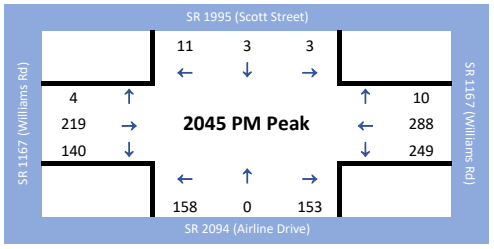
		Express Design Traffic Volumes			Prioritization Traffic Volumes		
Approach	Road Name	2023 AADT	2023-2045 CAGR	2045 AADT	2022 AADT	2022-2032 CAGR	2032 AADT
North	SR 1995 (Scott Street)	200	2.0%	300	200	0.4%	200
East	SR 1167 (Williams Rd)	7,100	1.0%	8,800	7,100	0.6%	7,500
South	SR 2094 (Airline Drive)	3,500	2.0%	5,400	3,500	0.6%	3,700
West	SR 1167 (Williams Rd)	6,300	1.0%	7,800	6,300	0.6%	6,700

Express Design Turn Volumes

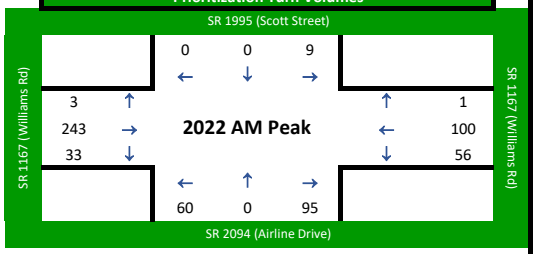


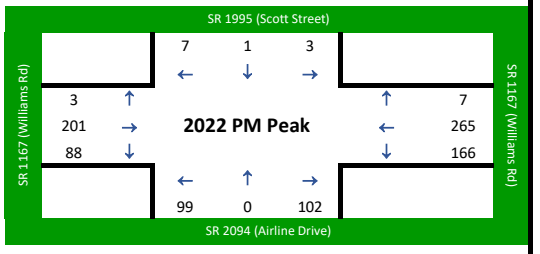


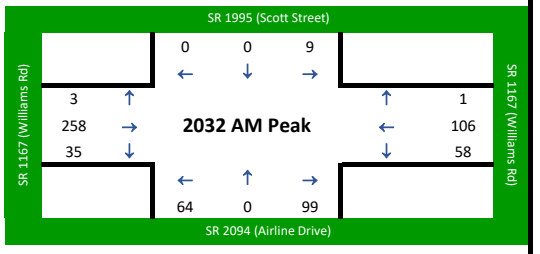


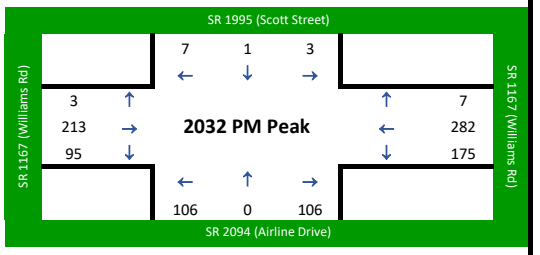


Prioritization Turn Volumes









TRUE DIRECTION

TRAFFIC SERVICES,INC.

236-1 Grandview Dr, Sneads Ferry NC, 28460
919-749-3979 truedirectiontraffic@gmail.com

Count Number: 11989

County: CRAVEN

Division: 02

Location: WILLIAMS RD. AND AIRLINE/SCOTT STREET

Location Type: 4-LEG

Count Type: TURNING MOVEMENT CLASSIFICATION

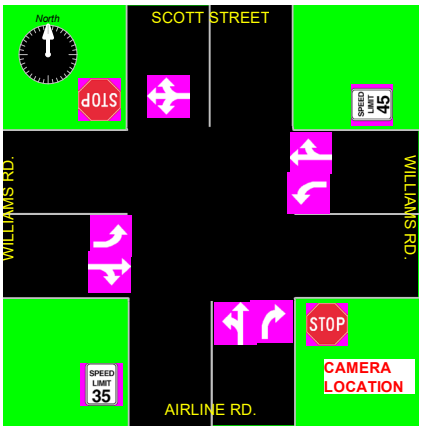
Count Start Date: 09-07-2023

Time: 6:00AM-7:00PM

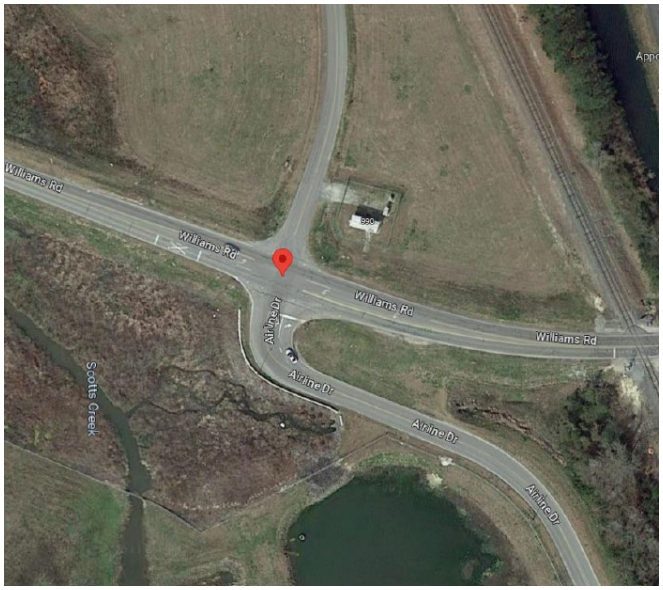
Video Time Used: 6:00AM-7:00PM (09-07)

Total Volume: 7,524

Weather: SUNNY



1. **School in Session: YES**
2. **Pedestrians Observed During Count: YES**
3. **Disabled Pedestrians Present: NO**
4. **Counted By: JENNIFER LEIKEN**
5. **Data Processor: MICHAEL JOHNSON**
6. **Signal Inventory: N/A**
7. **Intersection Controlled By:**
8. **Data Collection Method: Jamar DB-400 Electronic Count Board**
9. **Equipment Operating Properly: Yes**
10. **Area Lighting: NO**
11. **Construction Present: NO**
12. **Traffic Problems Observed: NONE**



LOCATION OF COUNT SITE: 11989

Southbound Approach:

Looking Back Southbound:

Southbound Approach:

Stop Sign Within 300': NO

Traffic Signal Within 300': NO

Railroad Within 300': NO

If Yes Distance:

Westbound Approach:

Looking Back Westbound:

Westbound Approach:

Stop Sign Within 300’: NO

Traffic Signal Within 300’: NO

Railroad Within 300’: YES

If Yes Distance: 370’

Northbound Approach:

Looking Back Northbound:

Northbound Approach:

Stop Sign Within 300': NO

Traffic Signal Within 300': NO

Railroad Within 300': NO

If Yes Distance:

Eastbound Approach:

Looking Back Eastbound:

Eastbound Approach:

Stop Sign Within 300': NO

Traffic Signal Within 300': NO

Railroad Within 300': NO

If Yes Distance:

RAILROAD CROSSING:

Appendix D

Agency Coordination

From: Stevens, Laura
To: Stevens, Laura
Subject: 50363 EWN Runway Ext / Williams Rd Realignment
Date: Saturday, May 3, 2025 2:11:20 PM

From: Thorburn, Allison E <ext-aethorburn@ncdot.gov>
Sent: Wednesday, April 30, 2025 4:25 PM
To: Stevens, Laura <LStevens@parrishandpartners.com>
Subject: FW: [External] RE: 50363 EWN Runway Ext / Williams Rd Realignment

---

From: Steffens, Thomas A CIV USARMY CESAW (USA) <Thomas.A.Steffens@usace.army.mil>
Sent: Monday, April 21, 2025 2:21 PM
To: Thorburn, Allison E <ext-aethorburn@ncdot.gov>
Subject: [External] RE: 50363 EWN Runway Ext / Williams Rd Realignment

The USACE (Corps) in conjunction with the North Carolina Department of Environmental Quality (NCDEQ) has reviewed the Runway 4-22 Improvements/Williams Road Relocation project on multiple occasions. The agencies reviewed the initial proposed build Alternatives on January 24, February 19, April 22, and November 19, 2024, and March 27, 2025. Agencies agreed Alternative 4 (relocate Williams Road with a bridge over Scotts Creek) would be the applicants Preferred Alternative.

Further evaluation of the applicants preferred alternative led the Corps to determine Alternative 4 as the Least Environmentally Damaging Practicable Alternative (LEDPA). Based on the selection of the LEDPA and final designs as they are developed, it is anticipated that the project may qualify for a Department of the Army (DA) permit authorization under Section 404 of the Clean Water Act.

Thomas A Steffens
CESAW-RG-WRDA
US Army Corps of Engineers
2407 West 5Th St.
Washington NC 27889
O(910)-251-4615

U.S. Department
of Transportation
**Federal Aviation
Administration**

Memphis Airports District Office
2600 Thousand Oaks Boulevard, Suite 2250
Memphis, TN 38118
Phone: (901) 322-8180 Fax: (901) 322-8195

April 17, 2024

Mr. Andrew Shorter C.M.
Airport Director
Coastal Carolina Regional Airport
200 Terminal Drive
New Bern, NC 28562

Aviation Activity Forecast
Coastal Carolina Regional Airport (EWN)

Dear Mr. Shorter:

We have reviewed the Aviation Forecast Update for EWN dated March 15, 2024. As a result of our review, we find it consistent with the 2024 Federal Aviation Administration (FAA) Terminal Area Forecast (TAF). Based on this finding, the baseline forecast is approved for use. Should you have any questions, please feel free to contact me at 901-322-8185.

Sincerely,

Jamal Stovall, Team Lead Planner
Memphis Airports District Office

Catawba Indian Nation
Tribal Historic Preservation Office
1536 Tom Steven Road
Rock Hill, South Carolina 29730

Office 803-328-2427

June 13, 2024

Attention: Lopa Naik
Federal Aviation Administration
2600 Thousand Oaks Blvd., Suite 2250
Memphis, TN 38118

Re. THPO #	TCNS #	Project Description
2024-40-10		Proposed Runway 4-22 Improvements at Coastal Carolina Regional Airport, including relocation of Williams Road, Craven Co., NC

Dear Lopa,

The Catawba have no immediate concerns with regard to traditional cultural properties, sacred sites or Native American archaeological sites within the boundaries of the proposed project areas. **However, the Catawba are to be notified if Native American artifacts and / or human remains are located during the ground disturbance phase of this project.**

If you have questions, please contact Caitlin Rogers at 803-328-2427 ext. 226, or e-mail Caitlin.Rogers@catawba.com.

Sincerely,

Caitlin Rogers for

Wenonah G. Haire
Tribal Historic Preservation Officer

From: Kaleigh Pollak
To: Lopa.Naik@faa.gov; Stevens, Laura; mtwilkerson@ncdot.gov
Subject: Re: Fw: EWN Runway 4-22 Improvement Project_ Monacan Nation
Date: Tuesday, June 11, 2024 7:04:50 PM
Attachments: Outlook-0mq03et3.png

Good Evening,

Thank you for contacting us about the proposed project. The Monacan Indian Nation is a federally recognized sovereign tribe, headquartered on Bear Mountain in Amherst County. Citizens of the Nation are descended from Virginia and North Carolina Eastern Siouan cultural and linguistic groups, and our ancestral territory includes Virginia west of the fall line of the rivers, sections of southeastern West Virginia, and portions of northern North Carolina. At this time, the active Monacan consultation areas include:

Virginia: Albemarle, Alleghany, Amherst, Appomattox, Augusta, Bath, Bedford, Bland, Buchanan, Buckingham, Campbell, Carroll, Charlotte, Clarke, Craig, Culpepper, Cumberland, Dickenson, Floyd, Fluvanna, Franklin, Frederick, Giles, Goochland, Grayson, Greene, Halifax, Henry, Highland, Lee, Loudoun, Louisa, Madison, Mecklenburg, Montgomery, Nelson, Orange, Page, Patrick, Pittsylvania, Powhatan, Prince Edward, Pulaski, Rappahannock, Roanoke, Rockbridge, Rockingham, Russell, Scott, Shenandoah, Smyth, Tazewell, Warren, Washington, Wise, and Wythe Counties, and all contiguous cities.

West Virginia: Greenbrier, Mercer, Monroe, Pendleton, Pocahontas, and Summers Counties.

North Carolina: Alamance, Caswell, Granville, Orange, Person, Rockingham, Vance, and Warren Counties.

At this time, the Nation does not wish to actively participate in this consultation project, because:

X	This project is outside our ancestral territory
	The project's impacts are anticipated to be minimal
	The project is more closely related to _____, which should be contacted to participate in consultation
	The tribal office does not currently have the capacity to participate in this project
	Other:

However, the Nation requests to be contacted if:

- Sites associated with native history may be impacted by this project;
- Adverse effects associated with this project are identified;
- Human remains are encountered during this project;
- Unanticipated native cultural remains are encountered during this project;
- Other tribes consulting on this project cease consultation; or
- The project size or scope becomes larger or more potentially destructive than currently described.

Please do not make any assumptions about future consultation interests based on this decision, as priorities and information may change. We request that you send any future consultation communications in electronic form to Consultation@MonacanNation.gov. We appreciate your outreach to the Monacan Indian Nation and look forward to working with you in the future.

Kaleigh Pollak

On Wed, May 22, 2024 at 8:18 AM Tribal Office <TribalOffice@monacannation.gov> wrote:

> Thank you,
>
> Amie Parra
> **Administrative Assistant**
> Monacan Indian Nation
> O: (434) 363-4864
> D: (434) 300-5054
> 111 Highview Drive
> Madison Heights, VA 24572
>
>

From: Naik, Lopa (FAA) <Lopa.Naik@faa.gov>
Sent: Tuesday, May 21, 2024 4:54 PM
To: Consultation <Consultation@monacannation.gov>
Cc: Stevens, Laura <LStevens@parrishandpartners.com>; mtwilkerson@ncdot.gov <mtwilkerson@ncdot.gov>
Subject: EWN Runway 4-22 Improvement Project_ Monacan Nation

Hello,

My name is Lopa Naik. FAA is coordinating an Environmental Assessment effort on behalf of the Coastal Carolina Regional Airport (EWN) and North Carolina Department of Transportation (NCDOT).

The project under consideration is the extension of Runway 4-22 at EWN by approximately 173 feet and extending the 600-foot Runway Safety Area (RSA) beyond the Runway 22 end to the standard 1,000-foot length. The attached letter and figures provide pertinent information regarding the details of the project.

Your interest in this project and your participation are appreciated. If you have any questions or require any additional information, please feel free to contact me.

Lopa Naik, P.E.

Environmental Protection Specialist

FAA, Memphis Airports District Office

2600 Thousand Oaks Blvd, Ste 2250

Memphis, TN 38118-2462

Office Telephone # 901-322-8188

Fax Telephone # 901-322-8195

Email: lopa.naik@faa.gov

Coastal Carolina Regional Airport Runway 4-22 Improvement Program - AGENCY COMMENTS

AGENCY	AGENCY REPRESENTATIVE	EMAIL	SCOPING COMMENT (LOI sent 7/24/2023)
North Carolina Department of Natural and Cultural Resources, State Historic Preservation Office	Ramona Bartos	environmental.review@dncr.nc.gov	We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.
North Carolina DEQ, Division of Coastal Management (DCM)	Cathy Brittingham	Cathy.Brittingham@deq.nc.gov; Stephen.Lane@deq.nc.gov	It appears as though there are Public Trust Areas and Public Trust Shorelines AEC's within the project area at Scotts Creek, and at a UT to Scotts Creek. If a project proposes development in a CAMA AEC, then a CAMA Permit is required. When a CAMA major permit application is received, the CAMA major permit application is circulated to the network of state agencies that comprise North Carolina's Coastal Management Program. The statutes, rules and policies of each of these agencies must be considered during the review of the CAMA major permit application. This process also includes a consistency review by the DCM District Planner to ensure that the project is consistent with all certified CAMA land use plans that are in effect at the time of permit decision. The consideration and incorporation by the applicant of the comments received from all parties into the final project design will help to expedite the CAMA permit application review.
North Carolina DEQ, Division of Water Resources (DWR)	David Wainwright	David.Wainwright@deq.nc.gov	Based on the information provided, the DWR, Central Office does not have any comments at this time.
US EPA Region 4 Wetlands and Stream Regulatory Section	Todd Bowers	Bowers.todd@epa.gov	Please include me as a US EPA Clean Water Section 404 Project Manager (covering North Carolina) as necessary in place of Cynthia Van Der Wiele.
North Carolina Wildlife Resources Commission, Habitat Conservation Program	Travis Wilson	(919) 707- 4057	At this time we do not have any specific concerns related to this project; however, to help facilitate document preparation and the review process our general informational needs are outlined below: 1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with: NC Natural Heritage Program Dept. of Environment & Natural Resources 2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities. 3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (COE). If the COE is not consulted, the person delineating wetlands should be identified and criteria listed. 4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included. 5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands). 6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses. 7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation. 8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access. 9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.
Craven County Emergency Services	Stanley Kite	skite@cravencountync.gov	The Primary concerns I would have for this project is to be certain that alternate road access to the community is established before the closure of Williams Road. This has a high impact to 911 responses.

U.S. Environmental Protection Agency Region 4	Amanetta Somerville	somerville.amanetta@epa.gov	Based on the EPA's preliminary review of the proposed project, the following comments are provided for your consideration in preparing the draft environmental document: 1.Stormwater Management: The EPA encourages implementing best management practices during and after construction to minimize stormwater impacts on the streams to the east of the project area. A stormwater permit may be needed as the proposed project will disturb a considerable amount of soil. Additionally, the EPA recommends that the environmental document include a detailed explanation of stormwater management to accommodate major storm events and changes in rainfall. Please explain the potential impacts on the water quality of the waterbodies near the project area and identify and discuss linear stormwater best management practices that will be implemented to prevent runoff from construction activities. 2.Environmental Justice: Executive Order 12898 Federal Actions to Address Environmental justice in Minority Populations and Low-Income Populations, February 11, 1994 was supplemented by Executive Order 14096, Revitalizing Our Nation's Commitment to Environmental Justice for All, April 26, 2023 which directs federal agencies, as appropriate and consistent with applicable law: to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns. The EPA encourages using EJScreen (https://www.epa.gov/ejscreen), EPA's nationally consistent environmental justice screening and mapping tool, when conducting environmental justice scoping efforts….. EJScreen is a helpful first step in highlighting locations that may be candidates for further analysis 3.Sustainability: Efforts should be made to divert recyclable materials such as concrete, steel, and asphalt away from landfills and repurpose the material instead. The EPA requests that future communication regarding NEPA documents be electronic from a downloadable web link or email. We also request that you continue to mail at least one hard copy of the Draft and/or Final NEPA documents to the address below. Amanetta Somerville U.S. Environmental Protection Agency Region 4 61 Forsyth Street SW. Atlanta, Ga 30303 National Environmental Policy Act Section Strategic Programs Office
US Forest Service, National Forests in North Carolina	Allyson Conner	allyson.conner@usda.gov	Thank you for sending this information out. I have looked it over and I see that the airport abuts USFS lands on the Croatan National Forest on the SW end but all of the work that is being proposed is on the NE end. At this time, we do not have any information to provide as none of the work will be on USFS lands. If all work stays on the NE corner, we do not need to be consulted beyond this email response.

North Carolina Department of Natural and Cultural Resources

State Historic Preservation Office

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

August 15, 2023

Laura Stevens
Parrish and Partners
220 Horizon Drive
Suite 100
Raleigh, NC 27615

LStevens@parrishandpartners.com

Re: Improve Runway 4-22, Coastal Carolina Regional Airport, New Bern, Craven County, ER 23-1686

Dear Ms. Stevens:

Thank you for your email of July 24, 2023, concerning the above-referenced undertaking. We have reviewed the submittal and offer the following comments.

We have conducted a review of the project and are aware of no historic resources which would be affected by the project. Therefore, we have no comment on the project as proposed.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@dncr.nc.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,

Renee Gledhill-Earley

for Ramona Bartos, Deputy
State Historic Preservation Officer

ROY COOPER
Governor
ELIZABETH S. BISER
Secretary
BRAXTON DAVIS
Director

NORTH CAROLINA
Environmental Quality

August 28, 2023

Laura Stevens, AICP
Environmental Manager
Parrish & Partners
LStevens@parrishandpartners.com

RE: Start of Study Notification, NCDOT Division 2 and FAA, proposed Runway 4-22 Improvements at Coastal Carolina Regional Airport, including relocation of Williams Road, Craven County, NC (WBS 50363).

Dear Ms. Stevens:

The N.C. Division of Coastal Management (DCM) appreciates the opportunity to comment on the Start of Study notification received by email on July 24, 2023, including the attached maps, for the above referenced project.

DCM has reviewed the information that was provided, and a DCM Field Representative has visited the proposed project location, to determine if there are any potential Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC's) within the project area. It appears as though there are Public Trust Areas and Public Trust Shorelines AEC's within the project area at Scotts Creek, and at a UT to Scotts Creek.

If a project proposes development in a CAMA AEC, then a CAMA Permit is required. When a CAMA major permit application is received, the CAMA major permit application is circulated to the network of state agencies that comprise North Carolina's Coastal Management Program. The statutes, rules and policies of each of these agencies must be considered during the review of the CAMA major permit application. This process also includes a consistency review by the DCM District Planner to ensure that the project is consistent with all certified CAMA land use plans that are in effect at the time of permit decision. The consideration and incorporation by the applicant of the comments received from all parties into the final project design will help to expedite the CAMA permit application review.

During the permitting process, DCM may have additional comments on the project's environmental impacts and may place conditions on a permit decision to minimize environmental impacts. The information provided in this letter shall not preclude DCM from requesting additional information throughout the permitting process and following normal procedures.

Please note that the N.C. Division of Marine Fisheries (DMF) and the N.C. Wildlife Resources Commission (WRC) are commenting agencies for CAMA permits. Please coordinate with DMF and WRC to incorporate fisheries classifications into the project design, as well as any corresponding in-water work moratoriums.

Please note it appears as though there are historic properties and/or archaeological resources within and/or near the project area. Please be aware that the N.C. State Historic Preservation Office (SHPO) is a commenting agency for CAMA permits. Therefore, NCDOT is encouraged to coordinate with SHPO to address and resolve any comments and concerns.

Thank you for your consideration of the North Carolina Coastal Management Program. Please contact me or Stephen Lane, DCM Field Representative for Transportation Projects, if you have any questions or concerns. I can be reached at (919) 707-9149 or via e-mail at Cathy.Brittingham@deq.nc.gov. Stephen can be reached at (252) 515-5408 or via e-mail at Stephen.Lane@deq.nc.gov.

Sincerely,

Cathy Brittingham

Cathy Brittingham
Transportation Project Coordinator
N.C. Division of Coastal Management

Cc: Allison McAuliffe, NCDOT
Lopa Naik, FAA
Stephen Lane, DCM
Tom Steffens, USACE
Garcy Ward, DWR
Jay Johnson, NCDOT

From:	Wainwright, David
To:	Stevens, Laura
Subject:	RE: [External] Start of Study Notification - Coastal Carolina Regional Airport
Date:	Wednesday, August 9, 2023 3:11:31 PM
Attachments:	image001.png

Laura,

Thank you for reaching out to the Division of Water Resources, Central Office for comment on this project. Based on the information provided, the DWR, Central Office does not have any comments at this time.

Thanks,
David Wainwright

David Wainwright (*he/him*)
SEPA Coordinator, Division of Water Resources
North Carolina Department of Environmental Quality
Office: (919) 707-9045
PLEASE NOTE NEW EMAIL ADDRESS AS OF MAY 16, 2023:
David.Wainwright@deq.nc.gov

From: Stevens, Laura <LStevens@parrishandpartners.com>
Sent: Monday, July 24, 2023 10:41 AM
To: ron.lucas@dot.gov; gary.jordan@fws.gov; henry.m.wicker.jr@usace.army.mil; thomas.a.steffens@usace.army.mil; Brittingham, Cathy <cathy.brittingham@deq.nc.gov>; vanderwiele.cynthia@epa.gov; Fritz.Rohde@noaa.gov; Allyson.Conner@usda.gov; Ward, Garcy <garcy.ward@deq.nc.gov>; Wilson, Travis W. <travis.wilson@ncwildlife.org>; Wanucha, Dave <dave.wanucha@deq.nc.gov>; Strong, Brian <brian.strong@ncparks.gov>; Gledhill-earley, Renee <renee.gledhill-earley@dncr.nc.gov>; Brittingham, Cathy <cathy.brittingham@deq.nc.gov>; Wainwright, David <david.wainwright@deq.nc.gov>; Locklear, Susan P <Susan.Locklear@deq.nc.gov>; Kite, Stanley <skite@cravencountync.gov>; toni.floyd@craven.k12.nc.us; maxeyk@nbampo.org; laughlins@newbernnc.gov; Dwayne Alligood <Dwayne.Alligood@cravencountync.gov>; cstrawn@cravencountync.gov
Cc: McAuliffe, Allison E <ext-aemcauliffe@ncdot.gov>; Naik, Lopa (FAA) <Lopa.Naik@faa.gov>;

Rogers, Chad <CRogers@parrishandpartners.com>; Andrew G. Shorter <ashorter@flyewn.com>
Subject: [External] Start of Study Notification - Coastal Carolina Regional Airport

Dear Agency Representative:

SUBJECT: Notification of start of activities by NCDOT Division 2 and FAA for proposed Runway 4-22 Improvements at Coastal Carolina Regional Airport, including relocation of Williams Road, Craven County, NC (WBS 50363)

Through an NCDOT Eastern Divisions on-call contract, Parrish and Partners of NC, PLLC (Parrish & Partners) has initiated environmental and engineering studies for proposed improvements at Coastal Carolina Regional Airport (EWN), within the study area identified in Figures 1 and 2 (attached). In addition to providing commercial air service to eastern NC, EWN is used by charter, general aviation, air cargo, and military aircraft operators. The proposed project would enhance airport safety, regain usable runway length, and improve the operational capability of Runway 4-22 at EWN by extending the 6,453-foot runway by approximately 220 feet and extending the 600-foot Runway Safety Area (RSA) beyond the Runway 22 end to the standard 1,000-foot length. The proposed improvements would require relocation of Williams Road and additional culverting of Scotts Creek.

Under this contract, an Environmental Assessment will be prepared in accordance with the *National Environmental Policy Act,* FAA Orders 1050.1F and 5050.4B, and other applicable federal and state regulations. We are requesting resource information from your office as it relates to the proposed action along with identification of any areas of special concern. All relevant information that your office can provide will be useful in accurately assessing the existing airport environment, developing alternatives, and evaluating potential impacts.

Thank you in advance for your assistance. If you have any questions, please contact me at (803) 978-7611 or by email at lstevens@parrishandpartners.com.

Thank you,
Laura Stevens

Laura Stevens, AICP
Environmental Manager
Parrish & Partners
803.978.7611 (direct)
LStevens@parrishandpartners.com

From:	Bowers, Todd
To:	Stevens, Laura
Subject:	FW: [External] Start of Study Notification - Coastal Carolina Regional Airport
Date:	Tuesday, August 8, 2023 10:41:10 AM
Attachments:	image002.png image003.png

Hi Laura,

My colleague was inadvertently sent the email message below concerning the proposed improvements at Coastal Carolina Regional Airport. Please include me as a US EPA Clean Water Section 404 Project Manager (covering North Carolina) as necessary in place of Cynthia Van Der Wiele.

Thank you,
Todd Bowers

Todd Allen Bowers

US EPA Region 4 Wetlands and Stream Regulatory Section
Water Division Quality Assurance Coordinator
61 Forsyth St. SW
Atlanta, GA 30303
919.523.2637 cell/telework
404.562.9225 office
Bowers.todd@epa.gov

"Do unto those downstream as you would have those upstream do unto you."
— Wendell Berry

From: Van Der Wiele, Cynthia <VanDerWiele.Cynthia@epa.gov>
Sent: Tuesday, August 8, 2023 10:02 AM
To: Bowers, Todd <bowers.todd@epa.gov>
Subject: FW: [External] Start of Study Notification - Coastal Carolina Regional Airport

I think you need to be the one on the list; not me.

Please note that due to continued telework, it is best to get in touch with me through the cell phone number below.

North Carolina Wildlife Resources Commission

Cameron Ingram, Executive Director

MEMORANDUM

TO: Laura Stevens, AICP
Environmental Manager
Parrish & Partners

FROM: Travis Wilson, Highway Project Coordinator
Habitat Conservation Program

DATE: August 17, 2023

SUBJECT: Response to the start of study notification regarding fish and wildlife concerns for proposed runway and road realignment at Coastal Carolina Regional Airport (EWN) in Craven County, North Carolina.

This memorandum responds to a request for our concerns regarding impacts on fish and wildlife resources resulting from the subject project. Biologists on the staff of the N. C. Wildlife Resources Commission (NCWRC) have reviewed the proposed improvements. Our comments are provided in accordance with certain provisions of the National Environmental Policy Act (42 U.S.C. 4332(2)(c)) and the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661-667d).

At this time we do not have any specific concerns related to this project; however, to help facilitate document preparation and the review process our general informational needs are outlined below:

1. Description of fishery and wildlife resources within the project area, including a listing of federally or state designated threatened, endangered, or special concern species. Potential borrow areas to be used for project construction should be included in the inventories. A listing of designated plant species can be developed through consultation with:

NC Natural Heritage Program
Dept. of Environment & Natural Resources

Mailing Address: Habitat Conservation • 1721 Mail Service Center • Raleigh, NC 27699-1721
Telephone: (919) 707-0220 • **Fax:** (919) 707-0028

1601 Mail Service Center
Raleigh, NC 27699-1601.
WWW.ncnhp.org

and,

NCDA Plant Conservation Program

P. O. Box 27647
Raleigh, N. C. 27611
(919) 733-3610

2. Description of any streams or wetlands affected by the project. The need for channelizing or relocating portions of streams crossed and the extent of such activities.

3. Cover type maps showing wetland acreages impacted by the project. Wetland acreages should include all project-related areas that may undergo hydrologic change as a result of ditching, other drainage, or filling for project construction. Wetland identification may be accomplished through coordination with the U. S. Army Corps of Engineers (COE). If the COE is not consulted, the person delineating wetlands should be identified and criteria listed.

4. Cover type maps showing acreages of upland wildlife habitat impacted by the proposed project. Potential borrow sites should be included.

5. The extent to which the project will result in loss, degradation, or fragmentation of wildlife habitat (wetlands or uplands).

6. Mitigation for avoiding, minimizing or compensating for direct and indirect degradation in habitat quality as well as quantitative losses.

7. A cumulative impact assessment section which analyzes the environmental effects of highway construction and quantifies the contribution of this individual project to environmental degradation.

8. A discussion of the probable impacts on natural resources which will result from secondary development facilitated by the improved road access.

9. If construction of this facility is to be coordinated with other state, municipal, or private development projects, a description of these projects should be included in the environmental document, and all project sponsors should be identified.

Thank you for the opportunity to provide input in the early planning stages for this project. If we can further assist your office, please contact me at (919) 707- 4057.

From:	Stanley Kite
To:	Stevens, Laura; ron.lucas@dot.gov; gary.jordan@fws.gov; henry.m.wicker.jr@usace.army.mil; thomas.a.steffens@usace.army.mil; cathy.brittingham@ncdenr.gov; vanderwiele.cynthia@epa.gov; Fritz.Rohde@noaa.gov; Allyson.Conner@usda.gov; Garcy.Ward@ncdenr.gov; Travis.Wilson@ncwildlife.org; Wanucha, Dave; Strong, Brian; Gledhill-earley, Renee; cathy.brittingham@ncdenr.gov; David.Wainwright@ncdenr.gov; Susan.Locklear@ncdenr.gov; toni.floyd@craven.k12.nc.us; maxeyk@nbampo.org; laughlins@newbernnc.gov; Dwayne Alligood; Chad Strawn
Cc:	McAuliffe, Allison E; Naik, Lopa (FAA); Rogers, Chad; Andrew G. Shorter
Subject:	Re: [External] Start of Study Notification - Coastal Carolina Regional Airport
Date:	Tuesday, August 8, 2023 9:56:29 AM

The Primary concerns I would have for this project is to be certain that alternate road access to the community is established before the closure of Williams Road. This has a high impact to 911 responses.

Stanley Kite, Director
Craven County Emergency Services
406 Craven Street, New Bern, N.C.
Office 252-636-6608
Cell 252-671-7482

From: Stevens, Laura <LStevens@parrishandpartners.com>
Sent: Monday, July 24, 2023 10:40 AM
To: ron.lucas@dot.gov <ron.lucas@dot.gov>; gary.jordan@fws.gov <gary.jordan@fws.gov>; henry.m.wicker.jr@usace.army.mil <henry.m.wicker.jr@usace.army.mil>; thomas.a.steffens@usace.army.mil <thomas.a.steffens@usace.army.mil>; cathy.brittingham@ncdenr.gov <cathy.brittingham@ncdenr.gov>; vanderwiele.cynthia@epa.gov <vanderwiele.cynthia@epa.gov>; Fritz.Rohde@noaa.gov <Fritz.Rohde@noaa.gov>; Allyson.Conner@usda.gov <Allyson.Conner@usda.gov>; Garcy.Ward@ncdenr.gov <Garcy.Ward@ncdenr.gov>; Travis.Wilson@ncwildlife.org <Travis.Wilson@ncwildlife.org>; Wanucha, Dave <Dave.wanucha@ncdenr.gov>; Strong, Brian <brian.strong@ncparks.gov>; Gledhill-earley, Renee <Renee.Gledhill-earley@ncdcr.gov>; cathy.brittingham@ncdenr.gov <cathy.brittingham@ncdenr.gov>; David.Wainwright@ncdenr.gov <David.Wainwright@ncdenr.gov>; Susan.Locklear@ncdenr.gov <Susan.Locklear@ncdenr.gov>; Stanley Kite <skite@cravencountync.gov>; toni.floyd@craven.k12.nc.us <toni.floyd@craven.k12.nc.us>; maxeyk@nbampo.org <maxeyk@nbampo.org>; laughlins@newbernnc.gov <laughlins@newbernnc.gov>; Dwayne Alligood <Dwayne.Alligood@cravencountync.gov>; Chad Strawn <cstrawn@cravencountync.gov>
Cc: McAuliffe, Allison E <ext-aemcauliffe@ncdot.gov>; Naik, Lopa (FAA) <Lopa.Naik@faa.gov>; Rogers, Chad <CRogers@parrishandpartners.com>; Andrew G. Shorter <ashorter@flyewn.com>
Subject: [External] Start of Study Notification - Coastal Carolina Regional Airport

Dear Agency Representative:

SUBJECT: Notification of start of activities by NCDOT Division 2 and FAA for proposed Runway 4-22

Improvements at Coastal Carolina Regional Airport, including relocation of Williams Road, Craven County, NC (WBS 50363)

Through an NCDOT Eastern Divisions on-call contract, Parrish and Partners of NC, PLLC (Parrish & Partners) has initiated environmental and engineering studies for proposed improvements at Coastal Carolina Regional Airport (EWN), within the study area identified in Figures 1 and 2 (attached). In addition to providing commercial air service to eastern NC, EWN is used by charter, general aviation, air cargo, and military aircraft operators. The proposed project would enhance airport safety, regain usable runway length, and improve the operational capability of Runway 4-22 at EWN by extending the 6,453-foot runway by approximately 220 feet and extending the 600-foot Runway Safety Area (RSA) beyond the Runway 22 end to the standard 1,000-foot length. The proposed improvements would require relocation of Williams Road and additional culverting of Scotts Creek.

Under this contract, an Environmental Assessment will be prepared in accordance with the *National Environmental Policy Act,* FAA Orders 1050.1F and 5050.4B, and other applicable federal and state regulations. We are requesting resource information from your office as it relates to the proposed action along with identification of any areas of special concern. All relevant information that your office can provide will be useful in accurately assessing the existing airport environment, developing alternatives, and evaluating potential impacts.

Thank you in advance for your assistance. If you have any questions, please contact me at (803) 978-7611 or by email at lstevens@parrishandpartners.com.

Thank you,
Laura Stevens

Laura Stevens, AICP
Environmental Manager
Parrish & Partners
803.978.7611 (direct)
LStevens@parrishandpartners.com

From:	Somerville, Amanetta
To:	Stevens, Laura
Cc:	Kajumba, Ntale
Subject:	Re: EPA Comments on the Scoping for the construction of the extension of Runway 4-22 at the Coastal Carolina Regional Airport (EWN) in Craven County, North Carolina
Date:	Thursday, August 24, 2023 5:39:17 PM

Dear Ms. Stevens,

The U.S. Environmental Protection Agency (EPA) has reviewed the scoping document dated July 24, 2023, regarding the construction of the extension of Runway 4-22 at the Coastal Carolina Regional Airport (EWN) in Craven County, North Carolina. According to the scoping letter, NCDOT and FAA have proposed actions to extend existing runway 4-22 at EWN by extending the existing runway by approximately 220 feet and extending the 600-foot Runway Safety Area beyond the Runway 4-22 end to the standard 1,000-foot length. The proposed improvements would require Williams Road relocation and additional Scotts Creek culverting.

Based on the EPA's preliminary review of the proposed project, the following comments are provided for your consideration in preparing the draft environmental document:

1. Stormwater Management: The EPA encourages implementing best management practices during and after construction to minimize stormwater impacts on the streams to the east of the project area. A stormwater permit may be needed as the proposed project will disturb a considerable amount of soil. Additionally, the EPA recommends that the environmental document include a detailed explanation of stormwater management to accommodate major storm events and changes in rainfall. Please explain the potential impacts on the water quality of the waterbodies near the project area and identify and discuss linear stormwater best management practices that will be implemented to prevent runoff from construction activities.

2. Environmental Justice: Executive Order 12898 F*ederal Actions to Address Environmental justice in Minority Populations and Low-Income Populations*, February 11, 1994 was supplemented by Executive Order 14096, *Revitalizing Our Nation's Commitment to Environmental Justice for All*, April 26, 2023 which directs federal agencies, as appropriate and consistent with applicable law: to identify, analyze, and address disproportionate and adverse human health and environmental effects (including risks) and hazards of Federal activities, including those related to climate change and cumulative impacts of environmental and other burdens on communities with environmental justice concerns. The EPA encourages using EJScreen (https://www.epa.gov/ejscreen), EPA's nationally consistent environmental justice screening and mapping tool, when conducting environmental justice scoping efforts. The tool provides information on environmental and socioeconomic indicators, pollution sources, health disparities, critical service gaps, and climate change data. The tool can help identify potential community vulnerabilities by calculating EJ Indexes and displaying environmental and socioeconomic information. EJScreen is a helpful first step in highlighting locations that may be candidates for further analysis.

The EPA also recommends meaningfully engaging communities with EJ concerns early and throughout the NEPA process. To address potential barriers to meaningful engagement, consider using adaptive and innovative approaches to both public outreach and participation to meet the needs of the local community and businesses (i.e., engage local community leaders and groups in project planning, share project information at community events/meetings, virtual meetings, etc.). The Environmental Justice Interagency Working Group's Promising Practices for EJ Methodologies in NEPA Reviews (Promising Practices), dated March 2016, provides guiding principles agencies can consider (Promising Practices FOR EJ Methodologies IN NEPA Reviews).

3. Sustainability: Efforts should be made to divert recyclable materials such as concrete, steel, and asphalt away from landfills and repurpose the material instead.

The EPA requests that future communication regarding NEPA documents be electronic from a downloadable web link or email. We also request that you continue to mail at least one hard copy of the Draft and/or Final NEPA documents to the address below. The EPA appreciates the opportunity to review and comment on the proposed improvements at the Coastal Carolina Regional Airport. If you have any questions, please contact us via email or the information below.

Amanetta Somerville

U.S. Environmental Protection Agency Region 4
61 Forsyth Street SW. Atlanta, Ga 30303
National Environmental Policy Act Section
Strategic Programs Office
Phone: 404-562-9025
E-mail: somerville.amanetta@epa.gov

From: Stevens, Laura <LStevens@parrishandpartners.com>
Sent: Monday, July 24, 2023 10:41 AM
To: ron.lucas@dot.gov; gary.jordan@fws.gov; henry.m.wicker.jr@usace.army.mil; thomas.a.steffens@usace.army.mil; cathy.brittingham@ncdenr.gov; Van Der Wiele, Cynthia <VanDerWiele.Cynthia@epa.gov>; fritz.rohde <Fritz.rohde@noaa.gov>; Allyson.Conner@usda.gov; Garcy.Ward@ncdenr.gov; Travis.Wilson@ncwildlife.org; Wanucha, Dave <Dave.wanucha@ncdenr.gov>; Strong, Brian <brian.strong@ncparks.gov>; Gledhill-earley, Renee <Renee.Gledhill-earley@ncdcr.gov>; cathy.brittingham@ncdenr.gov; David.Wainwright@ncdenr.gov; Susan.Locklear@ncdenr.gov; skite@cravencountync.gov; toni.floyd@craven.k12.nc.us; maxeyk@nbampo.org; laughlins@newbernnc.gov; Dwayne Alligood <Dwayne.Alligood@cravencountync.gov>; cstrawn@cravencountync.gov
Cc: McAuliffe, Allison E <ext-aemcauliffe@ncdot.gov>; Naik, Lopa (FAA) <Lopa.Naik@faa.gov>; Rogers, Chad <CRogers@parrishandpartners.com>; Andrew G. Shorter <ashorter@flyewn.com>
Subject: Start of Study Notification - Coastal Carolina Regional Airport

Dear Agency Representative:

RE: Notification of start of activities by NCDOT Division 2 and FAA for proposed Runway 4-22 Improvements at Coastal Carolina Regional Airport, including relocation of Williams Road, Craven County, NC (WBS 50363)

Through an NCDOT Eastern Divisions on-call contract, Parrish and Partners of NC, PLLC (Parrish & Partners) has initiated environmental and engineering studies for proposed improvements at Coastal Carolina Regional Airport (EWN), within the study area identified in Figures 1 and 2 (attached). In addition to providing commercial air service to eastern NC, EWN is used by charter, general aviation, air cargo, and military aircraft operators. The proposed project would enhance airport safety, regain usable runway length, and improve the operational capability of Runway 4-22 at EWN by extending the 6,453-foot runway by approximately 220 feet and extending the 600-foot Runway Safety Area (RSA) beyond the Runway 22 end to the standard 1,000-foot length. The proposed improvements would require relocation of Williams Road and additional culverting of Scotts Creek.

Under this contract, an Environmental Assessment will be prepared in accordance with the *National Environmental Policy Act,* FAA Orders 1050.1F and 5050.4B, and other applicable federal and state regulations. We are requesting resource information from your office as it relates to the proposed action along with identification of any areas of special concern. All relevant information that your office can provide will be useful in accurately assessing the existing airport environment, developing alternatives, and evaluating potential impacts.

Thank you in advance for your assistance. If you have any questions, please contact me at (803) 978-7611 or by email at lstevens@parrishandpartners.com.

Thank you,
Laura Stevens

Laura Stevens, AICP
Environmental Manager
Parrish & Partners
803.978.7611 (direct)
LStevens@parrishandpartners.com

From: Conner, Allyson - FS, NC
To: Stevens, Laura
Subject: RE: [External Email]Start of Study Notification - Coastal Carolina Regional Airport
Date: Monday, July 24, 2023 7:34:47 PM
Attachments: image001.png
image002.png
image003.png
image004.png

Hi Laura,

Thank you for sending this information out. I have looked it over and I see that the airport abuts USFS lands on the Croatan National Forest on the SW end but all of the work that is being proposed is on the NE end. At this time, we do not have any information to provide as none of the work will be on USFS lands.

However, if any project work does end up occurring on the SW end, we will need to be consulted. Please keep that in mind if anything changes from this original proposal. If all work stays on the NE corner, we do not need to be consulted beyond this email response.

Allyson Conner
Land Management Planner
NCDOT Liaison

Forest Service
National Forests in North Carolina

c: 828.545.5941
allyson.conner@usda.gov

160A Zillicoa Street
Asheville, NC 28801
www.fs.fed.us

Caring for the land and serving people

From: Stevens, Laura <LStevens@parrishandpartners.com>
Sent: Monday, July 24, 2023 10:41 AM
To: ron.lucas@dot.gov; gary.jordan@fws.gov; henry.m.wicker.jr@usace.army.mil; thomas.a.steffens@usace.army.mil; cathy.brittingham@ncdenr.gov; vanderwiele.cynthia@epa.gov; Fritz.Rohde@noaa.gov; Conner, Allyson - FS, NC <Allyson.Conner@usda.gov>; Garcy.Ward@ncdenr.gov; Travis.Wilson@ncwildlife.org; Wanucha, Dave <Dave.wanucha@ncdenr.gov>; Strong, Brian <brian.strong@ncparks.gov>; Gledhill-earley, Renee <Renee.Gledhill-earley@ncdcr.gov>; cathy.brittingham@ncdenr.gov; David.Wainwright@ncdenr.gov; Susan.Locklear@ncdenr.gov; skite@cravencountync.gov; toni.floyd@craven.k12.nc.us; maxeyk@nbampo.org; laughlins@newbernnc.gov; Dwayne Alligood <Dwayne.Alligood@cravencountync.gov>; cstrawn@cravencountync.gov
Cc: McAuliffe, Allison E <ext-aemcauliffe@ncdot.gov>; Naik, Lopa (FAA) <Lopa.Naik@faa.gov>; Rogers, Chad <CRogers@parrishandpartners.com>; Andrew G. Shorter <ashorter@flyewn.com>

Subject: [External Email]Start of Study Notification - Coastal Carolina Regional Airport

Dear Agency Representative:

SUBJECT: Notification of start of activities by NCDOT Division 2 and FAA for proposed Runway 4-22 Improvements at Coastal Carolina Regional Airport, including relocation of Williams Road, Craven County, NC (WBS 50363)

Through an NCDOT Eastern Divisions on-call contract, Parrish and Partners of NC, PLLC (Parrish & Partners) has initiated environmental and engineering studies for proposed improvements at Coastal Carolina Regional Airport (EWN), within the study area identified in Figures 1 and 2 (attached). In addition to providing commercial air service to eastern NC, EWN is used by charter, general aviation, air cargo, and military aircraft operators. The proposed project would enhance airport safety, regain usable runway length, and improve the operational capability of Runway 4-22 at EWN by extending the 6,453-foot runway by approximately 220 feet and extending the 600-foot Runway Safety Area (RSA) beyond the Runway 22 end to the standard 1,000-foot length. The proposed improvements would require relocation of Williams Road and additional culverting of Scotts Creek.

Under this contract, an Environmental Assessment will be prepared in accordance with the *National Environmental Policy Act,* FAA Orders 1050.1F and 5050.4B, and other applicable federal and state regulations. We are requesting resource information from your office as it relates to the proposed action along with identification of any areas of special concern. All relevant information that your office can provide will be useful in accurately assessing the existing airport environment, developing alternatives, and evaluating potential impacts.

Thank you in advance for your assistance. If you have any questions, please contact me at (803) 978-7611 or by email at lstevens@parrishandpartners.com.

Thank you,
Laura Stevens

Laura Stevens, AICP
Environmental Manager
Parrish & Partners
803.978.7611 (direct)
LStevens@parrishandpartners.com

Appendix E

Air Quality and Climate Report

Draft

PROPOSED RUNWAY IMPROVEMENTS AT COASTAL CAROLINA REGIONAL AIRPORT

Construction Air Quality and Climate Analysis

Prepared for
Parrish & Partners

July 2024

ESA

Draft

PROPOSED RUNWAY IMPROVEMENTS AT COASTAL CAROLINA REGIONAL AIRPORT

Construction Air Quality and Climate Analysis

Prepared for
Parrish & Partners

July 2024

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
esassoc.com

ESA

Bend	Orlando	San Jose
Camarillo	Pasadena	Santa Monica
Delray Beach	Petaluma	Sarasota
Destin	Portland	Seattle
Irvine	Sacramento	Tampa
Los Angeles	San Diego	
Oakland	San Francisco	

180979.01

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

Construction Air Quality and Climate Analysis

List of Tables

Appendices

PROPOSED RUNWAY IMPROVEMENTS AT COASTAL CAROLINA REGIONAL AIRPORT

Construction Air Quality and Climate Analysis

1. Introduction and Overview

This report provides an analysis and overview of air quality and climate modeling and resulting emission inventories for construction activities related to the Environmental Assessment (EA) for proposed improvements to Runway 4/22 (the Proposed Action). Runway improvements include a 173-foot runway extension, 200-foot blast pad, 400-foot extension of the RSA, and relocated airport perimeter road. Relocation of the localizer and realignment of Williams Road would also be required. The EA Runway Extension Alternative would enhance safety for airport users and the surrounding community by providing the full 1,000-foot RSA and would maximize the usable length of Runway 4/22 given site constraints with a 173-foot extension.

A detailed discussion of the model inputs used to develop air quality and GHG emissions calculations is included in the following sections.

2. Regulatory Setting

This section provides information pertaining to regulatory conditions in the project area, which includes Craven County, North Carolina. For example, this includes information on attainment/nonattainment designations, and applicable regulatory criteria and/or thresholds that will be applied to the results of the air quality assessment.

2.1 Federal

The United States Environmental Protection Agency (EPA) has established National Ambient Air Quality Standards (NAAQS) for the following criteria pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3) and its precursors such as oxides of nitrogen (NO_x) and volatile organic compounds (VOCs), particulate matter (PM_{10} and $PM_{2.5}$), and sulfur dioxide (SO_2). In complying with the National Environmental Policy Act (NEPA), the FAA must determine if a Federal Action would cause criteria pollutant concentrations to exceed the NAAQS.

FAA will evaluate if the emissions caused by the Proposed Action Alternative would result in a significant impact under the FAA's NEPA threshold (discussed in **Section 3.2** below).

Exhibit 4-1 of the FAA's 1050.1F Desk Reference provides the FAA's significance thresholds for air quality:

> *"The action would cause pollutant concentrations to exceed one or more of the [NAAQS], as established by the [EPA] under the [CAA], for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations."*

2.2 Greenhouse Gases

The climate change regulatory setting – international, federal, state, and local – is complex and rapidly evolving. The EPA is responsible for implementing federal policies to address GHGs. The federal government administers a wide array of public-private partnerships to reduce the quantity of GHGs generated in the United States. The EPA has published endangerment findings for greenhouse gases indicating that emissions of GHGs from new motor vehicles and certain aircraft contribute to air pollution that endangers the public health and welfare under the CAA, Section 202(a).

The Council on Environmental Quality (CEQ) affirmed that NEPA and its implementing regulations (40 CFR 1500 et. seq.) apply to GHGs and climate change. GHGs include carbon dioxide (CO_2), methane (CH_4), NO_2, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), sulfur hexafluoride (SF_6) and nitrogen trifluoride (NF_3). Despite this guidance, there are no significance thresholds associated with GHGs. CEQ instructs Federal agencies to disclose a project's contribution to GHGs in a study area although the need to disclose such emissions for General Conformity purposes does not exist.

The FAA has not established a significance threshold for climate and GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions. Given the small percentage of emissions that aviation projects contribute to global GHG emissions, a NEPA analysis is not required to attempt to link specific climate impacts to the Proposed Action or alternative(s).

2.3 Attainment Status

The Airport is located in Craven County, North Carolina. The NAAQS attainment status for Craven County is presented in **Table 2-1.**

TABLE 2-1
CRAVEN COUNTY NAAQS ATTAINMENT STATUS

Criteria Air Pollutant	NAAQS Attainment Status
Ozone (1-Hour)	Unclassified/Attainment
Ozone (8-Hour)	Unclassified/Attainment
CO (1-Hour and 8-Hour)	Unclassified/Attainment
NO_2 (1-Hour)	Unclassified/Attainment
NO_2 (Annual)	Unclassified/Attainment
SO_2 (1-Hour and 3-Hour)	Unclassified/Attainment
PM_{10} (24-Hour)	Unclassified/Attainment
$PM_{2.5}$ (24-Hour and Annual)	Unclassified/Attainment
Lead	Unclassified/Attainment
SOURCE: EPA, 2024.	

3. Air Quality

3.1 Thresholds of Significance

Exhibit 4-1 of FAA Order 1050.1F 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 EPA under the CAA, for any of the time periods analyzed, or to increase the frequency or severity of any such existing violations." Since Craven County is designated as in attainment for all NAAQS criteria pollutants, the General Conformity Rule (Section 176(c)(1) of the CAA) *de minimis* thresholds are not applicable to the Proposed Action.

3.2 Analysis

3.2.1 Methodology

Construction activity levels were estimated using the Airport Cooperative Research Program's (ACRP) Airport Construction Emissions Inventory Tool for the Proposed Project components. The ACRP tool was originally designed to provide emission estimates for common airport projects, without the need to run a highly detailed and costly analysis. However, since its original publication, the tool's emission factors have become outdated and are no longer recommended for use by the FAA. As such, the tool's sole purpose for this project was to serve as an aid in developing equipment activity level. The current version of the EPA MOtor Vehicle Emissions Simulator (MOVES) was used to establish the appropriate emission factors.

To conservatively estimate construction emissions, all construction was assumed to occur in one year.

3.2.2 Emission Factors

Emission factors for the modeling of criteria air pollutants used the EPA's MOVES model. This model is widely recognized for its ability to estimate emissions for mobile sources at the national, county, and project level for criteria air pollutants, GHGs, and air toxics. The MOVES 4.0 model allows us to input specific parameters related to a project including geolocation (state, county), project years, fleet and equipment profile, vehicle miles traveled (VMT), speed range, temperature, and fuel type, among others. By doing so, detailed emission factors can be generated that reflect the unique characteristics of a project.

In the MOVES model, emissions from non-road and on-road sources are computed independently. Non-road emissions come from equipment and vehicles that do not operate on highways. This primarily includes various forms of construction equipment (e.g., excavators, compactors, forklifts). The MOVES model estimates non-road emission factors based on the specific county, equipment population, scrappage, usage, and activity data, as well as local meteorological conditions.

On-road emissions are produced by vehicles that operate on various types of roadways. The MOVES model is capable of estimating emissions from a wide range of on-road vehicles, including passenger cars, trucks, dump trucks, concrete trucks, and motorcycles. Calculation of emission factors for on-road equipment requires that, at a minimum, the user provide information on the years of interest, location, types of equipment, and roadway types. In default scale mode, the model uses these inputs to estimate emissions of criteria air pollutants, GHGs, and any selected air toxics.

In both cases, the MOVES model provides a robust tool for estimating emission factors, but the results are dependent on the accuracy and completeness of the input data including the anticipated activity profile. Therefore, it's crucial to ensure that the inputs reflect the most accurate and current data available.

Post-processing the MOVES outputs provides emission factors in units of grams per hour for all non-road equipment and on-road idling and in units of grams per mile for all on-road activity. Activity data by equipment types associated with each project component are then applied to these emission factors to estimate project emissions.

3.2.3 Activity Data

Activity data that were used with the modeled EPA MOVES outputs was calculated using the ACRP tool, based on construction data provided by Parrish & Partners. Construction activity emissions are calculated based on the MOVES run output and the project specific anticipated activity profile assumptions that are provided for both on-road and non-road equipment. Non-road activity data includes details such as the year of construction, type of construction activity, equipment used, activity size in square feet (SF), activity rate, and hours of activity. Equipment type provided by the ACRP tool were matched with the closest equipment list from the MOVES model. **Appendix A** shows the total anticipated activity hours associated with each equipment type. The activity, in hours, for each equipment type and phase of work is calculated as the product of the project-specific development area and the activity rate (hours per square foot) estimated by the ACRP tool.

Additionally, information is included on on-road equipment categorized by year, equipment type, on-road activity, fuel type, number of non-road equipment, and round trip distance in miles.

Construction equipment were categorized into specific equipment types used in MOVES for construction related activities. The equipment types in the MOVES model that were assessed for this project as well as are provided in **Appendix A**. For on-road equipment, all employee travel was assumed to be in passenger cars and all other on-road activity were classified as either single use short-haul trucks or combination short-haul trucks. All on-road vehicle miles traveled were assumed to occur at 55 miles per hour.

3.3 Construction Emissions Inventory

Table 3-4 summarizes construction emissions as a result of the Proposed Action Alternative.

TABLE 3-1
PROPOSED ACTION ALTERNATIVE CONSTRUCTION EMISSIONS INVENTORY (TONS)

Project Component	CO	VOC	NO_X	SO_2	PM_{10}	$PM_{2.5}$
Perimeter Road	2.06	0.11	2.77	0.004	0.05	0.05
Runway Blast Pad	1.94	0.09	2.38	0.003	0.04	0.04
Runway Extension	1.69	0.08	2.27	0.003	0.04	0.03
Runway Safety Area	1.13	0.09	3.03	0.004	0.06	0.05
Taxiway Connectors	1.76	0.10	2.64	0.003	0.05	0.05
Williams Road	2.18	0.11	2.75	0.004	0.05	0.05
Total	**10.76**	**0.58**	**15.85**	**0.02**	**0.28**	**0.27**

SOURCE: Environmental Science Associates, 2024.

NOTES:
CO = carbon monoxide
NO_x = oxides of nitrogen
PM_{10} = particulate matter less than or equal to 10 microns in diameter
$PM_{2.5}$ = particulate matter less than or equal to 2.5 microns in diameter
SO_X = oxides of sulfur
VOC = volatile organic compound
Totals may not add due to rounding

3.4 Mitigation, Avoidance, or Minimization Measures

Craven County is designated as in attainment for all NAAQS criteria pollutants. Therefore, the General Conformity Rule is not applicable to the Proposed Action Alternative and no mitigation measures are required.

Of note, even if General Conformity were applicable, the annual emissions across all pollutants do not approach the *de minimis* levels used for areas operating in maintenance. As such, the air quality impacts from the Proposed Action Alternative do not result in a significant impact.

4. Climate

FAA Order 1050.1F determines the need for and establishes the extent of the GHG assessment required for airport-related actions and projects. GHG emissions inventories were prepared for construction activities related to the Proposed Action Alternative. The analysis of GHG emissions generally follows the same methodology and modeling tools as the air quality criteria pollutant emissions analysis as discussed in **Section 3.2**.

As with the criteria air pollutants, MOVES was used to determine the emission factors of CO_2, CH_4, and N_2O. One notable exception is N_2O for nonroad equipment. The EPA MOVES model does not estimate emission factors for N_2O when analyzing nonroad equipment. Instead, these

emissions were estimated by following guidance described for nonroad equipment in the EPA's port emission inventory guidance.[1]

GHGs include CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6. Increasing concentrations of GHGs in the atmosphere affect global climate. Anthropogenic (i.e., man-made) sources of GHG emissions are primarily associated with the combustion of fossil fuels.

Mass emissions of GHGs are accounted for by converting emissions of specific pollutants to CO_2e emissions by applying the proper global warming potential (GWP) value for each specific pollutant. GWP represents the amount of heat captured by a mass of a specific GHG compared to a similar mass of CO_2. These GWP ratios are provided by the Intergovernmental Panel on Climate Change (IPCC) in its Fifth Assessment Report (AR5).[2] By applying the GWP ratios, project-related CO_2e emissions can be tabulated in metric tons per year. Typically, the GWP ratio corresponding to the warming potential of CO_2 over a 100-year period is used as a baseline.

4.1 Thresholds of Significance

The FAA has not established a significance threshold for climate and GHG emissions, nor has the FAA identified specific factors to consider in making a significance determination for GHG emissions. The CEQ has noted that "it is not currently useful for the NEPA analysis to attempt to link specific climatological changes, or the environmental impacts thereof, to the particular project or emissions, as such direct linkage is difficult to isolate and to understand." [3]

[1] Ports Emissions Inventory Guidance: Methodologies for Estimating Port-Related and Goods Movement Mobile Source Emissions, U.S. Environmental Protection Agency, April 2022. https://nepis.epa.gov/Exe/ZyPDF.cgi?Dockey=P1014J1S.pdf

[2] IPCC, 2014: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, p.87.

[3] Federal Aviation Administration, 1050.1F Desk Reference, https://www.faa.gov/about/office_org/headquarters_offices/apl/environ_policy_guidance/policy/faa_nepa_order/desk_ref/ (Accessed August 26, 2020).

4.2 Construction GHG Inventory

Table 4-1 presents estimated levels of GHG emissions as a result of construction of the Proposed Action Alternative.

TABLE 4-1
PROPOSED ACTION ALTERNATIVE CONSTRUCTION GHG EMISSIONS INVENTORY (METRIC TONS)

Project Component	CO_2	CH_4	N_2O	Total CO_2e
Perimeter Road	1,118.44	0.009	0.05	**1,132.14**
Runway Blast Pad	961.69	0.008	0.04	**973.24**
Runway Extension	906.01	0.007	0.04	**917.03**
Runway Safety Area	1,177.64	0.007	0.05	**1,193.05**
Taxiway Connectors	1,054.47	0.008	0.04	**1,067.68**
Williams Road	1,118.72	0.009	0.04	**1,132.28**
Total	**6,336.97**	**0.047**	**0.26**	**6,515.43**

SOURCE: Environmental Science Associates, 2024.

NOTES:
CO_2 = carbon dioxide (GWP = 1)
CH_4 = methane (GWP = 25)
N_2O = nitrous oxide (GWP = 298)
Totals may not add due to rounding
Total CO_2e calculated by multiplying metric tons of GHG by GWP value

There are no significance thresholds established for aviation GHG emissions, and the FAA has not identified specific factors to consider in making a significance determination for GHG emissions, especially as it may be applied to a particular project. Due to the negligible increase in GHG emissions associated with construction of the Proposed Action Alternative, there would be little, if any, increase in vulnerability to future climate impacts from the implementation of the Proposed Action.

4.3 Mitigation, Avoidance, or Minimization Measures

As the FAA has not established a significance threshold for climate and GHG emissions, the Proposed Action does not exceed a significance threshold for GHG emissions. Therefore, no mitigation measures are required.

Appendix A
Project Equipment Activity

TABLE A-1
PROJECT EQUIPMENT ACTIVITY

Project Component	ACRP ACEIT Equipment	MOVES Equipment	Construction Hours
Perimeter Road	Passenger Car	Passenger Car	595,980
Perimeter Road	Dump Truck Subbase Material	Single Unit Short-haul Truck	3,593
Perimeter Road	Water Truck	Off-highway Trucks	2,880
Perimeter Road	Dump Truck - Asphalt	Single Unit Short-haul Truck	599
Perimeter Road	Pickup Truck	Off-highway Trucks	537
Perimeter Road	Asphalt 18 Wheeler	Combination Short-haul Truck	423
Perimeter Road	Dump Truck	Dumpers/Tenders	387
Perimeter Road	Other General Equipment	Other Construction Equipment	374
Perimeter Road	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	286
Perimeter Road	Loader	Rubber Tire Loaders	186
Perimeter Road	Skid Steer Loader	Skid Steer Loaders	177
Perimeter Road	Dozer	Crawler Tractor/Dozers	141
Perimeter Road	Roller	Rollers	114
Perimeter Road	Excavator	Excavators	103
Perimeter Road	Dump Truck (12 cy)	Dumpers/Tenders	102
Perimeter Road	Concrete Truck	Off-highway Trucks	92
Perimeter Road	Flatbed Truck	Dumpers/Tenders	67
Perimeter Road	Vibratory Compactor	Plate Compactors	65
Perimeter Road	Chain Saw	Other Construction Equipment	14
Perimeter Road	Chipper/Stump Grinder	Other Construction Equipment	14
Perimeter Road	Scraper	Scrapers	14
Perimeter Road	Grader	Graders	6
Perimeter Road	Hydroseeder	Other Construction Equipment	5
Perimeter Road	Off-Road Truck	Off-highway Trucks	5
Perimeter Road	Surfacing Equipment (Grooving)	Surfacing Equipment	5
Perimeter Road	Pumps	Other Construction Equipment	5
Perimeter Road	Asphalt Paver	Pavers	4
RSA	Passenger Car	Passenger Car	286,380
RSA	Water Truck	Off-highway Trucks	2,880
RSA	Pickup Truck	Off-highway Trucks	897
RSA	Dump Truck (12 cy)	Dumpers/Tenders	849
RSA	Dozer	Crawler Tractor/Dozers	731
RSA	Roller	Rollers	339
RSA	Scraper	Scrapers	212
RSA	Excavator	Excavators	209
RSA	Dump Truck	Dumpers/Tenders	182
RSA	Chipper/Stump Grinder	Other Construction Equipment	131
RSA	Other General Equipment	Other Construction Equipment	109

Project Component	ACRP ACEIT Equipment	MOVES Equipment	Construction Hours
RSA	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	70
RSA	Hydroseeder	Other Construction Equipment	47
RSA	Off-Road Truck	Off-highway Trucks	47
RSA	Pumps	Other Construction Equipment	44
RSA	Loader	Rubber Tire Loaders	39
RSA	Skid Steer Loader	Skid Steer Loaders	27
RSA	Concrete Truck	Off-highway Trucks	7
Runway Blast Pad	Passenger Car	Passenger Car	580,500
Runway Blast Pad	Dump Truck Subbase Material	Single Unit Short-haul Truck	3,700
Runway Blast Pad	Water Truck	Off-highway Trucks	2,880
Runway Blast Pad	Pickup Truck	Off-highway Trucks	200
Runway Blast Pad	Other General Equipment	Other Construction Equipment	119
Runway Blast Pad	Dump Truck (12 cy)	Dumpers/Tenders	105
Runway Blast Pad	Flatbed Truck	Dumpers/Tenders	69
Runway Blast Pad	Dozer	Crawler Tractor/Dozers	63
Runway Blast Pad	Concrete Truck	Off-highway Trucks	58
Runway Blast Pad	Dump Truck	Dumpers/Tenders	42
Runway Blast Pad	Roller	Rollers	37
Runway Blast Pad	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	30
Runway Blast Pad	Excavator	Excavators	18
Runway Blast Pad	Loader	Rubber Tire Loaders	16
Runway Blast Pad	Skid Steer Loader	Skid Steer Loaders	14
Runway Blast Pad	Scraper	Scrapers	14
Runway Blast Pad	Air Compressor	Other Construction Equipment	11
Runway Blast Pad	Concrete Saws	Concrete/Industrial Saws	11
Runway Blast Pad	Rubber Tired Loader	Rubber Tire Loaders	11
Runway Blast Pad	Slip Form Paver	Pavers	11
Runway Blast Pad	Surfacing Equipment (Grooving)	Surfacing Equipment	11
Runway Blast Pad	Chipper/Stump Grinder	Other Construction Equipment	10
Runway Blast Pad	Vibratory Compactor	Plate Compactors	9
Runway Blast Pad	Grader	Graders	4
Runway Blast Pad	Hydroseeder	Other Construction Equipment	3
Runway Blast Pad	Off-Road Truck	Off-highway Trucks	3
Runway Blast Pad	Pumps	Other Construction Equipment	3
Runway Extension	Passenger Car	Passenger Car	503,100
Runway Extension	Dump Truck Subbase Material	Single Unit Short-haul Truck	3,201
Runway Extension	Water Truck	Off-highway Trucks	2,880
Runway Extension	Dump Truck - Asphalt	Single Unit Short-haul Truck	533
Runway Extension	Pickup Truck	Off-highway Trucks	140
Runway Extension	Dump Truck (12 cy)	Dumpers/Tenders	91
Runway Extension	Other General Equipment	Other Construction Equipment	91

Project Component	ACRP ACEIT Equipment	MOVES Equipment	Construction Hours
Runway Extension	Flatbed Truck	Dumpers/Tenders	59
Runway Extension	Dozer	Crawler Tractor/Dozers	55
Runway Extension	Dump Truck	Dumpers/Tenders	41
Runway Extension	Roller	Rollers	36
Runway Extension	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	18
Runway Extension	Skid Steer Loader	Skid Steer Loaders	16
Runway Extension	Excavator	Excavators	16
Runway Extension	Loader	Rubber Tire Loaders	14
Runway Extension	Scraper	Scrapers	12
Runway Extension	Chain Saw	Other Construction Equipment	8
Runway Extension	Chipper/Stump Grinder	Other Construction Equipment	8
Runway Extension	Surfacing Equipment (Grooving)	Surfacing Equipment	5
Runway Extension	Grader	Graders	3
Runway Extension	Hydroseeder	Other Construction Equipment	3
Runway Extension	Off-Road Truck	Off-highway Trucks	3
Runway Extension	Pumps	Other Construction Equipment	3
Runway Extension	Concrete Truck	Off-highway Trucks	2
Taxiway Connectors	Passenger Car	Passenger Car	503,100
Taxiway Connectors	Dump Truck Subbase Material	Single Unit Short-haul Truck	9,435
Taxiway Connectors	Water Truck	Off-highway Trucks	2,880
Taxiway Connectors	Dump Truck - Asphalt	Single Unit Short-haul Truck	1,573
Taxiway Connectors	Pickup Truck	Off-highway Trucks	471
Taxiway Connectors	Other General Equipment	Other Construction Equipment	327
Taxiway Connectors	Dump Truck (12 cy)	Dumpers/Tenders	267
Taxiway Connectors	Dump Truck	Dumpers/Tenders	182
Taxiway Connectors	Dozer	Crawler Tractor/Dozers	182
Taxiway Connectors	Flatbed Truck	Dumpers/Tenders	175
Taxiway Connectors	Roller	Rollers	124
Taxiway Connectors	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	94
Taxiway Connectors	Skid Steer Loader	Skid Steer Loaders	77
Taxiway Connectors	Loader	Rubber Tire Loaders	72
Taxiway Connectors	Excavator	Excavators	65
Taxiway Connectors	Scraper	Scrapers	35
Taxiway Connectors	Chain Saw	Other Construction Equipment	24
Taxiway Connectors	Chipper/Stump Grinder	Other Construction Equipment	24
Taxiway Connectors	Surfacing Equipment (Grooving)	Surfacing Equipment	14
Taxiway Connectors	Concrete Truck	Off-highway Trucks	13
Taxiway Connectors	Grader	Graders	10
Taxiway Connectors	Hydroseeder	Other Construction Equipment	9
Taxiway Connectors	Off-Road Truck	Off-highway Trucks	9
Taxiway Connectors	Pumps	Other Construction Equipment	8
Williams Road	Passenger Car	Passenger Car	637,466

Project Component	ACRP ACEIT Equipment	MOVES Equipment	Construction Hours
Williams Road	Dump Truck Subbase Material	Single Unit Short-haul Truck	3,383
Williams Road	Water Truck	Off-highway Trucks	2,880
Williams Road	Dump Truck - Asphalt	Single Unit Short-haul Truck	564
Williams Road	Pickup Truck	Off-highway Trucks	519
Williams Road	Asphalt 18 Wheeler	Combination Short-haul Truck	398
Williams Road	Dump Truck	Dumpers/Tenders	365
Williams Road	Other General Equipment	Other Construction Equipment	352
Williams Road	Tractors/Loader/Backhoe	Tractors/Loaders/Backhoes	270
Williams Road	Loader	Rubber Tire Loaders	175
Williams Road	Skid Steer Loader	Skid Steer Loaders	167
Williams Road	Dozer	Crawler Tractor/Dozers	132
Williams Road	Roller	Rollers	107
Williams Road	Dump Truck (12 cy)	Dumpers/Tenders	96
Williams Road	Concrete Truck	Off-highway Trucks	87
Williams Road	Excavator	Excavators	84
Williams Road	Flatbed Truck	Dumpers/Tenders	63
Williams Road	Vibratory Compactor	Plate Compactors	61
Williams Road	Excavator with Hoe Ram	Excavators	20
Williams Road	Chain Saw	Other Construction Equipment	14
Williams Road	Chipper/Stump Grinder	Other Construction Equipment	14
Williams Road	Scraper	Scrapers	13
Williams Road	Grader	Graders	6
Williams Road	Hydroseeder	Other Construction Equipment	5
Williams Road	Off-Road Truck	Off-highway Trucks	5
Williams Road	Surfacing Equipment (Grooving)	Surfacing Equipment	5
Williams Road	Pumps	Other Construction Equipment	5
Williams Road	Asphalt Paver	Pavers	4

Appendix F

Natural Resources Information

NATURAL RESOURCES TECHNICAL REPORT

Proposed Relocation of SR 1167 (Williams Road) to Accommodate the Coastal Carolina Regional Airport Runway Extension
Craven County, North Carolina

STIP No.: AV-5891
WBS No. 50363.1.1

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION
Division of Highways – Division 2

May 2025

1.0 INTRODUCTION

The North Carolina Department of Transportation (NCDOT) proposes to relocate SR 1167 (Williams Road) as part of a runway improvement project at Coastal Carolina Regional Airport (EWN) in Craven County, North Carolina (Figures 1 and 2). This road relocation will accommodate the extension of the existing runway. The following Natural Resources Technical Report (NRTR) has been prepared to assist in the preparation of the appropriate environmental documentation.

2.0 METHODOLOGY

All work was conducted in accordance with the NCDOT Environmental Coordination and Permitting (ECAP) Group's *Preparing Natural Resources Technical Reports Procedure* and the September 2021 NRTR Template. Field work was conducted on August 28, September 6, and September 14, 2023. Water resources identified in the Project Study Area (PSA) have been verified by the United States Army Corps of Engineers (USACE) via a Preliminary Jurisdictional Determination (PJD) (Action ID No. SAW-2025-00234; attached). A list of the principal Three Oaks personnel contributing to the field work and document is provided in the Appendix.

3.0 TERRESTRIAL COMMUNITIES

Three terrestrial communities were identified in the PSA. Figure 3 shows the location and extent of these terrestrial communities. Terrestrial community data are presented by the total coverage of each type within the PSA (Table 1).

Table 1. Coverage of terrestrial communities within the PSA

Community	Dominant Species (*Scientific name*)	Coverage (ac.)
Cypress-Gum Swamp (Blackwater Subtype)	Bald Cypress (*Taxodium distichum*) Water Oak (*Quercus nigra*) Green Ash (*Fraxinus caroliniana*)	4.6
Maintained/Disturbed	Wax Myrtle (*Morella cerifera*) Red Maple (*Acer rubrum*) Silky Dogwood (*Cornus amomum*)	100.2
Mesic Mixed Hardwood Forest (Coastal Plain Subtype)	Water Oak (*Quercus nigra*) Green Ash (*Fraxinus caroliniana*) Smooth Alder (*Alnus serrulata*)	0.4
Open Water	N/A	2.5
	Total	**107.7**

4.0 PROTECTED SPECIES

4.1 Endangered Species Act Protected Species

The United States Fish and Wildlife (USFWS) and the National Oceanic and Atmospheric Administration (NOAA) – National Marine Fisheries Service (NMFS) lists the following federally protected species within the PSA, under the Endangered Species Act (ESA) (Table 2). For each species, a discussion of the presence or absence of habitat is included along with the Biological Conclusion rendered based on survey results in the PSA.

Table 2. ESA federally protected species listed within the PSA[1]

Scientific Name	Common Name	Federal Status	Habitat Present	Biological Conclusion
Alligator mississippiensis	American Alligator	SAT	Yes	Not Required
Acipenser oxyrinchus oxyrinchus	Atlantic Sturgeon	E	No	No Effect
Laterallus jamaicensis ssp. *jamaicensis*	Eastern Black Rail	T	No	No Effect
Chelonia mydas	Green Sea Turtle	T	No	No Effect
Danaus plexippus	Monarch Butterfly	PT	Undetermined	Unresolved
Myotis septentrionalis	Northern Long-eared Bat	E	Yes	MA-LAA
Picoides borealis	Red-cockaded Woodpecker	E	No	No Effect
Calidris canutus rufa	Red Knot	T	No	No Effect
Lysimachia asperulifolia	Rough-leaved Loosestrife	E	Yes	No Effect
Acipenser brevirostrum	Shortnose Sturgeon	E	No	No Effect
Perimyotis subflavus	Tricolored Bat	PE	Yes	MA-LAA
Trichechus manatus	West Indian Manatee	T	No	No Effect

[1] USFWS Information for Planning and Consultation (IPaC) data checked on May 19, 2025
T– Threatened, E – Endangered, PE – Proposed Endangered, PT – Proposed Threatened, SAT – Similarity of Appearance to a Threatened Taxon
MA-LAA - May Affect – Likely to Adversely Affect

American Alligator
USFWS Optimal Survey Window: Year-round (only warm days in winter)

Biological Conclusion: Not Required

This species is listed by the USFWS as having a Similarity of Appearance to a Threatened Taxon. As a result, surveys for this species are not required. Suitable habitat for American Alligator is present in the form of streams and swamps. A review of the North Carolina Natural Heritage Program (NCNHP) Spring (April) 2025 dataset identified one Element Occurrence (EO) 0.3 miles north of the PSA (EO No. 6).

Atlantic Sturgeon
NMFS Optimal Survey Window: Not required; assume presence in appropriate waters

Biological Conclusion: No Effect

Suitable habitat for Atlantic Sturgeon is absent within the PSA. Scotts Creek, the largest waterway within the PSA, is not large enough to support the anadromous habits of this species. A review of the NCNHP Spring (April) 2025 dataset identified one EO located in the Neuse River, 0.3 miles north of the PSA. This EO (EO No. 6) is considered current. Due to the lack of suitable habitat within the PSA, the Biological Conclusion (BC) for Atlantic sturgeon is No Effect.

Eastern Black Rail
USFWS Optimal Survey Window: April 1-June 30

Biological Conclusion: No Effect

Suitable habitat for the Eastern Black Rail is absent within the PSA due to a lack of tidally influenced marshes within or immediately adjacent to the PSA. A review of the NCNHP Spring (April) 2025 dataset identified no known EO's within 1.0 mile of the PSA. Due to the lack of suitable habitat and known EO's, the BC for Eastern Black Rail is No Effect.

Green Sea Turtle
USFWS Optimal Survey Window: April-August for beach surveys

Biological Conclusion: No Effect

Suitable habitat for the Green Sea Turtle is absent within the PSA due to a lack of saltwater lagoons, reefs, bays, mangrove swamps, and inlets. Further, Green Sea Turtles do not nest in North Carolina. A review of the NCNHP Spring (April) 2025 dataset identified no known EO's within 1.0-mile of the PSA. Due to the lack of suitable habitat and known EO's, the BC for the Green Sea Turtle is No Effect.

Monarch Butterfly
USFWS Optimal Survey Window: Undetermined

Biological Conclusion: Unresolved

The Monarch Butterfly was proposed for federal listing in December 2024. However, no restrictions will take effect until the proposal is finalized, which is expected in late 2025 or early 2026. Until then, proposed species do not receive protection under the Endangered Species Act (ESA), except that federal action agencies must ensure their actions do not jeopardize the species' existence. These agencies may also consult with USFWS to obtain a Conference Opinion, which will automatically convert to a Biological Opinion upon the final listing decision.

In the meantime, if IPaC lists the Monarch Butterfly in a project area, NCDOT Construction or Division Environmental Offices may develop conservation measures related to Monarch Butterflies to be implemented when final listing has occurred.

Northern Long-eared Bat
USFWS Optimal Survey Window: Year-round (structure surveys)

Biological Conclusion: May Affect, Likely to Adversely Affect

The USFWS has issued a Programmatic Biological Opinion (PBO) in conjunction with the Federal Highway Administration (FHWA), USACE, and NCDOT for the Northern Long-eared Bat in eastern North Carolina. The PBO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. Although this programmatic covers Divisions 1-8, the USFWS only considers Northern Long-eared Bats to be known or potentially found in 30 counties within Divisions 1-8 (Figure 2, PBO). NCDOT, FHWA, and USACE have agreed to conservation measures which will avoid/minimize mortality of Northern Long-eared Bats. The programmatic determination for Northern Long-eared Bat for the NCDOT program is May Affect, Likely to Adversely Affect. The PBO will ensure compliance with Section 7 of the Endangered Species Act for ten years (effective through December 31, 2030) for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Craven County, where this project is located.

Red-Cockaded Woodpecker
USFWS Optimal Survey Window: Year-round; November-early March (optimal)

Biological Conclusion: No Effect

Suitable Red-cockaded Woodpecker habitat (nesting or foraging) is absent within the PSA. Habitat assessments were completed on September 14, 2023. There are no open, mature stands of southern pines suitable for foraging/nesting/roosting. A review of the NCNHP Spring (April) 2025 dataset identified no known EO's within 1.0 mile of the PSA. Due to the lack of suitable habitat within the PSA and the lack of EO's within 1.0 mile of the PSA, the BC for RCW is No Effect.

Red Knot
USFWS Optimal Survey Window: Year-round

Biological Conclusion: No Effect

Suitable habitat for Red Knot is absent within the PSA due to the lack of sandy, gravel, or cobble beaches, tidal mudflats, salt marshes, shallow coastal impoundments and lagoons, and peat banks. A review of the NCNHP Spring (April) 2025 dataset identified no known EO's within 1.0-mile of the PSA. Due to the lack of suitable habitat and known EO's, the BC for Red Knot is No Effect.

Rough-leaved Loosestrife
USFWS Optimal Survey Window: mid-May-September

Biological Conclusion: No Effect

Suitable habitat for Rough-leaved Loosestrife is present within the PSA in the form of dense, shrub dominant roadside wetlands. A survey of these areas was performed on September 14, 2023, and no observations were made. A review of the NCNHP Spring (April) 2025 dataset identified no known EO's within 1.0-mile of the PSA. Due to the lack of known EO's in the area, and no plants being observed during the survey, the BC for Rough-leaved Loosestrife is No Effect.

Shortnose Sturgeon
NMFS Optimal Survey Window: Not required; assume presence in appropriate waters

Biological Conclusion: No Effect

Suitable habitat for Shortnose Sturgeon is absent within the PSA. Scotts Creek, the largest waterway within the PSA, is not large enough to support the anadromous habits of this species. A review of the NCNHP Spring (April) 2025 dataset identified one EO located in the Neuse River, 0.3 miles North of the PSA. This EO (EO No. 17) is considered historic and was last observed in 1980. Due to the lack of suitable habitat within the PSA, the BC for Shortnose Sturgeon is No Effect.

Tricolored Bat
USFWS Optimal Survey Window: Year-round (structure surveys)

Biological Conclusion: May Affect, Likely to Adversely Affect

The USFWS has issued a Programmatic Conference Opinion (PCO) in conjunction with the FHWA, USACE, and NCDOT for the Tricolored Bat (TCB) (*Perimyotis subflavus*) in eastern North Carolina. The PCO covers the entire NCDOT program in Divisions 1-8, including all NCDOT projects and activities. NCDOT, FHWA, and USACE have agreed to conservation measures which will avoid/minimize take to TCBs. These conservation measures apply to all counties in Divisions 1-8. The programmatic determination for TCB for the NCDOT program is May Affect, Likely to Adversely Affect. Once the TCB is officially listed, the PCO will become the PBO by formal request from FHWA and USACE. The PBO will ensure compliance with Section 7 of the Endangered Species Act for approximately five

years (effective through December 31, 2028) for all NCDOT projects with a federal nexus in Divisions 1-8, which includes Craven County, where this project is located.

West Indian Manatee
NMFS Optimal Survey Window: Year-round

Biological Conclusion: No Effect

Suitable habitat for the West Indian Manatee is absent within the PSA. Scotts Creek and its associated floodplain wetlands are not large enough to support this species. West Indian Manatees utilize both freshwater and marine habitats, such as canals, sluggish rivers, estuarine habitats, and saltwater bays. A review of the NCNHP Spring (April) 2025 dataset identified one EO located approximately 1.0 mile north of the PSA. This EO (EO No. 2) is located approximately 0.5 miles upstream from the confluence of the Trent and Neuse River. This EO is considered historic and was last observed in 1994. Due to the lack of suitable habitat within the PSA, the BC for West Indian Manatee is No Effect.

4.2 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act is enforced by the USFWS. Golden Eagles do not nest in North Carolina. Habitat for the Bald Eagle primarily consists of mature forests in proximity to large bodies of open water for foraging. Large dominant trees are utilized for nesting sites, typically within 1.0 mile of open water.

A desktop-GIS assessment of the PSA, as well as the area within a 1.0-mile radius of the project limits, was performed on August 1, 2023, using the most recent color aerials. Water bodies large enough or sufficiently open to be considered potential feeding sources were identified. Since foraging habitat is present within the review area, a survey of the PSA and the area within 660 feet of the project limits was conducted on September 14, 2023. No eagles or nests were identified during this survey effort. A review of the NCNHP Spring (April) 2025 dataset revealed no known Bald Eagle EO's within 1.0 mile of the PSA. Due to the absence of nearby known Bald Eagle EO's, and the minimal impact anticipated for this project, it has been determined that this project will not affect this species.

4.3 Essential Fish Habitat

The NMFS has identified the Neuse River as Essential Fish Habitat for Snapper Grouper (all life stages) and Spiny Lobster (all life stages) directly downstream from Scotts Creek. The Essential Fish Habitat areas are not located within the PSA.

5.0 WATER RESOURCES

Water resources in the PSA are part of the Lower Neuse Subbasin (United States Geological Survey [USGS] Hydrologic Unit Code [HUC] 03020204) of the greater Neuse River Basin. Three streams were identified in the PSA (Table 3). The locations of these streams are shown on Figure 4.

Table 3. Streams in the PSA

Stream Name	Map ID	NCDWR Index Number	Best Usage Classification[1]	Bank Height (ft.)	Bankfull width (ft.)	Depth (in.)
Scotts Creek	Scotts Creek	27-102	SC;Sw; NSW	3-4	10-12	>12
Unnamed Tributary (UT) to Scotts Creek	SA	27-102	SC;Sw; NSW	0.5	8	8
UT to Scotts Creek	SB	27-102	SC;Sw; NSW	0.5	2-3	3-4

[1] SC;Sw – Aquatic Life, Secondary Contact Recreation, Tidal Salt Water. NSW – Nutrient Sensitive Waters

There are no designated Outstanding Resource Waters (ORW), High-Quality Waters (HQW), or Water Supply I or II Watersheds (WS-I or WS-II) within the PSA or within 1.0 mile downstream of the PSA. No streams in the PSA are listed on the North Carolina 2022 Final 303(d) list of impaired waters.

Three surface waters were identified in the PSA (Table 4). The location of each surface water is shown in Figure 4.

Table 4. Surface waters in the PSA

Map ID	Connection	Area (ac.)
PA	WC, WD	1.08
PB	N/A	0.25
TA	SB	0.08
	Total	**1.41**

6.0 REGULATORY CONSIDERATIONS

6.1 Clean Water Act Waters of the U.S.

Three streams were identified in the PSA (Table 5). The locations of these streams are shown on Figure 4. All streams in the PSA have been designated as warm water streams for the purposes of stream mitigation. Stream forms are located in a separate PJD Package.

Table 5. Status of streams in the PSA

Map ID	Length (ft.)	Classification	Compensatory Mitigation Required	River Basin Buffer
Scotts Creek[1]	2,007	Perennial	Yes	Subject
SA	615	Perennial	Yes	Subject
SB	608	Perennial	Yes	Subject
Total	**3,230**			

[1]A NCSAM form for part of Scotts Creek is available in a separate PJD package.

Four wetlands were identified within the PSA (Table 6). The locations of these wetlands are shown in Figure 4. All wetlands in the PSA are located within the Lower Neuse River Subbasin (USGS HUC 03020204). USACE wetland determination forms and North Carolina Wetland Assessment Method (NCWAM) forms are included in a separate PJD Package.

Table 6. Characteristics of wetlands in the PSA

Map ID	NCWAM Classification	Forested	NCWAM Rating[1]	Hydrologic Classification	404/401 or 401	Area (ac.) in Study Area
WA	Riverine Swamp Forest	Yes	*	Riparian	404/401	4.05
WB	Riverine Swamp Forest	Yes	*	Riparian	404/401	1.30
WC	Non-tidal Freshwater Marsh	No	Low	Riparian	404/401	4.58
WD	Headwater Forest	Yes	*	Riparian	404/401	0.54
					Total	**10.47**

1 – NCWAM forms were not completed for wetlands possessing qualities conducive to them receiving moderate or higher mitigation ratios and/or functional rating values. These features are represented by an asterisk (*).

6.2 Construction Moratoria

No moratoria are anticipated for this project at this time. However, this is subject to change depending on input from regulatory agencies.

6.3 N.C. River Basin Buffer Rules

Streamside riparian zones within the PSA are protected under provisions of the Neuse River Basin riparian buffer rules administered by NCDWR. Table 5 indicates which streams are subject to buffer rule protection. Potential impacts to protected stream buffers will be determined once a final alignment and design have been determined.

6.4 Rivers and Harbors Act Section 10 Navigable Waters

No streams have been designated by the USACE as Navigable Waters under Section 10 of the Rivers and Harbors Act.

6.5 Coastal Area Management Act Areas of Environmental Concern

There are no Coastal Area Management Act (CAMA) Areas of Environmental Concern (AEC) identified in the PSA.

6.6 Coastal Barrier Resources System

No Coastal Barrier Resources System (CBRS) units exist within the PSA.

7.0 REFERENCES

Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. Technical Report Y-87-1, U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

Environmental Laboratory. 1992. Clarification and Interpretation of the 1987 Manual, memorandum from Major General Arthur E. Williams.

Environmental Laboratory. 2012. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Region, Version 2.0. Vicksburg, Mississippi.

North Carolina Department of Environmental Quality - Division of Water Resources. 2022. Water Quality Assessment and Impaired Waters List, Final 2022 North Carolina 303(d) List. https://deq.nc.gov/about/divisions/water-resources/planning/modeling-assessment/water-quality-data-assessment/integrated-report-files.

North Carolina Division of Water Quality. 2010. Methodology for Identification of Intermittent and Perennial Streams and their Origins, Version 4.11. North Carolina Department of Environmental and Natural Resources, Division of Water Quality. Raleigh, NC.

North Carolina Natural Heritage Program (NCNHP). 2025. Natural Heritage Data Explorer, Spring (April) 2025 Quarterly Dataset [Web Application]. NCDNCR, Raleigh, NC. http://ncnhde.natureserve.org.

Schafale, M.P. 2012. Guide to the Natural Communities of North Carolina: Fourth Approximation. North Carolina Natural Heritage Program, North Carolina Department of Environmental Quality (NCDEQ). Raleigh, North Carolina. 208 pp.

Unites States Department of Agriculture, Natural Resources Conservation Service (NRCS). 2018. Field Indicators of Hydric Soils in the United States, Version 8.2. L.M. Vasilas, G.W. Hurt, and J.F. Berkowitz (eds.). USDA, NRCS, in cooperation with the National Technical Committee for Hydric Soils.

United States Department of Agriculture, Natural Resources Conservation Service (NRCS). 1989. Soil Survey of Craven County, North Carolina.

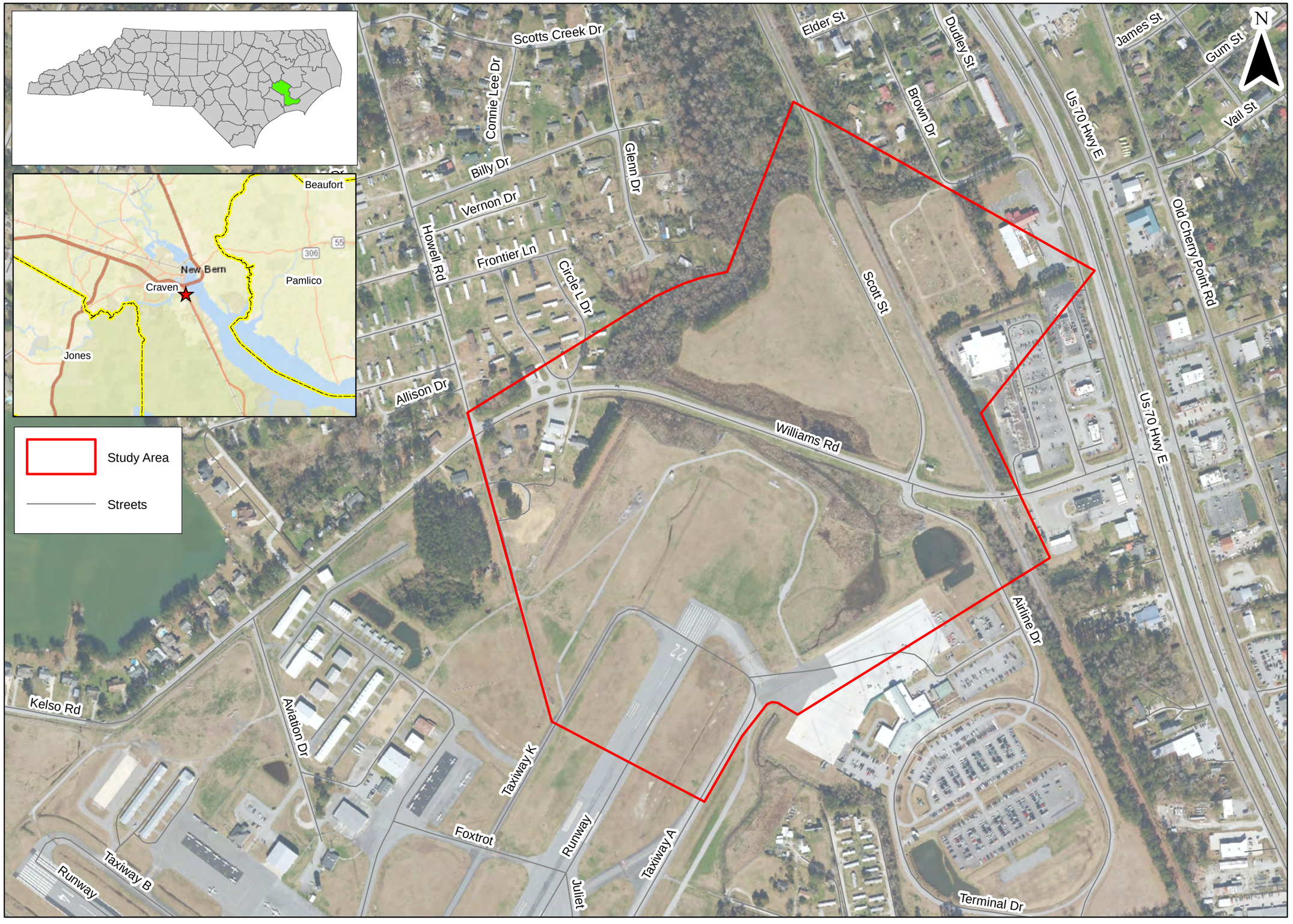
United States Fish and Wildlife Service. Environmental Conservation Online System (ECOS). https://ecos.fws.gov/ecp/.

United States Fish and Wildlife Service. Information for Planning and Consultation (IPaC). https://ipac.ecosphere.fws.gov/.

United States Geological Survey. 2022. New Bern, North Carolina, Topographic Quadrangles (7.5-minute series).

Weakley, Alan S. (Working Draft). Flora of the Southern and Mid-Atlantic States. University of North Carolina Herbarium (NCU), North Carolina Botanical Garden. Chapel Hill, NC. 2022 pp

Appendix



THREE OAKS ENGINEERING

Prepared For:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

AV-5891

EWN Extention
and
Relocation
of
Williams Road
(SR 1167)

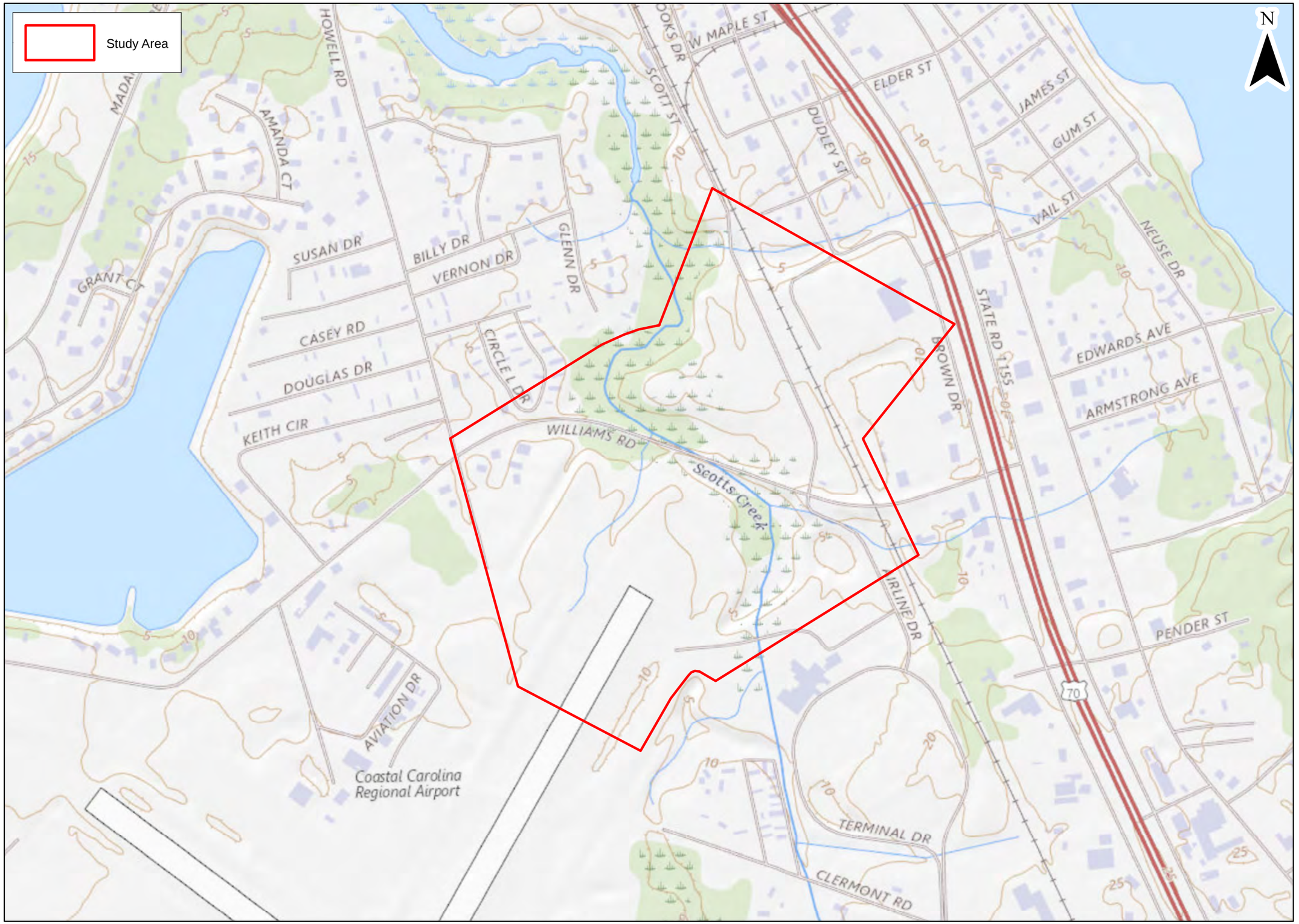
Project Vicinity Map

Craven County
North Carolina

Date:	September 2023
Scale:	0 200 400 Ft
Job No.:	22-652
Drawn By:	CMR
Checked By:	JSM

Figure

1



THREE OAKS ENGINEERING

Prepared For:

STATE OF NORTH CAROLINA · DEPARTMENT OF TRANSPORTATION

AV-5891

EWN Extention
and
Relocation
of
Williams Road
(SR 1167)

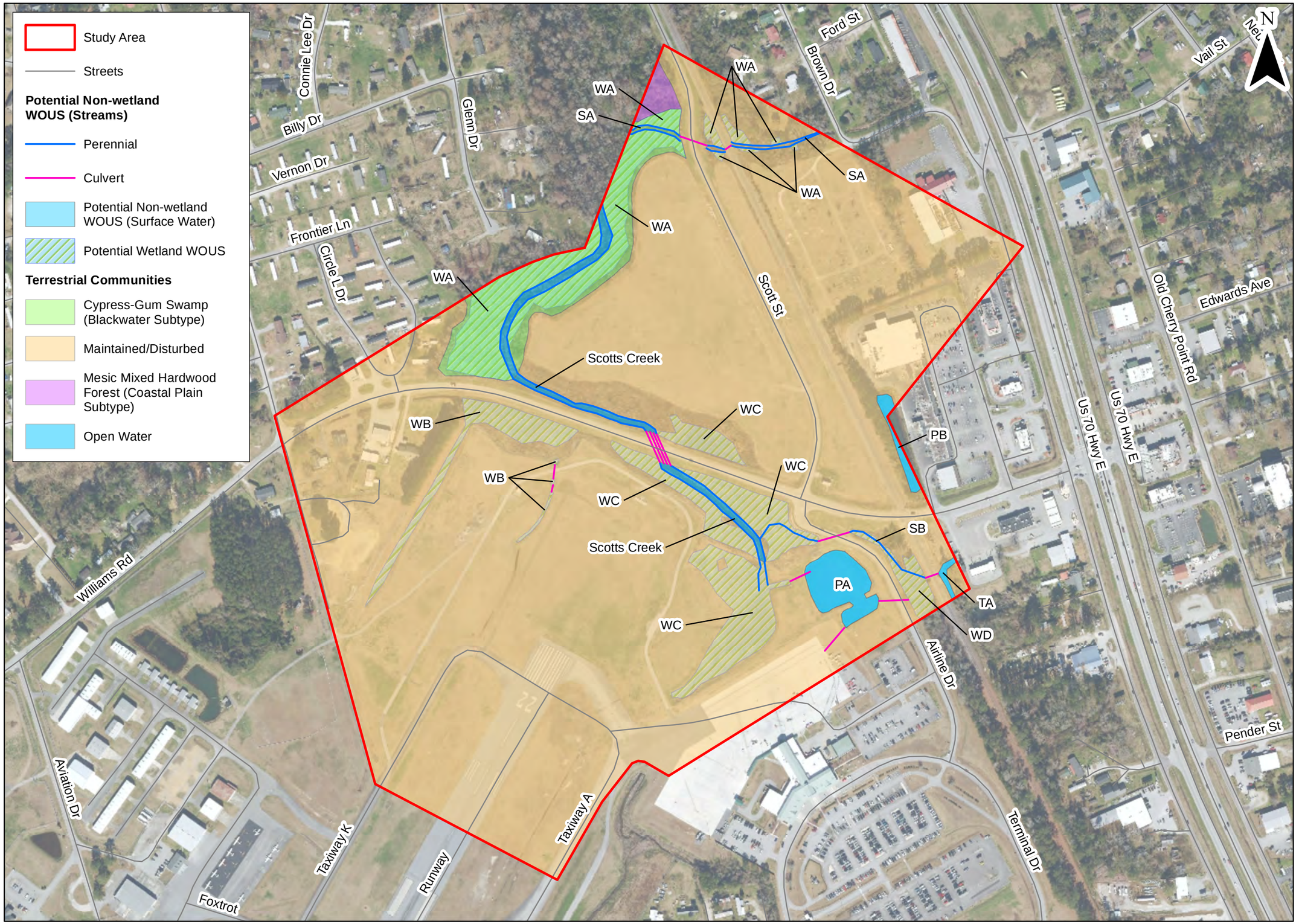
Topographic
Map

Craven County
North Carolina

Date:	September 2023
Scale:	0 250 500 Ft
Job No.:	22-652
Drawn By: CMR	Checked By: JSM

Figure

2



Three Oaks Engineering

Prepared For:

State of North Carolina Department of Transportation

AV-5891

EWN Extention and Relocation of Williams Road (SR 1167)

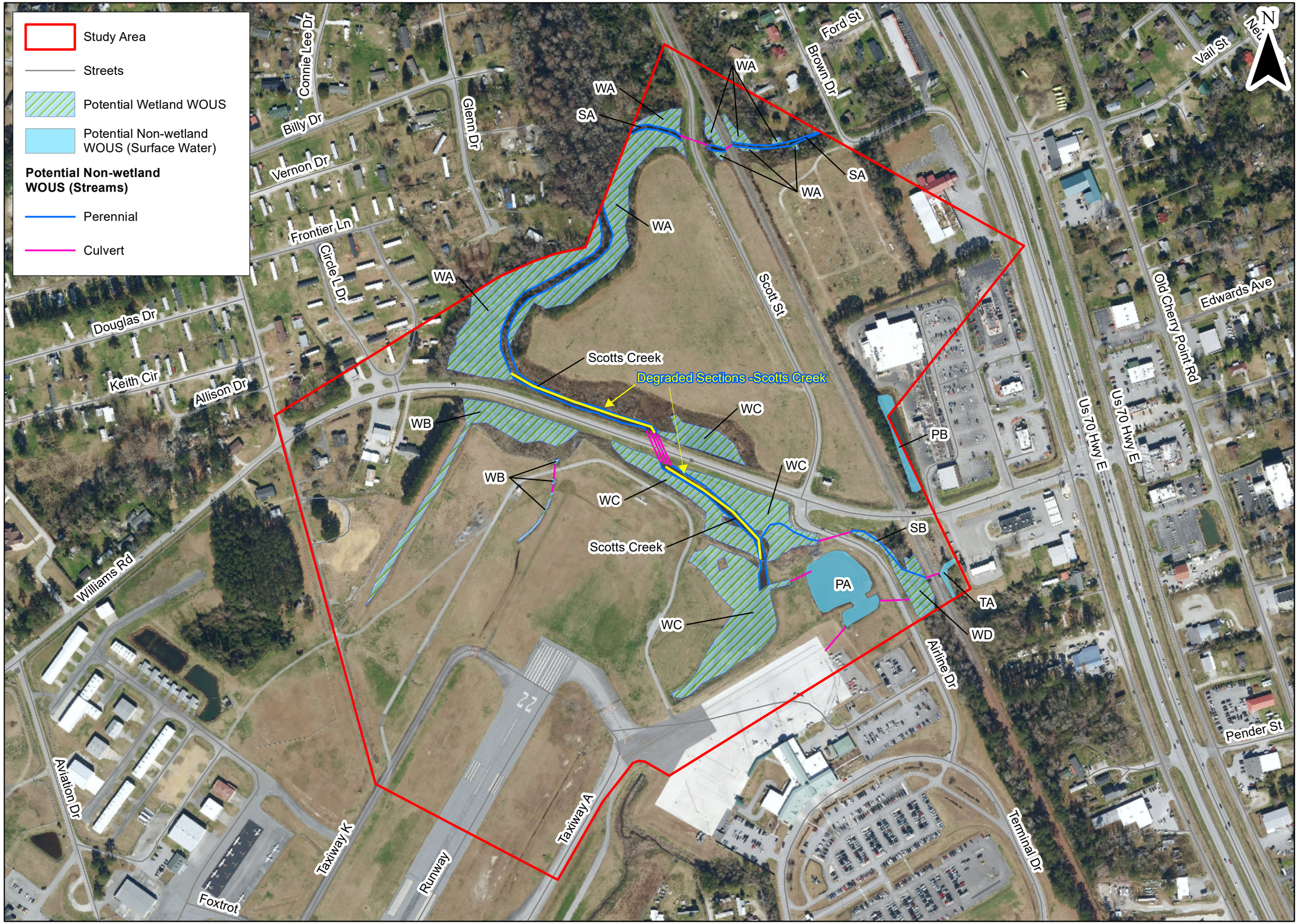
Terrestrial Communities Map

Craven County North Carolina

Date:	September 2023
Scale:	0 150 300 Ft
Job No.:	22-652
Drawn By:	CMR
Checked By:	JSM

Figure

3



THREE OAKS ENGINEERING

Prepared For:

STATE OF NORTH CAROLINA DEPARTMENT OF TRANSPORTATION

AV-5891

EWN Extention and Relocation of Williams Road (SR 1167)

Water Resources Map

Craven County North Carolina

Date:	November 2023
Scale:	0 150 300 Ft
Job No.:	22-652
Drawn By:	CMR
Checked By:	JSM

Figure

4

Qualifications of Contributors

Principal Investigator:	Adam Efird, PWS
Education:	B.S. Biology, Environmental Science; Campbell University, 2006 Master of Natural Resources, Virginia Tech, 2014
Experience:	Senior Environmental Project Manager, Three Oaks Engineering, 2023-Present Environmental Project Manager, NV5 Global Inc. 2020-2023 Environmental Project Manager, Moffatt & Nichol, 2014-2020 Environmental Scientist, Atkins, 2008-2014
Responsibilities:	Jurisdictional Waters Delineations, T&E Surveys, Document Preparation and Review

Investigator:	Mark Guerard
Education:	Coursework, Jurisdictional Waters Delineations
Experience:	Environmental Technician, Three Oaks Engineering, May 2022-Present
Responsibilities:	Jurisdictional Waters Delineations, T&E surveys, Document Preparation and Review

Investigator:	Byron Levan
Education:	B.S. Fisheries, Wildlife, and Conservation Biology; North Carolina State University, 2011 M.FW. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2019
Experience:	Environmental Scientist, Three Oaks Engineering, 2021-Present Junior Environmental Scientist, NV5 Global Inc. 2019-2021
Responsibilities:	Jurisdictional Waters Delineations, T&E Surveys

Investigator:	Annie Dahlem
Education:	M.S. Natural Resources, North Carolina State University, 2022 B.S. Natural Resources, North Carolina State University, 2020
Experience:	Environmental Scientist, Three Oaks Engineering, 2023-Present Environmental Scientist, NV5 Engineers and Consultants, 2023-2023 Environmental Scientist, Moffatt & Nichol, 2021-2022
Responsibilities:	Jurisdictional Waters Delineations, T&E Surveys, Document Preparation

Investigator:	Nathan Howell
Education:	B.S. Fisheries, Wildlife, and Conservation Biology, North Carolina State University, 2013 M.S. Plant and Microbial Biology, North Carolina State University, 2015
Experience:	Environmental Scientist, Three Oaks Engineering, October 2015 – Present
Responsibilities:	Jurisdictional Waters Delineations, Document Review

Investigator:	Cary Rowells
Education:	Coursework, Civil Engineering, Wake technical Community College Coursework, Geology, University of North Carolina at Wilmington
Experience:	GIS Analyst, Three Oaks Engineering, 2015-Present GIS analyst, Michael Baker Engineering, 2002-2015 Analytical Surveys, Inc., CADD Technician/GIS Technician/GIS Project Coordinator, 1989-2002
Responsibilities:	GIS Mapping, Microstation

U.S. ARMY CORPS OF ENGINEERS
WILMINGTON DISTRICT

Action Id. **SAW-2025-00234** County: **Craven County**

NOTIFICATION OF JURISDICTIONAL DETERMINATION

Property Owner/Applicant: **NCDOT, Division 2**
Jay Johnson
Address: **1037 W H Smith Blvd.**

Greenville, NC, 27834
Telephone Number: ******

Size (acres) **100+ acres** Nearest Town **New Bern**
Nearest Waterway **Trent River** River Basin **Neuse**
USGS HUC **03020204** Coordinates Latitude: **35.081984;** Longitude: **-77.036605**
Location description: **Williams Road (SR-1167) on west end of Coastal Carolina Airport Runway**

Indicate Which of the Following Apply:

A. Preliminary Determination

X There appear to be waters, including wetlands, on the above described property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). The waters, including wetlands, have been delineated, and the delineation has been verified by the Corps to be sufficiently accurate and reliable. Therefore this preliminary jurisdiction determination may be used in the permit evaluation process, including determining compensatory mitigation. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction.

_ There appear to be waters, including wetlands, on the above described property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). The waters, including wetlands, have been delineated, and the delineation has been verified by the Corps to be sufficiently accurate and reliable. Therefore this preliminary jurisdiction determination may be used in the permit evaluation process, including determining compensatory mitigation. For purposes of computation of impacts, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a preliminary JD will treat all waters and wetlands that would be affected in any way by the permitted activity on the site as if they are jurisdictional waters of the U.S. This preliminary determination is not an appealable action under the Regulatory Program Administrative Appeal Process (Reference 33 CFR Part 331). However, you may request an approved JD, which is an appealable action, by contacting the Corps district for further instruction.

_ There appear to be waters, including wetlands, on the above described property, that may be subject to Section 404 of the Clean Water Act (CWA)(33 USC § 1344) and/or Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403). However, since the waters, including wetlands, have not been properly delineated, this preliminary jurisdiction determination may not be used in the permit evaluation process. Without a verified wetland delineation, this preliminary determination is merely an effective presumption of CWA/RHA jurisdiction over all of the waters, including wetlands, at the project area, which is not sufficiently accurate and reliable to support an enforceable permit decision. We recommend that you have the waters of the U.S., including wetlands, on your property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

B. Approved Determination

_ There are Navigable Waters of the United States within the above described property subject to the permit requirements of Section 10 of the Rivers and Harbors Act (RHA) (33 USC § 403) and Section 404 of the Clean Water Act (CWA)(33 USC §

1344). Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are waters of the U.S., including wetlands, on the above described property subject to the permit requirements of Section 404 of the Clean Water Act (CWA) (33 USC § 1344). Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ We recommend you have the waters of the U.S., including wetlands, on your property delineated. As the Corps may not be able to accomplish this wetland delineation in a timely manner, you may wish to obtain a consultant to conduct a delineation that can be verified by the Corps.

_ The waters of the U.S., including wetlands, on your property have been delineated and the delineation has been verified by the Corps. We strongly suggest you have this delineation surveyed. Upon completion, this survey should be reviewed and verified by the Corps. Once verified, this survey will provide an accurate depiction of all areas subject to CWA jurisdiction on your property which, unless there is a change in law or our published regulations, may be relied upon for a period not to exceed five years from the date of this notification.

_ The waters of the U.S., including wetlands, have been delineated and surveyed and are accurately depicted on the plat signed by the Corps Regulatory Official identified below on _____. Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

_ There are no waters of the U.S., to include wetlands, present on the above described property which are subject to the permit requirements of Section 404 of the Clean Water Act (33 USC 1344). Unless there is a change in law or our published regulations, this determination may be relied upon for a period not to exceed five years from the date of this notification.

X The property is located in one of the 20 Coastal Counties subject to regulation under the Coastal Area Management Act (CAMA). You should contact the Division of Coastal Management in Morehead City, NC, at (252) 808-2808 to determine their requirements.

Placement of dredged or fill material within waters of the US, including wetlands, without a Department of the Army permit may constitute a violation of Section 301 of the Clean Water Act (33 USC § 1311). Placement of dredged or fill material, construction or placement of structures, or work within navigable waters of the United States without a Department of the Army permit may constitute a violation of Sections 9 and/or 10 of the Rivers and Harbors Act (33 USC § 401 and/or 403). If you have any questions regarding this determination and/or the Corps regulatory program, please contact **Thomas Steffens at (910) 251-4615 or Thomas.A.Steffens@usace.army.mil**.

C. Basis For Determination: N/A. An Approved JD has not been completed.

D. Remarks: PJD signed 01-25-2025

E. Attention USDA Program Participants

The delineation included herein has been conducted to identify the location and extent of the aquatic resource boundaries and/or the jurisdictional status of aquatic resources for purposes of the Clean Water Act for the particular site identified in this request. This delineation and/or jurisdictional determination may not be valid for the Wetland Conservation Provisions of the Food Security Act of 1985, as amended. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should discuss the applicability of a certified wetland determination with the local USDA service center, prior to starting work.

F. Appeals Information for Approved Jurisdiction Determinations (as indicated in Section B. above)

If you object to this determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331. Enclosed you will find a Notification of Appeal Process (NAP) fact sheet and Request for Appeal (RFA) form. If you request to appeal this determination you must submit a completed RFA form to the following address:

Administrative Appeal Review Officer
Attn: Krista Sabin
US Army Corps of Engineers, South Atlantic Division
60 Forsyth Street, Room 10M15

Atlanta, Georgia 30303-8801
AND
krista.d.sabin@usace.army.mil

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR part 331.5, and that it has been received by the Division Office within 60 days of the date of the NAP. Should you decide to submit an RFA form, it must be received at the above address by **.
It is not necessary to submit an RFA form to the Division Office if you do not object to the determination in this correspondence.

Corps Regulatory Official: _____

Date of JD: **January 30, 2025** Expiration Date: **None - PJD**

The Wilmington District is committed to providing the highest level of support to the public. To help us ensure we continue to do so, please complete our Customer Satisfaction Survey, located online at https://regulatory.ops.usace.army.mil/customer-service-survey/.

Copy Furnished:

NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL		
Applicant: **NCDOT, Division 2 Jay Johnson**	File Number: **SAW-2025-00234**	Date: **January 30, 2025**

Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL WITHOUT PREJUDICE	C
	PERMIT DENIAL WITH PREJUDICE	D
	APPROVED JURISDICTIONAL DETERMINATION	E
X	PRELIMINARY JURISDICTIONAL DETERMINATION	F

SECTION I

The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at https://www.usace.army.mil/Missions/Civil-Works/Regulatory-Program-and-Permits/appeals/ or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.
- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C. PERMIT DENIAL WITHOUT PREJUDICE: Not appealable

You received a permit denial without prejudice because a required Federal, state, and/or local authorization and/or certification has been denied for activities which also require a Department of the Army permit before final action has been taken on the Army permit application. The permit denial without prejudice is not appealable. There is no prejudice to the right of the applicant to reinstate processing of the Army permit application if subsequent approval is received from the appropriate Federal, state, and/or local agency on a previously denied authorization and/or certification.

D: PERMIT DENIAL WITH PREJUDICE: You may appeal the permit denial

You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information for reconsideration

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

- RECONSIDERATION: You may request that the district engineer reconsider the approved JD by submitting new information or data to the district engineer within 60 days of the date of this notice. The district will determine whether the information submitted qualifies as new information or data that justifies reconsideration of the approved JD. A reconsideration request does not initiate the appeal process. You may submit a request for appeal to the division engineer to preserve your appeal rights while the district is determining whether the submitted information qualifies for a reconsideration.

F: PRELIMINARY JURISDICTIONAL DETERMINATION: Not appealable
You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also, you may provide new information for further consideration by the Corps to reevaluate the JD.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision you may contact:	If you have questions regarding the appeal process, or to submit your request for appeal, you may contact:
District Engineer, Wilmington Regulatory Division, WRDA Transportation Branch Attn: **Thomas Steffens** 2407 West 5th Street Washington, North Carolina 27889 thomas.a.steffens@uscae.army.mil	Administrative Appeal Review Officer Attn: Krista Sabin US Army Corps of Engineers, South Atlantic Division 60 Forsyth Street, Room 10M15 Atlanta, Georgia 30303-8801 krista.d.sabin@usace.army.mil (904) 314-9631

SECTION II – REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. Use additional pages as necessary. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15-day notice of any site investigation and will have the opportunity to participate in all site investigations.

_____ Signature of appellant or agent.	Date:
Email address of appellant and/or agent:	Telephone number:

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
3916 Sunset Ridge Rd
Raleigh, NC 27607
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To: 07/29/2024 14:02:01 UTC
Project Code: 2024-0122496
Project Name: Coastal Carolina Regional Airport (EWN) Runway 4-22 Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). If your project area contains suitable habitat for any of the federally-listed species on this species list, the proposed action has the potential to adversely affect those species. If suitable habitat is present, surveys should be conducted to determine the species' presence or absence within the project area. The use of this species list and/or North Carolina Natural Heritage program data should not be substituted for actual field surveys.

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered

species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts, see https://www.fws.gov/program/migratory-bird-permit/what-we-do.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures, see https://www.fws.gov/library/collections/threats-birds.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit https://www.fws.gov/partner/council-conservation-migratory-birds.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Bald & Golden Eagles
- Migratory Birds
- Marine Mammals

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Raleigh Ecological Services Field Office
3916 Sunset Ridge Rd
Raleigh, NC 27607
(919) 856-4520

PROJECT SUMMARY

Project Code: 2024-0122496

Project Name: Coastal Carolina Regional Airport (EWN) Runway 4-22 Improvements

Project Type: Airport - New Construction

Project Description: Coastal Carolina Regional Airport is located in New Bern, North Carolina, approximately two miles south of the downtown historic district, and one mile south of the interchange of US Routes 70 and 17 and the confluence of the Trent and Neuse Rivers. The Airport is referred to by the Federal Aviation Administration (FAA) identifier EWN and is situated on approximately 734 acres in Craven County. The purpose of the proposed Runway 4-22 Runway Improvement Program is to enhance airfield safety, regain usable runway length, and maximize operational utility at EWN.

Project Location:

The approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/@35.08180145,-77.03723473012761,14z

Counties: Craven County, North Carolina

ENDANGERED SPECIES ACT SPECIES

There is a total of 11 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Northern Long-eared Bat *Myotis septentrionalis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat *Perimyotis subflavus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered
West Indian Manatee *Trichechus manatus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. ***This species is also protected by the Marine Mammal Protection Act, and may have additional consultation requirements.*** Species profile: https://ecos.fws.gov/ecp/species/4469	Threatened

BIRDS

NAME	STATUS
Eastern Black Rail *Laterallus jamaicensis ssp. jamaicensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10477	Threatened
Red-cockaded Woodpecker *Picoides borealis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered
Rufa Red Knot *Calidris canutus rufa* There is **proposed** critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

REPTILES

NAME	STATUS
American Alligator *Alligator mississippiensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/776	Similarity of Appearance (Threatened)
Green Sea Turtle *Chelonia mydas* Population: North Atlantic DPS There is **proposed** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6199	Threatened
Leatherback Sea Turtle *Dermochelys coriacea* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1493	Endangered

INSECTS

NAME	STATUS
Monarch Butterfly *Danaus plexippus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

FLOWERING PLANTS

NAME	STATUS
Rough-leaved Loosestrife *Lysimachia asperulaefolia* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2747	Endangered

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

USFWS NATIONAL WILDLIFE REFUGE LANDS AND FISH HATCHERIES

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

THERE ARE NO REFUGE LANDS OR FISH HATCHERIES WITHIN YOUR PROJECT AREA.

BALD & GOLDEN EAGLES

Bald and golden eagles are protected under the Bald and Golden Eagle Protection Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

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

There are likely bald eagles present in your project area. For additional information on bald eagles, refer to Bald Eagle Nesting and Sensitivity to Human Activity

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

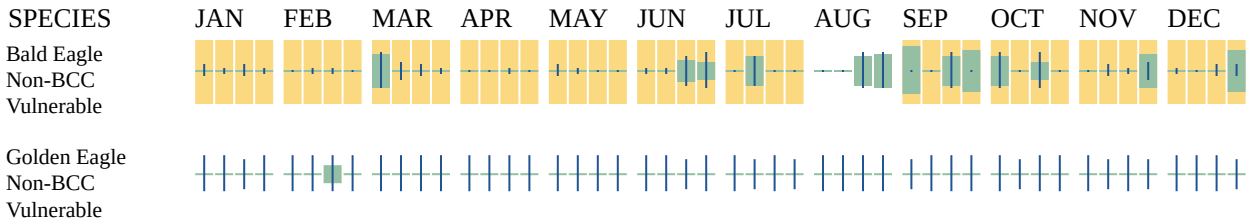
Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

■ probability of presence ■ breeding season | survey effort – no data



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MIGRATORY BIRDS

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described in the links below. Specifically, please review the "Supplemental Information on Migratory Birds and Eagles".

---

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

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the PROBABILITY OF PRESENCE SUMMARY below to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
American Kestrel *Falco sparverius paulus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9587	Breeds Apr 1 to Aug 31
American Oystercatcher *Haematopus palliatus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8935	Breeds Apr 15 to Aug 31
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Sep 1 to Jul 31
Brown-headed Nuthatch *Sitta pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9427	Breeds Mar 1 to Jul 15
Chimney Swift *Chaetura pelagica* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9406	Breeds Mar 15 to Aug 25
Chuck-will's-widow *Antrostomus carolinensis* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9604	Breeds May 10 to Jul 10
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10678	Breeds May 1 to Aug 20
Golden Eagle *Aquila chrysaetos* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds elsewhere
Kentucky Warbler *Geothlypis formosa* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9443	Breeds Apr 20 to Aug 20
King Rail *Rallus elegans* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8936	Breeds May 1 to Sep 5

NAME	BREEDING SEASON
Least Tern *Sternula antillarum antillarum* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/11919	Breeds Apr 25 to Sep 5
Lesser Yellowlegs *Tringa flavipes* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Painted Bunting *Passerina ciris* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9511	Breeds Apr 25 to Aug 15
Pectoral Sandpiper *Calidris melanotos* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9561	Breeds elsewhere
Prairie Warbler *Setophaga discolor* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9513	Breeds May 1 to Jul 31
Prothonotary Warbler *Protonotaria citrea* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9439	Breeds Apr 1 to Jul 31
Red-headed Woodpecker *Melanerpes erythrocephalus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9398	Breeds May 10 to Sep 10
Rusty Blackbird *Euphagus carolinus* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9478	Breeds elsewhere
Semipalmated Sandpiper *Calidris pusilla* This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9603	Breeds elsewhere
Willet *Tringa semipalmata* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/10669	Breeds Apr 20 to Aug 5

NAME	BREEDING SEASON
Wood Thrush *Hylocichla mustelina* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9431	Breeds May 10 to Aug 31

PROBABILITY OF PRESENCE SUMMARY

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "Supplemental Information on Migratory Birds and Eagles", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

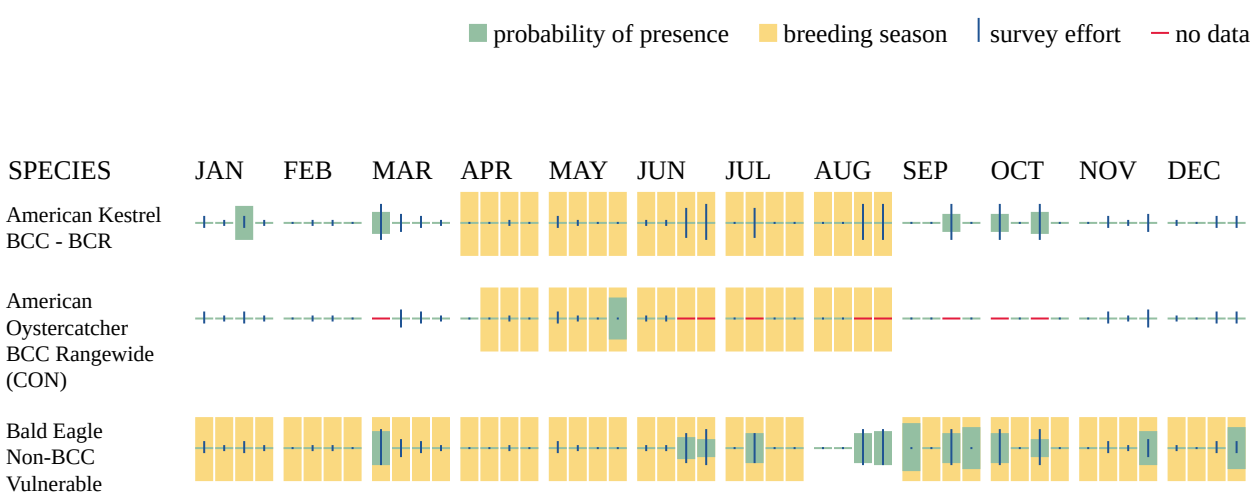
Probability of Presence (■)

Green bars; the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during that week of the year.

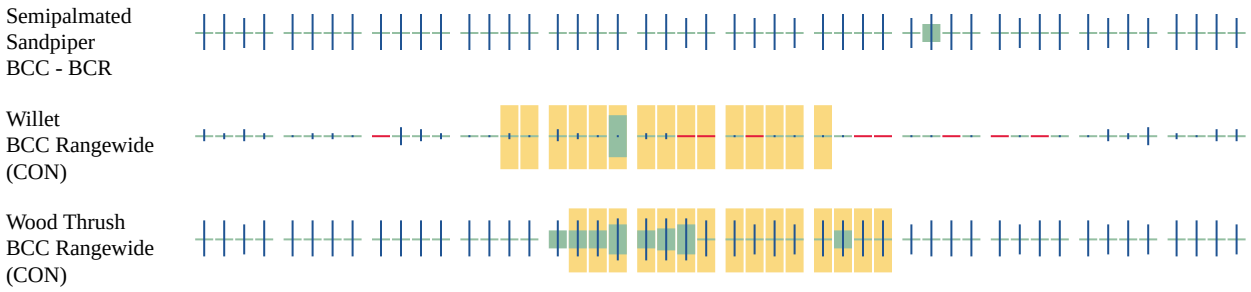
Breeding Season (■)
Yellow bars; liberal estimate of the timeframe inside which the bird breeds across its entire range.

Survey Effort (|)
Vertical black lines; the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data (–)
A week is marked as having no data if there were no survey events for that week.




Brown-headed Nuthatch BCC - BCR
Chimney Swift BCC Rangewide (CON)
Chuck-will's-widow BCC - BCR
Eastern Whip-poor-will BCC Rangewide (CON)
Golden Eagle Non-BCC Vulnerable
Kentucky Warbler BCC Rangewide (CON)
King Rail BCC Rangewide (CON)
Least Tern BCC Rangewide (CON)
Lesser Yellowlegs BCC Rangewide (CON)
SPECIES
JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Painted Bunting BCC - BCR
Pectoral Sandpiper BCC Rangewide (CON)
Prairie Warbler BCC Rangewide (CON)
Prothonotary Warbler BCC Rangewide (CON)
Red-headed Woodpecker BCC Rangewide (CON)
Rusty Blackbird BCC - BCR



Additional information can be found using the following links:

- Eagle Management https://www.fws.gov/program/eagle-management
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf
- Supplemental Information for Migratory Birds and Eagles in IPaC https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action

MARINE MAMMALS

Marine mammals are protected under the Marine Mammal Protection Act. Some are also protected under the Endangered Species Act[1] and the Convention on International Trade in Endangered Species of Wild Fauna and Flora[2].

The responsibilities for the protection, conservation, and management of marine mammals are shared by the U.S. Fish and Wildlife Service [responsible for otters, walruses, polar bears, manatees, and dugongs] and NOAA Fisheries[3] [responsible for seals, sea lions, whales, dolphins, and porpoises]. Marine mammals under the responsibility of NOAA Fisheries are **not** shown on this list; for additional information on those species please visit the Marine Mammals page of the NOAA Fisheries website.

The Marine Mammal Protection Act prohibits the take of marine mammals and further coordination may be necessary for project evaluation. Please contact the U.S. Fish and Wildlife Service Field Office shown.

---

1. The Endangered Species Act (ESA) of 1973.
2. The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) is a treaty to ensure that international trade in plants and animals does not threaten their survival in the wild.
3. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

NAME

West Indian Manatee *Trichechus manatus*

Species profile: https://ecos.fws.gov/ecp/species/4469

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Makyah Savoy
Address: 140 Stoneridge drive
City: Columbia
State: SC
Zip: 29210
Email msavoy@parrishandpartners.com
Phone: 8039787613

STATE SPECIES OF CONCERN - CRAVEN COUNTY

Taxonomic Group	Scientific Name	Common Name	NC Status	State Rank	Global Rank	County Status	Habitat Comment	Potential Habitat Present?
Amphibian	Pseudacris ornata	Ornate Chorus Frog	E	S2	G4	Historical	swamps, savannas, wooded ponds and pools	Yes
Amphibian	Eurycea quadridigitata	Dwarf Salamander	SC	S1	G5	Historical	pocosins, Carolina bays, pine flatwoods, savannas, and other wetland habitats	Yes
Amphibian	Pseudacris nigrita	Southern Chorus Frog	SC	S2	G5	Current	ditches, Carolina bays, and other temporary shallow pools and ponds	Yes
Amphibian	Anaxyrus quercicus	Oak Toad	SR	S2	G5	Current	pine flatwoods and savannas, pine sandhills where near water	Yes
Amphibian	Siren lacertina	Greater Siren	W3	S3	G5	Current	lakes, ponds, and streams, especially where muddy or with weedy vegetation	Yes
Amphibian	Pseudacris brimleyi	Brimleys Chorus Frog	W5	S4	G5	Current	swamps, marshes, and other wetlands	Yes
Amphibian	Stereochilus marginatus	Many-lined Salamander	W5	S3S4	G5	Current	swamps, shallow wooded ponds in savannas	Yes
Animal Assemblage	Waterbird Colony	Waterbird Colony		S3	GNR	Current	null	No
Bird	Setophaga virens waynei	Wayne's Black-throated Green Warbl	E	S2B	G5T1	Current	nonriverine wetland forests, especially where white cedar or cypress are mixed with hardwoods [breeding evidence only]	No
Bird	Egretta caerulea	Little Blue Heron	SC	S3B,S3N	G5	Current	forests or thickets on maritime islands, rarely in swamps or at pondsÂ [breeding evidence only]	No
Bird	Ixobrychus exilis	Least Bittern	SC	S3B	G4	Historical	fresh or brackish marshes [breeding evidence only]	No
Bird	Peucaea aestivalis	Bachman's Sparrow	SC	S3B,S2N	G3	Current	open longleaf pine forests, old fields [breeding evidence only]	Yes
Bird	Sternula antillarum	Least Tern	SC	S3B	G4	Current	beaches, sand flats, open dunes, gravel rooftopsÂ [breeding evidence only]	No
Bird	Ammospiza caudacuta	Saltmarsh Sparrow	SR	SUB,S2N	G2	Historical	tidal marshes [wintering sites]	No
Bird	Botaurus lentiginosus	American Bittern	SR	S1B,S3N	G5	Historical	fresh or brackish marshes [breeding evidence only]	No
Bird	Coccyzus erythropthalmus	Black-billed Cuckoo	SR	S2B	G5	Current	deciduous forests, mainly at higher elevations [breeding evidence only]	Yes
Bird	Dolichonyx oryzivorus	Bobolink	SR	S1B	G5	Current	meadows and other grasslands [breeding evidence only]	Yes
Bird	Phalacrocorax auritus	Double-crested Cormorant	SR	S1B,S5N	G5	Current	lakes with scattered trees, coastal sand bars (nesting) [breeding evidence only]	No
Bird	Setophaga coronata	Yellow-rumped Warbler	SR	S1B,S5N	G5	Historical	spruce-fir forests, especially in immature stands [breeding evidence only]	No
Bird	Anhinga anhinga	Anhinga	W2	S3B	G5	Current	wooded lakes or ponds, or open swamps (for nesting) [breeding evidence only]	No
Bird	Gallinula galeata	Common Gallinule	W2	S3B,S2N	G5	Current	freshwater ponds and impoundments with much emergent vegetation [breeding evidence only]	No
Bird	Podilymbus podiceps	Pied-billed Grebe	W2	S3B,S5N	G5	Current	fresh to slightly brackish ponds and impoundments, usually with fringing vegetation [breeding evidence only]	No
Bird	Helmitheros vermivorum pop. 1	Worm-eating Warbler - Coastal Plain	W5	S3B	G5TNRQ	Current	nonriverine wet hardwoods, pocosins [breeding evidence only]	Yes
Butterfly	Amblyscirtes alternata	Dusky Roadside-Skipper	SR	S2	G3G4	Current	open pine woods, savannas; host plants -- unknown, but presumably grasses	Yes
Butterfly	Amblyscirtes reversa	Reversed Roadside-Skipper	SR	S3	G3	Current	flatwoods, savannas, pocosin borders, near cane; host plant -- cane (Arundinaria)	Yes
Butterfly	Calephelis virginiensis	Little Metalmark	SR	S2	G4	Current	savannas and pine flatwoods; host plants -- vanilla-plant (Trilisa odoratissima), thistles (Cirsium)	Yes
Butterfly	Callophrys hesseli	Hessel's Hairstreak	SR	S3	G3	Current	Atlantic white cedar swamps; host plant -- white cedar (Chamaecyparis thyoides)	No
Butterfly	Callophrys irus	Frosted Elfin	SR	S2	G3	Historical	open woods and borders, usually in dry situations; host plants -- lupines (Lupinus) and wild indigos (Baptisia)	Yes
Butterfly	Erynnis martialis	Mottled Duskywing	SR	S2	G3	Historical	upland woods and wooded edges; host plant -- New Jersey tea (Ceanothus americanus)	Yes
Butterfly	Euphyes berryi	Berry's Skipper	SR	S1S2	G2	Current	wet areas near ponds, canals, or marshes; host plants -- sedges (Carex)	Yes
Butterfly	Euphyes bimacula	Two-spotted Skipper	SR	S1S2	G4	Historical	wet savannas, bogs, sedgy areas near wet woods; host plants -- sedges (Carex)	Yes
Butterfly	Euphyes dukesi	Dukes' Skipper	SR	S1S2	G3G4	Current	ecotones of brackish or fresh marshes with swamps; host plants -- sedges (Carex)	No
Butterfly	Hesperia attalus	Dotted Skipper	SR	S1	G3G4	Historical	pine/oak sandhills, flatwoods, mainly in Sandhills; host plants -- grasses	No
Butterfly	Neonympha areolatus	Georgia Satyr	SR	S2	G3G4	Current	wet flatwoods and savannas, wet powerline clearings, other damp grassy places; host plants -- sedges	Yes
Butterfly	Amblyscirtes carolina	Carolina Roadside-Skipper	W2	S3S4	G3G4	Current	moist woods (mainly hardwoods) near cane; host plant -- cane (Arundinaria)	Yes
Butterfly	Megathymus yuccae	Yucca Giant-Skipper	W2	S3S4	G5	Historical	dunes, flatwoods, old fields, and other places near yuccas; host plants -- Yucca species	Yes
Butterfly	Satyrium kingi	King's Hairstreak	W2	S3S4	G3G4	Current	forests, often moist, usually near sweetleaf; host plant -- sweetleaf (Symplocos tinctoria)	Yes
Butterfly	Thorybes confusis (syn. Thorybe	Confused Cloudywing	W3	S3S4	G4	Current	dry woodland borders and openings, brushy fields; host plants -- legumes	Yes
Crustacean	Faxonius carolinensis	North Carolina Spiny Crayfish	SC	S3	G3	Current	rivers and streams in the Chowan, Roanoke, Neuse, and Tar drainages	Yes
Crustacean	Lynceus gracilicornis	Graceful Clam Shrimp	SC	S2	G5	Historical	temporary ponds, pools, and ditches	Yes
Crustacean	Procambarus medialis	Pamlico Crayfish	T	S3	G3	Current	sluggish streams and ditches in the Tar and Neuse drainages (endemic to North Carolina)	Yes
Dragonfly or Damselfly	Coryphaeschna ingens	Regal Darner	SR	S2?	G5	Historical	lakes and ponds	No
Dragonfly or Damselfly	Triacanthagyna trifida	Phantom Darner	SR	SH	G5	Historical	slow-flowing streams	Yes
Freshwater Bivalve	Elliptio marsupiobesa	Cape Fear Spike	SC	S2	G3Q	Historical	Cape Fear and Neuse drainages (endemic to North Carolina)	Yes
Freshwater Bivalve	Elliptio roanokensis	Roanoke Slabshell	SC	S3	G3	Current	Roanoke, Tar, Neuse, White Oak, Cape Fear, Lumber, and Yadkin-Pee Dee drainages	Yes
Freshwater Bivalve	Lampsilis radiata	Eastern Lampmussel	T	S3	G5	Historical	Chowan, Roanoke, Tar, Neuse, Cape Fear, Yadkin-Pee Dee drainages	Yes
Freshwater Fish	Notropis bifrenatus	Bridle Shiner	E	S1	G3	Current	streams in lower Neuse and Chowan drainages	Yes
Freshwater Fish	Enneacanthus chaetodon	Blackbanded Sunfish	SR	S3	G3G4	Historical	many drainages, particularly Lumber and Waccamaw	Yes

Freshwater Fish	Enneacanthus obesus	Banded Sunfish	SR	S3	G5	Current	most Atlantic drainages	Yes
Freshwater Fish	Notropis chalybaeus	Ironcolor Shiner	T	S2S3	G4	Current	coastal plain rivers and creeks	Yes
Freshwater Fish	Lepomis marginatus	Dollar Sunfish	W2	S3	G5	Current	streams and rivers of Sandhills and Coastal Plain	Yes
Freshwater Fish	Lepomis punctatus	Spotted Sunfish	W2	S3	G5	Current	most drainages in southern Coastal Plain	Yes
Freshwater or Terrestrial Gastropod	Promenetus exacuous	Sharp Sprite	W3	S2S3	G5	Current	ponds and streams	Yes
Freshwater or Terrestrial Gastropod	Vertigo teskeyae	Swamp Vertigo	W3	S3	G5	Current	margins of swamps and ponds	Yes
Lichen	Cladina evansii (syn. Cladonia e	Powder-puff Lichen	W7	S2	G3G5	Historical	sandhills (primarily near the coast) usually associated with Quercus geminata	Yes
Liverwort	Lejeunea bermudiana	A Liverwort	SR-P	S1	G3G4	Current	on marl outcrops or on decaying logs in blackwater swamps, or tree bases in swamps	Yes
Liverwort	Plagiochila raddiana	A Liverwort	SR-P	S1	G5	Current	on bark or moist rock in swamps and mountain gorges	Yes
Mammal	Myotis lucifugus	Little Brown Bat	E	S2	G3G4	Current	roosts in buildings (summer), in caves and mines (winter)	No
Mammal	Condylura cristata pop. 1	Star-nosed Mole - Coastal Plain popu	SC	S2	G5T2Q	Current	moist meadows, bogs, swamps, bottomlands	Yes
Mammal	Corynorhinus rafinesquii macro	Eastern Big-eared Bat	SC	S3	G3G4T3	Current	roosts in hollow trees, old buildings, and beneath bridges, usually near water	Yes
Mammal	Myotis austroriparius	Southeastern Bat	SC	S2	G4	Current	roosts in buildings, hollow trees; forages near water; mainly in the Coastal Plain	Yes
Mammal	Lasiurus cinereus	Hoary Bat	SR	S3S4	G3G4	Current	mostly mid elevation to high elevation forests, sparingly into the Piedmont (breeding season only)	No
Mammal	Synaptomys cooperi helaletes	Dismal Swamp Southern Bog Lemmi	SR	S2S3	G5T3	Historical	low pocosins, early succession wetlands	Yes
Mammal	Lasiurus seminolus	Seminole Bat	W2	S3	G5	Current	forages over open areas, often over water (summer); mainly in southern half of the state	Yes
Mammal	Sciurus niger	Eastern Fox Squirrel	W2	S3	G5	Current	open forests, mainly longleaf pine/scrub oak	Yes
Mammal	Neogale frenata (syn. Mustela fr	Long-tailed Weasel	W3	S3	G5	Current	forests, brushy areas	Yes
Moss	Brachythecium rotaeanum	Rota's Feather Moss	SR-D	S1	G5	Historical	on bark or rock in cove forests	No
Moss	Tortula plinthobia	A Chain-teeth Moss	SR-O	S1?	G4G5	Historical	calcareous rocks, concrete or mortared walls	No
Moss	Sphagnum torreyanum	Giant Peatmoss	SR-P	S1	G5	Current	beaver ponds and old mill ponds on blackwater creeks	No
Moss	Sphagnum fitzgeraldii	Fitzgerald's Peatmoss	W1	S2S3	G3	Current	pocosins and savannas	Yes
Moss	Sphagnum henryense	Peatmoss	W1	S2S3	G4?	Current	bogs	No
Moss	Atrichum cylindricum	A Catherinea Moss	W7	S2?	G5	Current	moist soils of ditches and stream banks in bottomlands and swamp forests	Yes
Moss	Fissidens fontanus	Water Pocket Moss	W7	S2?	G5	Historical	attached to various substrata in stagnant and flowing water, and in coastal estuaries	Yes
Moss	Sphagnum cribrosum	Florida Peatmoss	W7	S2?	G3	Current	in blackwater streams; ditches	Yes
Moss	Thuidium alleniorum (syn. Thuic	Fernmoss	W7	S2?	G3G5	Historical	on soil, logs, exposed roots, and tree bases in swamps, often just above water line	Yes
Moth	Acronicta perblanda	Cypress Daggermoth	SR	SH	G3G4	Historical	cypress swamps	No
Moth	Agrotis buchholzi	Buchholz's Dart Moth	SR	S2S3	G2	Current	flatwoods with pyxie-moss (Pyxidanthera) (endemic to North Carolina)	No
Moth	Exyra ridingsii	a Pitcher-plant Moth	SR	S2	G2G4	Current	wetlands with yellow pitcher-plants	No
Moth	Meropleon diversicolor sullivan	an Owlet Moth	SR	S1S2	G5T1T3	Current	coastal marshes	Yes
Moth	Pyreferra ceromatica	Annointed Sallow Moth	SR	S1S2	GU	Current	flatwoods and pocosins, probably with Fothergilla	No
Moth	Gondysia telma	a Noctuid Moth	W3	SU	GNR	Current	swamp forests	Yes
Moth	Lithophane lemmeri	Lemmer's Pinion	W3	S1S3	G3G4	Current	cedar glades and Atlantic white cedar forests	No
Natural Community	Basic Mesic Forest (Coastal Plain Subtype)			S2	G4	Current	null	N/A
Natural Community	Bay Forest			S3	G4	Current	null	N/A
Natural Community	Brownwater Bottomland Hardwoods (Swamp Transition Subtype)			S3	G3G4	Current	null	N/A
Natural Community	Brownwater Levee Forest (Low Levee Subtype)			S3S4	G3G4	Current	null	N/A
Natural Community	Coastal Fringe Evergreen Forest (Typic Subtype)			S2	G2	Current	null	N/A
Natural Community	Coastal Plain Cliff			S1	G2?	Current	null	N/A
Natural Community	Coastal Plain Marl Outcrop (Bluff Subtype)			S1	G1?	Current	null	N/A
Natural Community	Coastal Plain Semipermanent Impoundment (Cypress-Gum Subtype)			S4	G4G5	Current	null	N/A
Natural Community	Coastal Plain Semipermanent Impoundment (Typic Marsh Subtype)			S4	G4?	Current	null	N/A
Natural Community	Coastal Plain Small Stream Swamp			S4	G4?	Current	null	N/A
Natural Community	Cypress--Gum Swamp (Blackwater Subtype)			S4	G4?	Current	null	N/A
Natural Community	Cypress--Gum Swamp (Brownwater Subtype)			S4	G5?	Current	null	N/A
Natural Community	Dry Oak--Hickory Forest (Coastal Plain Subtype)			S3	G4?	Current	null	N/A
Natural Community	Dry-Mesic Oak--Hickory Forest (Coastal Plain Subtype)			S3	G3G4	Current	null	N/A
Natural Community	Estuarine Fringe Pine Forest (Loblolly Pine Subtype)			S3	G3	Current	null	N/A
Natural Community	High Pocosin (Evergreen Subtype)			S3S4	G3	Current	null	N/A
Natural Community	Low Pocosin (Titi Subtype)			S2S3	G2G3	Current	null	N/A

Natural Community	Mesic Mixed Hardwood Forest (Coastal Plain Subtype)			S3	G3	Current	null	N/A
Natural Community	Mesic Pine Savanna (Coastal Plain Subtype)			S2	G2G3	Current	null	N/A
Natural Community	Natural Lake Shoreline Marsh (Typic Subtype)			S1	G1	Current	null	N/A
Natural Community	Natural Lake Shoreline Swamp (Cypress Subtype)			S2	G3?	Current	null	N/A
Natural Community	Natural Lake Shoreline Swamp (Sweetgum Subtype)			S1	G1	Current	null	N/A
Natural Community	Nonriverine Swamp Forest (Mixed Subtype)			S3	G3	Current	null	N/A
Natural Community	Nonriverine Swamp Forest (Sweetgum Subtype)			S2	G2?	Current	null	N/A
Natural Community	Nonriverine Wet Hardwood Forest (Oak Flat Subtype)			S1	G2	Current	null	N/A
Natural Community	Peatland Atlantic White Cedar Forest			S1	G2	Current	null	N/A
Natural Community	Pine/Scrub Oak Sandhill (Blackjack Subtype)			S3	G3	Current	null	N/A
Natural Community	Pine/Scrub Oak Sandhill (Coastal Fringe Subtype)			S2	G2	Current	null	N/A
Natural Community	Pine/Scrub Oak Sandhill (Mixed Oak Subtype)			S3	G3?	Current	null	N/A
Natural Community	Pocosin Opening (Sedge-Fern Subtype)			S1S2	G1G2	Current	null	N/A
Natural Community	Pond Pine Woodland (Typic Subtype)			S3	G3	Current	null	N/A
Natural Community	Sand and Mud Bar (Brownwater Subtype)			S2S3	GNR	Current	null	N/A
Natural Community	Small Depression Drawdown Meadow (Boggy Pool Subtype)			S1	G2?	Current	null	N/A
Natural Community	Small Depression Pocosin (Typic Subtype)			S2S3	G2G3	Current	null	N/A
Natural Community	Small Depression Shrub Border			S3	G3?	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Broadleaf Pondlily Subtype)			S2	G4G5	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Cattail Subtype)			S3	GNR	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Giant Cordgrass Subtype)			S4	GNR	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Mixed Freshwater Subtype)			S1	G2?	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Sawgrass Subtype)			S4	G4?	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Shrub Subtype)			S4	G4	Current	null	N/A
Natural Community	Tidal Freshwater Marsh (Southern Wild Rice Subtype)			S4	G3G5	Current	null	N/A
Natural Community	Tidal Swamp (Cypress--Gum Subtype)			S4	G3G4	Current	null	N/A
Natural Community	Vernal Pool			S2S3	G2?	Current	null	N/A
Natural Community	Wet Loamy Pine Savanna			S1	G1	Current	null	N/A
Natural Community	Wet Pine Flatwoods (Typic Subtype)			S3	G3	Current	null	N/A
Natural Community	Xeric Sandhill Scrub (Coastal Fringe Subtype)			S2	G2?	Current	null	N/A
Natural Community	Xeric Sandhill Scrub (Typic Subtype)			S3S4	G3?	Current	null	N/A
Reptile	Crotalus adamanteus	Eastern Diamondback Rattlesnake	E	S1	G3	Current	pine flatwoods, savannas, pine-oak sandhills	Yes
Reptile	Coluber flagellum flagellum	Eastern Coachwhip	SC	S2	G5T5	Historical	dry and sandy woods, mainly in pine/oak sandhills	Yes
Reptile	Crotalus horridus	Timber Rattlesnake	SC	S3	G4	Current	wetland forests in the Coastal Plain; rocky, upland forests elsewhere	Yes
Reptile	Deirochelys reticularia reticular	Eastern Chicken Turtle	SC	S2S3	G5T5	Historical	quiet waters of ponds, ditches, and sluggish streams	Yes
Reptile	Malaclemys terrapin	Diamondback Terrapin	SC	S3	G4	Historical	salt or brackish marshes, estuaries	No
Reptile	Seminatrix pygaea paludis	Carolina Swamp Snake	SC	S2	G5T4	Current	in lush vegetation of ponds, ditches, or sluggish streams	Yes
Reptile	Sistrurus miliarius miliarius	Carolina Pigmy Rattlesnake	SC	S2	G5T4T5	Historical	pine flatwoods, pine/oak sandhills, other pine/oak forests	Yes
Reptile	Farancia erytrogramma	Rainbow Snake	SR	S3	G4	Current	swamps, lakes, rivers, and other sluggish water	Yes
Reptile	Liodytes rigida	Glossy Crayfish Snake	SR	S2	G5	Current	marshes, cypress ponds, other wetlands	Yes
Reptile	Heterodon simus	Southern Hognose Snake	T	S1S2	G2	Historical	sandy woods, particularly pine-oak sandhills	Yes
Reptile	Clemmys guttata	Spotted Turtle	W1	S4	G5	Current	shallow water of pools, marshes, wet pastures and other smaller wetlands	Yes
Reptile	Rhadinaea flavilata	Pine Woods Snake	W2	S3	G4	Current	pine flatwoods and other damp woodlands	Yes
Reptile	Virginia valeriae	Smooth Earthsnake	W2	S3	G5	Current	deciduous or mixed woods, usually in mesic soils	Yes
Reptile	Kinosternon baurii	Striped Mud Turtle	W3	S3S4	G4G5	Current	various shallow wet places; ponds, pools, ditches	Yes
Sawfly, Wasp, Bee, or Ant	Megachile integra	a leafcutter bee	SR	SH	G2G3	Historical	no habitat preferences currently known (Bladen, Dare, Harnett, Moore, New Hanover, Robeson)	No
Sawfly, Wasp, Bee, or Ant	Megachile oenotherae	a leafcutter bee	SR	SH	G1G3	Historical	dunes, xeric pine savannas, disturbed areas (Craven, Moore, Wake)	Yes
Sawfly, Wasp, Bee, or Ant	Bombus fraternus	Southern Plains Bumble Bee	W3	S2S3	G3G4	Current	prairie remnants and urban gardens	No
True Bug	Chlorochroa dismalia	Dismal Swamp Green Stink Bug	SR	S1?	G1G3	Historical	canebrakes	Yes
Vascular Plant	Asplenium heteroresiliens	Carolina Spleenwort	E	S2	G2	Current	coquina limestone outcrops	No
Vascular Plant	Crocanthemum carolinianum	Carolina Sunrose	E	S1	G4	Historical	sandhills, pinelands, dry savannas	Yes

Vascular Plant	Cystopteris tennesseensis	Tennessee Bladder-fern	E	S1	G5	Historical	calcareous rock outcrops	No
Vascular Plant	Dichanthelium spretum	Eaton's Witch Grass	E	S1	G5	Current	wet sands and peats of bogs, savannas, meadows, and shores	Yes
Vascular Plant	Ludwigia ravenii	Raven's Seedbox	E	S1	G1G2	Current	savannas, swamps, marshes, wet open places	Yes
Vascular Plant	Ludwigia sphaerocarpa	Globe-fruit Seedbox	E	S1	G5	Current	bogs, pools, and lake shores	No
Vascular Plant	Myriophyllum laxum	Loose Water-milfoil	E	S2	G3	Historical	limesink ponds, waters of natural lakes	No
Vascular Plant	Paspalum dissectum	Mudbank Crown Grass	E	S2	G4?	Current	mudflats, other open wet areas	No
Vascular Plant	Platanthera nivea	Snowy Orchid	E	SH	G3G4	Historical	wet savannas	Yes
Vascular Plant	Sabulina paludicola	Godfrey's Sandwort	E	S1	G1	Historical	tidal freshwater marshes	No
Vascular Plant	Sagittaria weatherbiana	Grassleaf Arrowhead	E	S2	G3G4	Current	fresh to slightly brackish marshes, streams, swamps, and pond margins	Yes
Vascular Plant	Cardamine longii	Long's Bittercress	SC-V	S2	G3?	Historical	tidal marshes and tidal cypress-gum forests	No
Vascular Plant	Cirsium lecontei	Leconte's Thistle	SC-V	S2	G3	Current	savannas	Yes
Vascular Plant	Cyperus virens	Green Flatsedge	SC-V	S1	G5	Current	and ditches	Yes
Vascular Plant	Eleocharis robbinsii	Robbins' Spikerush	SC-V	S2S3	G4G5	Current	limesink ponds, clay-based Carolina bays, peat-burn lakes, millponds, beaver ponds, artificial lakes	No
Vascular Plant	Eriocaulon aquaticum	Seven-angled Pipewort	SC-V	S2	G5	Historical	blackwater creeks, natural lakes, tidal freshwater marshes	No
Vascular Plant	Litsea aestivalis	Pondspice	SC-V	S2S3	G3?	Current	limesink ponds, other pools	No
Vascular Plant	Malaxis spicata	Florida Adder's-mouth	SC-V	S1	G4?	Current	maritime swamp forests, calcareous but mucky outer coastal plain swamps	No
Vascular Plant	Polygala hookeri	Hooker's Milkwort	SC-V	S2S3	G3	Current	savannas	Yes
Vascular Plant	Potamogeton amplifolius	Largeleaf Pondweed	SR-D	S1	G5	Historical	submersed in blackwater streams	No
Vascular Plant	Potamogeton confervoides	Conferva Pondweed	SR-D	S2	G5	Current	beaverponds and old millponds on blackwater creeks	No
Vascular Plant	Andropogon mohrii	Bog Bluestem	SR-O	S2	G4?	Current	wet savannas	Yes
Vascular Plant	Eurybia spectabilis	Showy Aster	SR-O	S1S2	G5	Current	pine barrens and woodland borders	Yes
Vascular Plant	Phanopyrum gymnocarpon	Swamp Panic Grass	SR-O	S2	G5	Current	tidal and blackwater cypress-gum swamps	No
Vascular Plant	Bidens trichosperma	Crowned Beggar-ticks	SR-P	S1	G5?	Historical	brackish marshes	No
Vascular Plant	Bolboschoenus novae-angliae	New England Bulrush	SR-P	SH	G3	Historical	fresh to brackish (oligohaline) tidal marshes, ditches	Yes
Vascular Plant	Carex crus-corvi	Crowfoot Sedge	SR-P	S1	G5	Current	swamp forests	Yes
Vascular Plant	Carex lupuliformis	False Hop Sedge	SR-P	S1	G4	Historical	moist bottomlands, especially in calcareous or mafic areas	Yes
Vascular Plant	Coreopsis palustris	Beadle's Coreopsis	SR-P	S1S2	G3G4Q	Historical	swamp forests and swamp edges	Yes
Vascular Plant	Elymus halophilus	Terrell Grass	SR-P	S1	G5T5	Current	brackish marshes, maritime forests and hammocks	No
Vascular Plant	Hypoxis juncea	Fringed Yellow Stargrass	SR-P	S1	G4?	Current	savannas	No
Vascular Plant	Leersia lenticularis	Catchfly Cutgrass	SR-P	S2?	G5	Current	low woods	Yes
Vascular Plant	Ludwigia alata	Winged Seedbox	SR-P	S2	G3G5	Current	interdune ponds, marshes	No
Vascular Plant	Oplismenus setarius	Shortleaf Basket Grass	SR-P	S1	G5T5	Current	maritime forests, bottomlands	No
Vascular Plant	Peltandra sagittifolia	Spoonflower	SR-P	S2S3	G3G4	Current	pocosins, other wet, peaty sites	No
Vascular Plant	Quercus austrina	Bluff Oak	SR-P	S1	G4?	Current	bluff and bottomland forests over circumneutral soil	No
Vascular Plant	Rhynchospora alba	Northern White Beaksedge	SR-P	S2	G5	Current	fens, bogs, pocosin openings, limesink ponds	No
Vascular Plant	Rhynchospora galeana	Short-bristled Beaksedge	SR-P	S2S3	G3?	Current	savannas	Yes
Vascular Plant	Sagittaria filiformis	Water Arrowhead	SR-P	SH	G4G5	Historical	blackwater streams, rivers, and lakes	No
Vascular Plant	Schoenoplectus acutus var. acu	Hardstem Bulrush	SR-P	SH	G5T5	Historical	natural lakes	No
Vascular Plant	Schoenoplectus etuberculatus	Canby's Bulrush	SR-P	S3	G3G4	Current	blackwater creeks	No
Vascular Plant	Scleria verticillata	Savanna Nutrush	SR-P	S2	G5	Current	calcareous wet savannas, maritime wet grasslands influenced by shell deposits	No
Vascular Plant	Spiranthes eatonii	Eaton's Ladies'-tresses	SR-P	S2	G3Q	Current	pine savannas and pine-oak sandhills	Yes
Vascular Plant	Torreyochloa pallida	Pale Mannagrass	SR-P	S1	G5	Current	Bogs, mucky wetlands such as old beaver-ponds, pools in cypress swamps, drawdown shores of natural ponds	No
Vascular Plant	Ludwigia brevipes	Long Beach Seedbox	SR-T	S1	G2	Historical	natural lake shores, blackwater stream shores and impoundments, and freshwater interdune ponds	No
Vascular Plant	Lythrum lanceolatum	Southern Winged-loosestrife	SR-T	S1	G5T5	Current	marshes and low, wet places	Yes
Vascular Plant	Pycnanthemum setosum	Awned Mountain-mint	SR-T	S2	G4	Current	blackwater swamps	No
Vascular Plant	Agalinis virgata	Branched Gerardia	T	S2	G3G4Q	Current	savannas and depression pond shores	Yes
Vascular Plant	Dionaea muscipula	Venus Flytrap	T	S2	G2	Current	savannas, seepage bogs, pocosin edges	Yes
Vascular Plant	Eleocharis parvula	Little-spike Spikerush	T	S1	G5	Historical	brackish and fresh marshes	No
Vascular Plant	Platanthera integra	Yellow Fringeless Orchid	T	S1	G3G4	Current	savannas	Yes
Vascular Plant	Ponthieva racemosa	Shadow-witch	T	S2	G5	Current	blackwater forests and swamps, especially over marl	No
Vascular Plant	Scirpus lineatus	Drooping Bulrush	T	S2	G4	Current	low rich woods over marl	No

Vascular Plant	Solidago verna	Spring-flowering Goldenrod	T	S3	G3	Current	mesic to moist pinelands, pocosin ecotones	Yes
Vascular Plant	Solidago villosicarpa	Coastal Goldenrod	T	S1	G2	Current	edges and openings in maritime upland forests	No
Vascular Plant	Tridens chapmanii	Chapman's Redtop	T	S1S2	G5T3	Current	dry pine and oak woods, sandy roadsides	Yes
Vascular Plant	Utricularia olivacea	Dwarf Bladderwort	T	S2	G4	Historical	limesink ponds, beaver ponds	No
Vascular Plant	Veronica americana	American Speedwell	T	S1	G5	Historical	seeps, bogs	No
Vascular Plant	Agalinis aphylla	Scale-leaf Gerardia	W1	S3	G3G4	Current	wet savannas and Sandhills streamhead pocosin ecotones	No
Vascular Plant	Agalinis linifolia	Flaxleaf Gerardia	W1	S3	G4?	Current	savannas, clay-based Carolina bays, depression ponds, and other wet, open habitats	Yes
Vascular Plant	Agalinis obtusifolia	Blunt-leaf False-foxglove	W1	S3	G4	Current	savannas, seepage bogs, and wet ecotones	Yes
Vascular Plant	Amphicarpum amphicarpon	Pinebarrens Goober Grass	W1	S3	G3G4	Current	pine savannas, pocosins, shallow peat burns in pocosin/savanna ecotones	Yes
Vascular Plant	Anthenantia rufa	Purple Silkyscale	W1	S2	G5	Current	savannas	Yes
Vascular Plant	Asclepias longifolia	Longleaf Milkweed	W1	S2S3	G4G5	Current	savannas and sandhill seeps	Yes
Vascular Plant	Bartonia paniculata ssp. paniculu	Twining Screwstem	W1	S2S3	G5T5	Current	bogs, wet savannas, sandhill seeps, other open wet areas	Yes
Vascular Plant	Calamovilfa brevipilis	Pinebarren Sandreed	W1	S3	G4	Current	savannas, sandhill seeps	Yes
Vascular Plant	Carex chapmanii	Chapman's Sedge	W1	S3	G3	Current	moist bottomlands and slopes, perhaps associated with marl	Yes
Vascular Plant	Carex hyalinolepis	Shoreline Sedge	W1	S2	G4G5	Current	marshes	Yes
Vascular Plant	Carex mitchelliana	Mitchell's Sedge	W1	S2	G4	Current	swampy woodlands and forests	Yes
Vascular Plant	Cleistesiopsis bifaria	Small Spreading Pogonia	W1	S2	G3G4	Current	savannas, dry meadows	Yes
Vascular Plant	Crataegus aestivalis	May Hawthorn	W1	S2	G5	Historical	swamp forests	Yes
Vascular Plant	Dichanthelium dichotomum var.	Roanoke Witch Grass	W1	S2	G4?	Historical	savannas, open swampy woods, wet peaty meadows	Yes
Vascular Plant	Dryopteris ludoviciana	Southern Woodfern	W1	S2	G5	Current	acid swamps	No
Vascular Plant	Eleocharis equisetoides	Horsetail Spikerush	W1	S3	G4	Historical	limesink ponds, lakes, borrow pits, ditches	No
Vascular Plant	Lysimachia loomisii	Loomis's Loosestrife	W1	S3	G3?	Current	savannas and pocosins	No
Vascular Plant	Neottia bifolia	Southern Twayblade	W1	S3	G4	Historical	moist hardwood forest, swamps, wet woods with acidic soils	Yes
Vascular Plant	Orbexilum lupinellus (syn. Orbe	Lupine Scurfpea	W1	S3	G3G4	Current	sandhills	No
Vascular Plant	Parthenium integrifolium var. m	Mabry's Wild Quinine	W1	S3	G5T3	Historical	savannas, pocosin edges, upland pine-oak woods	No
Vascular Plant	Paspalum bifidum	Pitchfork Crown Grass	W1	S3	G5	Current	sandhills and savannas	Yes
Vascular Plant	Paspalum praecox	Early Crown Grass	W1	S2S3	G4	Current	limesink ponds and savannas	Yes
Vascular Plant	Rhynchospora careyana	Carey's Beaksedge	W1	S2	G4?Q	Current	limesink ponds, clay-based bays	No
Vascular Plant	Rhynchospora nitens	Shortbeak Beaksedge	W1	S3	G4?	Current	savannas, limesinks, other wet open places	Yes
Vascular Plant	Rhynchospora oligantha	Feather-bristle Beaksedge	W1	S3	G4	Current	savannas, seepage bogs	Yes
Vascular Plant	Rhynchospora pallida	Pale Beaksedge	W1	S3	G3	Historical	savannas, sandhill seeps, and pocosins	Yes
Vascular Plant	Rhynchospora scirpoides	Long-beak Beaksedge	W1	S3	G4	Current	beaver ponds, limesink ponds, wet savannas	Yes
Vascular Plant	Sabatia dodecandra	Large Marsh Pink	W1	S2S3	G5?	Current	tidal, brackish, and freshwater marshes	No
Vascular Plant	Sagittaria engelmanniana	Engelmann's Arrowhead	W1	S2	G5?	Historical	mostly blackwater streams and bogs	No
Vascular Plant	Scleria georgiana	Georgia Nutrush	W1	S3	G4	Current	savannas	Yes
Vascular Plant	Sideroxylon lycioides	Buckthorn Bumelia	W1	S2S3	G5	Historical	maritime forests, bluffs or forests over calcareous or mafic rocks	No
Vascular Plant	Solidago pulchra	Carolina Goldenrod	W1	S3	G3	Current	savannas	Yes
Vascular Plant	Syngonanthus flavidulus	Yellow Hatpins	W1	S3	G5	Historical	ditches, pocosin ecotones, savannas	Yes
Vascular Plant	Xyris brevifolia	Shortleaf Yellow-eyed-grass	W1	S3	G4G5	Current	savannas, other low wet areas	Yes
Vascular Plant	Xyris smalliana	Small's Yellow-eyed-grass	W1	S3	G4G5	Historical	pineland pools, limesink ponds, shores	No
Vascular Plant	Andropogon virginicus var. deci	Deceptive Bluestem	W7	S1S2	G5T4	Historical	pinelands and disturbed areas	Yes
Vascular Plant	Carex gholsonii	Gholson's Sedge	W7	S1S2	G4G5	Current	along creeks and springs	No
Vascular Plant	Carex granularis	Limestone Meadow Sedge	W7	S1?	G5	Historical	piedmont bottomlands, coastal plain marl forests	No
Vascular Plant	Cleistesiopsis oricamporum	Small Coastal Plain Spreading Pogon	W7	S2S3	G3?	Current	Savannas	Yes
Vascular Plant	Elodea canadensis	Canada Waterweed	W7	S1?	G5	Historical	lakes, ponds, and stagnant waters of streams	Yes
Vascular Plant	Monotropa brittonii	Southern Ghost-Pipe	W7	S1S2	GNR	Current	complete distribution and habitat in NC unknown	N/A
Vascular Plant	Nelumbo lutea	American Lotus	W7	S2	G4	Current	ponds, slow streams, natural lakes, estuarine rivers	Yes
Vascular Plant	Ophioglossum crotalophoroide	Bulbous Adder's-tongue	W7	S1?	G5	Historical	moist ditchbanks and grassy roadside flats	Yes
Vascular Plant	Persea borbonia	Upland Red Bay	W7	S2	G5	Current	sandy upland soils in maritime forests	No
Vascular Plant	Platanthera blephariglottis	Small White-fringed Orchid	W7	S2	G5T4T5	Current	bogs or depressions	No
Vascular Plant	Vaccinium virgatum	Small-flower Blueberry	W7	S1S2	G4	Current	pocosins, blackwater swamps, mesic pine flatwoods, sandhill seeps	Yes

Vascular Plant	Xyris iridifolia	Iris-leaf Yellow-eyed-grass	W7	S2	G4G5T4T5	Current	limesink ponds, pineland pools, marshes	Yes
Vascular Plant	Zannichellia palustris	Horned Pondweed	W7	S2?	G5	Current	calcareous or brackish waters of pools and estuaries	No
Vascular Plant	Zizania aquatica var. aquatica	Indian Wild Rice	W7	S2	G5T5	Current	freshwater marshes	Yes

Appendix G

Wildlife Hazards Report

(Executive Summary)

Wildlife Hazard Assessment
of the
Coastal Carolina Regional Airfield
New Bern, NC
(July 2021 - June2022)

Submitted by:

United States Department of Agriculture
Animal and Plant Health Inspection Service
Wildlife Services
403 Government Circle Suite 2
Greenville Nc 27858

Written by:

Brandon D Maples, Wildlife Specialist, North Carolina

Work Performance per Cooperative Service Agreement No. 23-7237-5561-RA
Project was monitored by Aaron Bowden, District Supervisor, North Carolina

Executive Summary

The United States Department of Agriculture (USDA) Wildlife Services (WS) program developed this Wildlife Hazard Assessment (WHA) in cooperation with the Coastal Carolina Regional Airport (EWN) to determine the relative abundance and patterns of use by wildlife and help focus hazardous wildlife management efforts on those species most likely to cause problems at the EWN airfield. The WHA also serves as a foundation for revising the EWN Wildlife Hazard Management Plan (WHMP).

The WHA had four main objectives:

1. Identify species of wildlife that present existing, or potential, hazards on the EWN airfield.
2. Identify attractions for and habitat preferences of hazardous wildlife in addition to land-use practices and environmental conditions at the EWN airfield and the surrounding areas that may contribute to wildlife hazards to aircraft operations.
3. Determine parameters including time of day, seasonal abundance, local distribution, and movements of wildlife.
4. Provide management recommendations for reducing observed and potential wildlife hazards at the EWN airfield.

The WHA places a particular emphasis on identification and abatement of wildlife hazards within the airport environment. Wildlife attractants within 5 miles of the airport are also addressed, since they may attract wildlife in a manner that jeopardizes safety of air traffic operating into and out of the EWN airfield.

Several habitats on and around the EWN airfield attract wildlife. On-site hazardous wildlife attractants included elevated perches, standing water and woodlands. Off-site attractants within a five-mile radius of the airport included the New Bern wastewater treatment facility, Lake Clermont, Union Point Park (Neuse and Trent River intersection), Creekside Park, and the Food Lion shopping center. Blackbirds, Columbidae's, gulls, grassland birds, and waterfowl were the most frequently documented hazardous wildlife at the airfield during this WHA.

Appendix H

GeoEnvironmental Phase 1 Report

(Summary Pages)

10841 S Ridgeview Road
Olathe, KS 66061
P (800) 593-7777
F (913) 599-0547
Terracon.com

Memo

Date: July 10,2024

Project: NCDOT Runway 4-22 EWN
200 Terminal Road
New Bern, Craven County, NC
NCDOT Division 2

To: Chad Rogers
Parrish and Partners, LLC

From: Terracon Consultants

Subject: **GeoEnvironmental Phase I Report**

Terracon has completed the attached GeoEnvironmental Phase I. Please contact the undersigned at (704) 594-8912 if you have questions concerning this project.

Sincerely,
Terracon Consultants

Sarah Fernandez
Environmental Scientist

M. Neal McElveen, P.E.
Principal/Senior Engineer

GeoEnvironmental Phase I Report

Terracon Consultants GeoEnvironmental staff conducted a Phase I for State Transportation Improvement Program (STIP) No. B-3186/B-5898, which involves the improvements adjacent to Highway 70 E and along Williams Road and the Coastal Carolina Regional Airport in Craven County, North Carolina. Williams Road bisects the site and intersects with Scott Street/Airline Drive. The portion of Dellwood Road within the Study Area extends west to east prior to passing through Highway 70 E. A map showing the airport property boundary and Study Area are shown on ***Figure 1 and Figure 2,*** respectively***.***

Note that this Phase I was conducted in accordance with the scope of work for North Carolina Department of Transportation (NCDOT) GeoEnvironmental Phase Is. As such, it is similar to an ASTM 1527-21 compliant Phase I but does not qualify the user for "All Appropriate Inquiry" protections.

Purpose

The main purpose of this investigation is to identify properties within the Study Area that are or may be contaminated and may therefore result in increased project costs and future liability if acquired by the NCDOT. Hazardous material impacts may include, but are not limited to, active and abandoned underground storage tank (UST) sites, hazardous waste sites, regulated landfills, and unregulated dumpsites.

Techniques/Methodologies

The Phase I for the NCDOT Runway 4-22 EWN study area consisted of an online review of applicable North Carolina Department of Environmental Quality (NCDEQ) databases, Environmental Data Resources Inc. (EDR)-supplied databases, and a field reconnaissance.

Information obtained from the reviewed databases and field reconnaissance were used to assign a risk ranking to sites of potential concern. General criteria used by Terracon GeoEnvironmental staff in assigning risk are summarized in ***Table 1*** below.

Table 1 - Risk ranking criteria

Risk Ranking	Criteria
Low	Low risk sites may have minimal impact on the cost and schedule of the project. This designation generally applies to petroleum and automotive repair sites within the Study Area, regardless of status of release(s).

Moderate	Moderate risk sites may have moderate impact to the cost and schedule of the project redevelopment. This designation generally applies to dry cleaning sites within or hydrogeologically up-gradient of the Study Area that are not listed in the NCDEQ Dry-Cleaning Solvent Cleanup Act (DSCA) Program and other sites impacted by constituents deemed by the Environmental Professional as more difficult to handle/remediate. Sites with Land Use Restrictions intended to limit ground disturbance are also included in this designation.
High	High risk sites may have a high impact to the cost and schedule. High risk sites may include active and former landfill sites, closed hazardous waste landfill sites, federal brownfields sites, DSCA Program sites, and Superfund sites. These sites pose "high risk" to a project if they are located within a short distance from the Study Area, within the Study Area, or have a documented history of groundwater or soil contamination that is upgradient from the Study Area.

Findings

Sites of potential environmental concern were identified within the Study Area and adjoining properties during this Phase I. These sites are summarized in ***Table 2*** below and discussed in more detail on the following pages. Low risk sites were identified during the database review but were not elaborated on in the table or the discussion below due to the unlikelihood of affecting the project.

Table 2 - Sites of potential environmental concern

Site No.	Site Address	Site Name	NCDEQ Program ID and Status (if applicable)	Potential Concern	Distance from Study Area (mi.)	Risk
1	200 Terminal Drive	Coastal Carolina Regional Airport, parking areas & associated facilities	Open UST (LUST ID: NC10021, Object ID: 290752, Facility ID: NC00-0-0000011981)	Open UST and active stormwater permits that drain into Scotts Creek.	.254	Medium
2	917 Highway 70 E,	Josh Mills Pontiac- GMC	Current UST on site (Facility ID:	Most recent inspection in December of 2023	.098	High

	New Bern, NC 28560		00-0-0000011569)	indicated that the UST Inspection failed due to failure to provide corrosive protection to an existing tank system, failure to permanently close a substandard UST, and failure to complete primary operating training.		
3	801 Williams Road, New Bern, NC 28562	New Bern Mercury Spill/private residence	NA	Potential mercury release at a private residence; unknown if groundwater and/or soil was impacted; source also unknown.	.016	High
4	1303 Highway 70 E, New Bern, NC 28560*	Adolph's Autobody (Currently American Coastal Collision Body Shop/ Caliber Collision Center-New Bern 1573)	Open UST (LUST ID: NC20622)	An underground leak was reported in May of 1995 from a commercial UST; no documents to show cleanup.	.018	Medium
5	1001 Highway 70 E, New Bern, NC 28560	James City Fuel Market; Fisher Stores Inc.; B&H Construction Company Inc.	4 current USTs (Facility ID: 00-0-0000033211)	Four current USTs on site; B&H Construction Company Inc. is listed in the RCRA NONGEN/NLR as a producer of ignitable waste, but no violations have been reported.	.081	High

6	752 Williams Road, New Bern, NC 28560	Former Shell gas station	N/A	It can be assumed that USTs remain on site from former gas station activities.	About .05	High
7	795 Williams Road, New Bern, NC 28560	A-1 Fire & Safety Co./potential former auto repair shop	N/A	It is possible that contamination remains on site from former auto repair activities.	About .05	Medium
8	807 Williams Road, New Bern, NC 28560	Orphan Leaking Underground Storage Tank (LUST)	Incident ID #: 48822	A LUST incident was reported in January of 2023. No wells were reported to be impacted.	0.017	Medium
9	785 Williams Road, New Bern, NC 28560	Craven Outboard Repair (boat repair shop)	N/A	It can be assumed that oil staining/spills have been associated with this site.	About .05	Medium
10	935 Hwy 70 E, New Bern, NC 28560	Former drycleaner and potential former junkyard and/or automotive dealership	N/A	The drycleaning facility and potential former junkyard are no longer active, but it is possible that drycleaning chemicals were once on site, along with contamination associated with discarded auto parts.	About .15	Medium

* Mapped Incorrectly on Environmental Data Resources database as 501 Highway 70 E, New Bern, NC 28562

UST/AST Facilities

Based on Terracon's facility review, four sites with former USTs were located within the Study Area. Three of the sites were listed in the UST database within the Study Area, and one site was listed as an orphan facility. Any incidents associated with these facilities are listed as closed. As such, the four former UST facilities are considered **Low Risk** to the Study Area. Low risk UST/AST facilities were identified during the database review but were not elaborated on in the table or the discussion below due to the unlikelihood of affecting the project.

Hazardous Waste Sites / Brownfields

There were no current or former hazardous waste sites or brownfields identified in NCDEQ databases or during the site reconnaissance.

Landfills

There were no current or former landfill sites identified in NCDEQ databases or during the site reconnaissance.

Dry Cleaners

Cowell Cleaners (965 Highway 70 E) is a former drycleaning facility that was last listed in city directories in 2010. No violations were reported.

Other GeoEnvironmental Concerns Identified During Field Reconnaissance

Terracon's site reconnaissance was divided into five sections. **Section 1** was started on a portion of the western boundary, continued through the middle of the study area, backtracked through the middle and finished at Aviation Drive meets Williams Drive. **Section 2** was started at the midway point along the western section of the study area, went north and then east alongside Williams Road, north along railroad tracks, and back west through a residential neighborhood. **Section 2** finished off Williams Drive, near Keith Circle. **Section 3** crossed through the north/northeastern section of the site, around the adjacent strip mall shopping center and alongside Highway 70 East. **Section 4** started in the approximately middle of the site and went east along Highway 70 East, going south and ending near B&J Seafood, LLC. **Section 5** included both sides of Glen Drive, north of the study area.

Observations of the Study Area and surrounding properties included two former gas stations (752 Williams Rd and 1001 US 70 E), septic tanks (707 Frontier Ln), a potential former auto repair shop (795 Williams Rd), a boat repair shop (785 Williams Rd), Meadows Cemetery (Brown Dr), a Food Lion shopping center (935 Hwy 70 E), and a Bojangles restaurant (931 Hwy 70 E). No monitoring wells, tank ports, vent pipes, gasoline pumps, hydraulic lifts, or other objects of concern were observed. However, it can be assumed that the former gas stations may still have underground storage tanks on their properties. Additionally, based on aerials reviewed, the Food Lion shopping center appeared to have operated as a junkyard and/or automotive dealer from 1961-1964. Terracon

did not observe any evidence of soil or groundwater contamination (oil sheens, soil staining, etc) at the Study Area or surrounding properties during the reconnaissance walk. While no contamination was observed, the cemetery's embalming/cremating operations should be considered as a **Medium Risk** to the Study Area based on types and amounts of hazardous chemicals used in operation processes. In addition, the three former gas station facilities are considered **High Risk** to the Study Area, while the two former junkyards/automotive dealers are a **Medium Risk** to the Study Area.

Anticipated Impacts

In conclusion, nine sites were identified that pose a **High Risk** or a **Moderate Risk** to the Study Area. Five sites were identified as **Low Risk** to the project based on site usage, distance and direction from the Study Area, or regulatory status. Additional details of these sites are provided below. GeoEnvironmental sites of concern are shown on the figure provided in ***Figure 2***.

Summary of Medium and High-Risk Sites

1. **Site:** Coastal Carolina Regional Airport **Property Owner:**
Address: 200 Terminal Road Craven County
New Bern, NC 28562
Craven County PIN: 7-103-092

The Craven County Regional Airport (also called the Simmons-Nott Airport) is located at 200 Terminal Road in New Bern, NC. Several stormwater permits are active for this facility, with Scotts Creek being the receiving stream the could transport pollutants. An open tank incident remains on this facility (LUST ID: NC10021), and another tank had a reported history of a leak. The leak was reported and the incident was closed in May of 1994, but Terracon did not locate any records showing cleanup efforts or a No Further Action (NFA) letter. Additionally, an Aboveground Storage Tank (AST) release incident (incident #: 93276) was reported in September of 2015 at the Hanover Rent A Car facility at 1501 Airport Road. This incident was issued an NFA in March of 2023. **This site is anticipated to present Medium GeoEnvironmental impacts to the project due to the stormwater permits drainage to an onsite creek, an open tank, and a history of two leaking tanks.**

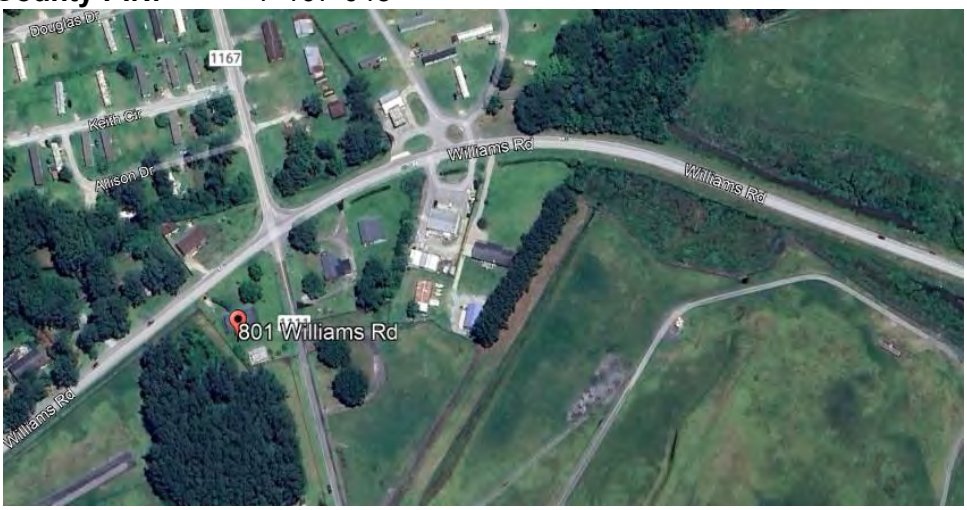
2. **Site:** Josh Mills Pontiac- GMC **Property Owner:**
Address: 917 Highway 70 E, Church – Undenominational
New Bern, NC Pentacostal
28560
Craven County PIN: 7-009-001

The former Josh Mills Pontiac–GMC facility is at 917 Highway 70 E and is occupied by the Undenominational Pentecostal Church of James City. The facility's most recent inspection in December of 2023 indicated that the UST Inspection failed due to failure to provide corrosive protection to an existing tank system, failure to permanently close a substandard UST, and failure to complete primary operating training. **This site is anticipated to present High GeoEnvironmental impacts to the project.**

3. **Site:** New Bern Mercury Spill/ private residence
Property Owner: Gary Tullos

Address: 801 Williams Road, New Bern, NC 28562

Craven County PIN: 7-107-045

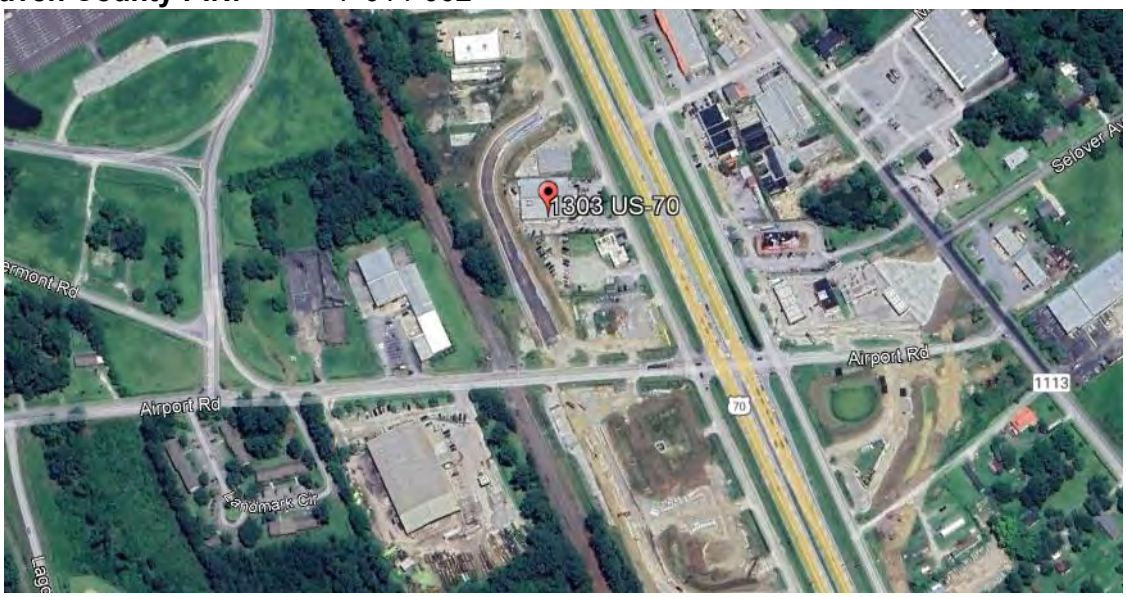


The 801 Williams Road potential mercury spill is reported on the EDR database as having occurred in August of 2022 at a private residence. No other information was obtained about the incident. **This site is anticipated to present High GeoEnvironmental impacts to the project, due to the unknown status of the spill and the potential impact it had on soil and groundwater.**

4. **Site:** Adolph's Autobody (Currently American Coastal Collision Body Shop/ Caliber Collision Center-New Bern 1573) **Property Owner:** Langemann Coastal Properties LLC

Address: 1303 Highway 70 E,
New Bern, NC
28560

Craven County PIN: 7-014-002



The former Adolph's Autobody facility, currently the American Coastal Collision Body Shop/Caliber Collision Center-New Bern 1573), is located at 1303 Highway 70 E. An underground leak was reported in May of 1995 from a commercial UST; no documents to show cleanup. No other information was obtained about the incident. **This site is anticipated to present High GeoEnvironmental impacts to the project, due to the lack of documentation for cleanups and NFA reports.**

5. **Site:** James City Fuel Market; Fisher Stores Inc.; B&H Construction Company Inc. **Property Owner: N/A**

Address: 1001 Highway 70 E,
New Bern, NC
28560

Craven County PIN: N/A

The former James City Fuel Market facility is located at 1001 Highway 70 E. Four USTs were installed in September of 1992 and remain current on this site, and is listed as a producer of ignitable waste in the reviewed databases. No violations were found to be associated with this facility. **This site is anticipated to present High GeoEnvironmental impacts to the project, due to the current USTs on site.**

6. **Site:** Former Shell gas station
Address: 752 Williams Road, New Bern, NC 28560
Craven County PIN: 7-008-024
Property Owner: Al-Alhdal, Hafdalla & Nasser

The former Shells gas station is at 752 Williams Road. This facility was observed during Terracon's site reconnaissance and is not found on the reviewed databases. No monitoring wells, tank ports, vent pipes, gasoline pumps, hydraulic lifts, or other objects of concern were observed. **This site is anticipated to present High GeoEnvironmental impacts to the project, with the assumption that USTs could still be on site from former gas station activities.**

7.	**Site:**	A-1 Fire & Safety Co./potential former auto repair shop	**Property Owner:** Ebbie Howard Jr.
	Address:	795 Williams Road, New Bern, NC 28560	
	Craven County PIN:	7-107 -140	

The A-1 Fire & Safety Co./potential former auto repair shop is at 795 Williams Road. This facility was observed during Terracon's site reconnaissance and is not found on the reviewed databases. No monitoring wells, tank ports, vent pipes, gasoline pumps, hydraulic lifts, or other objects of concern were observed. **This site is anticipated to present Medium GeoEnvironmental impacts to the project, because it is possible that contamination remains on site from former auto repair activities.**

8. **Site:** Orphan Leaking Underground Storage Tank (LUST) **Property Owner:** N/A

Address: 807 Williams Road, New Bern, NC 28560

Craven County PIN: N/A

An orphan LUST incident was inaccurately mapped in the EDR database and the North Carolina Department of Environmental Quality database as 807 Williams Road. The incident was reported in January of 2023. No close out dates, corrective action plans, or notices of soil or groundwater contamination have been reported, and no documents are available on the reviewed databases. **This site is anticipated to present Medium GeoEnvironmental impacts to the project, because the location of the incident is unconfirmed, and it is possible that contamination is on site from the reported LUST incident.**

9.	**Site:**	Craven Outboard Repair (boat repair shop)	**Property Owner:** James D. Gray
	Address:	785 Williams Road, New Bern, NC 28560	
	Craven County PIN:	7-107 -130	

The Craven Outboard Repair is at 785 Williams Road. This facility was observed during Terracon's site reconnaissance and is not found on the reviewed databases. No monitoring wells, tank ports, vent pipes, gasoline pumps, hydraulic lifts, or other objects of concern were observed. **This site is anticipated to present Medium GeoEnvironmental impacts to the project, because it can be assumed that oil staining/spills have been associated with this site.**

10.	**Site:**	Former drycleaner and/or automotive dealership	**Property Owner:** N/A
	Address:	935 Highway 70 E, New Bern, NC 28560	
	Craven County PIN:	N/A	

The former dry cleaner and/or automotive dealership is at 935 Highway 70 E. This shopping center is currently occupied by a Food Lion grocery store. This site was observed during Terracon's site reconnaissance and was found on the reviewed databases to be a producer of hazardous and non-hazardous waste. No monitoring wells, tank ports, vent pipes, gasoline pumps, hydraulic lifts, or other objects of concern were observed. No violations are associated with this facility. **This site is anticipated to present a Medium GeoEnvironmental impacts to the project, because it is possible that drycleaning chemicals were once on site, along with contamination associated with discarded auto parts.**

Closing

Please note that discovery of additional sites not recorded by regulatory agencies and not reasonably discernible during the field reconnaissance may occur. The GeoEnvironmental Section should be notified immediately after discovery of such sites so their potential impact(s) may be assessed.

Please do not hesitate to contact the undersigned at 704-338-6700 if you have questions or comments regarding this GeoEnvironmental Phase I Report.

Sincerely,
Terracon Consultants

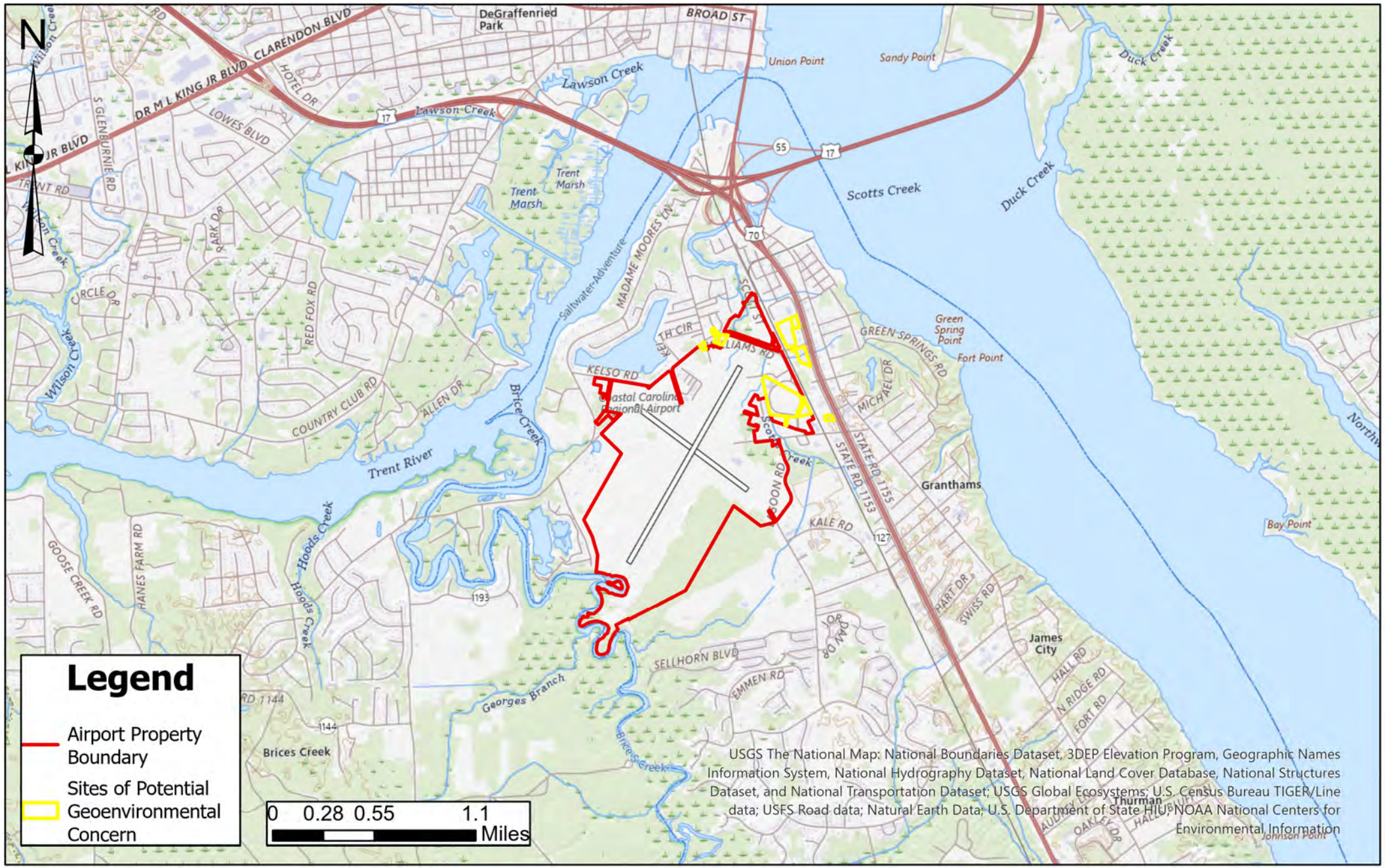
Sarah Fernandez
Environmental Scientist

M. Neal McElveen, P.E.
Principal/Senior Engineer

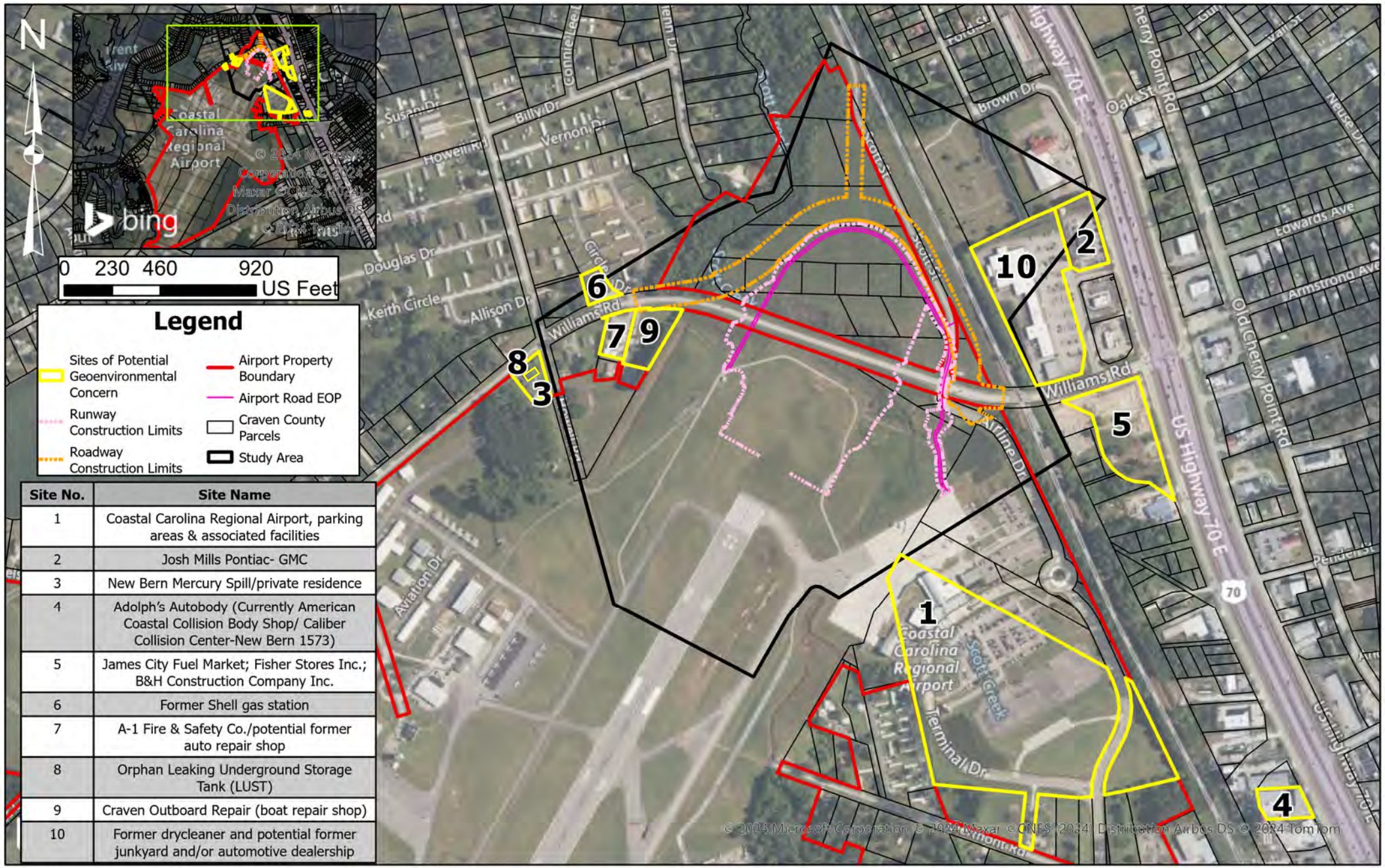
Attachments:

Figure 1 - Topographic Vicinity Map
Figure 2 - Location of GeoEnvironmental Sites of Concern Map Data Base

FIGURES



Project Manager: MNM	Project No. 71247268	Terracon 2701 Westport Road Charlotte, North Carolina	Figure 1 Topographic Vicinity Map Site Name: NCDOT Runway 4-22 EWN 200 Terminal Road, New Bern, Craven County, North Carolina NCDOT Division 14
Drawn by: JCO			
Checked by: MNM	Date: July 2024		
Approved by: MNM			



Site No.	Site Name
1	Coastal Carolina Regional Airport, parking areas & associated facilities
2	Josh Mills Pontiac- GMC
3	New Bern Mercury Spill/private residence
4	Adolph's Autobody (Currently American Coastal Collision Body Shop/ Caliber Collision Center-New Bern 1573)
5	James City Fuel Market; Fisher Stores Inc.; B&H Construction Company Inc.
6	Former Shell gas station
7	A-1 Fire & Safety Co./potential former auto repair shop
8	Orphan Leaking Underground Storage Tank (LUST)
9	Craven Outboard Repair (boat repair shop)
10	Former drycleaner and potential former junkyard and/or automotive dealership

Project Manager: MNM	Project No. 71247268
Drawn by: JCO	
Checked by: MNM	Date: July 2024
Approved by: MNM	

Terracon

2701 Westport Road
Charlotte, North Carolina

Figure 2 Location of Geoenvironmental Sites of Concern
Site Name: NCDOT Runway 4-22 EWN

200 Terminal Road, New Bern, Craven County, North Carolina
NCDOT Division 14

Appendix I

EWN Noise Technical Report

PROPOSED RUNWAY IMPROVEMENTS AT COASTAL CAROLINA REGIONAL AIRPORT

Noise Technical Report

Prepared for
Parrish & Partners

July 2024

ESA

PROPOSED RUNWAY IMPROVEMENTS AT COASTAL CAROLINA REGIONAL AIRPORT

Noise Technical Report

Prepared for
Parrish & Partners

July 2024

2600 Capitol Avenue
Suite 200
Sacramento, CA 95816
916.564.4500
esassoc.com

Bend	Orlando	San Jose
Camarillo	Pasadena	Santa Monica
Delray Beach	Petaluma	Sarasota
Destin	Portland	Seattle
Irvine	Sacramento	Tampa
Los Angeles	San Diego	
Oakland	San Francisco	

D201800979.03

OUR COMMITMENT TO SUSTAINABILITY | ESA helps a variety of public and private sector clients plan and prepare for climate change and emerging regulations that limit GHG emissions. ESA is a registered assessor with the California Climate Action Registry, a Climate Leader, and founding reporter for the Climate Registry. ESA is also a corporate member of the U.S. Green Building Council and the Business Council on Climate Change (BC3). Internally, ESA has adopted a Sustainability Vision and Policy Statement and a plan to reduce waste and energy within our operations. This document was produced using recycled paper.

TABLE OF CONTENTS

Noise Technical Report

List of Figures

List of Tables

PROPOSED RUNWAY IMPROVEMENTS AT COASTAL CAROLINA REGIONAL AIRPORT

Noise Technical Report

1. Introduction

This report provides an analysis and overview of aircraft noise modeling conducted for the 2023 Existing Condition and future years of 2027 (Implementation of Proposed Action) and 2032 (five years after Implementation of Proposed Action) at Coastal Carolina Regional Airport (EWN or the Airport). This noise analysis was prepared as a part of the Environmental Assessment (EA) for proposed improvements to Runway 4/22 (the Proposed Action). Runway improvements include a 173-foot runway extension, 200-foot blast pad, 400-foot extension of the RSA, and relocated airport perimeter road. Relocation of the localizer and realignment of Williams Road would also be required. The EA Runway Extension Alternative would enhance safety for airport users and the surrounding community by providing the full 1,000-foot RSA and would maximize the usable length of Runway 4/22 given site constraints with a 173-foot extension.

The Federal Aviation Administration's (FAA) Aviation Environmental Design Tool (AEDT) Version 3e was used to conduct this noise analysis. The noise analysis was prepared using the existing and forecast aircraft activities developed for the EWN EA. A detailed discussion of the noise modeling inputs is included in the following sections.

2. Methodology

2.1 Introduction

The information described in this section was compiled and incorporated into the FAA's AEDT Version 3e, the most current version of the model at project onset. The AEDT was used to develop day-night average sound level (DNL) 65 decibel (dB), 70 dB, and 75 dB contours for this analysis, as well as determine if any significant or reportable noise increases would occur over noise sensitive areas as a result of the Proposed Action. The DNL contours were prepared using existing operational data as well as the FAA approved forecast for EWN.

This noise analysis was developed and disclosed in accordance with FAA Order 1050.1F, *Environmental Impacts: Policies and Procedures*, FAA Order 5050.4B, *National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions*, and the 1050.1F Desk Reference.

Five modeling scenarios were evaluated:

- 2023 Existing Conditions
- 2027 No Action Alternative
- 2027 Proposed Action Alternative
- 2032 No Action Alternative
- 2032 Proposed Action Alternative

2.2 Physical Description of the Airport Layout

EWN is located in New Bern, North Carolina, approximately 2 miles south of the New Bern central business district. The Airport has two intersecting runways (Runway 4/22 and Runway 14/32). Runway 4/22 is currently 6,452 feet long by 150 feet wide and is proposed to be lengthened to 6,625 feet. Runway 14/32 is 4,001 feet long by 150 feet wide.

The airport layout and proposed improvements to Runway 4/22 are shown in **Figure 1**.

Table 1 and **Table 2** provide runway data for the Existing Conditions, No Action, and Proposed Action alternatives.

TABLE 1

RUNWAY DATA – EXISTING CONDITIONS (2023) AND NO ACTION (2027, AND 2032) ALTERNATIVES

Runway	Latitude	Longitude	Elevation (ft. MSL)	Length (ft.)	Approach Angle (degrees)	Arrival Displaced Threshold (ft.)
4	35.064728	-77.048789	13	6,452	3	299
22	35.079974	-77.037778	15	6,452	3	-
14	35.077040	-77.047866	12	4,001	4	-
32	35.070283	-77.037321	18	4,001	3	-

Source: Environmental Science Associates, FAA, 2024

TABLE 2

RUNWAY DATA – PROPOSED ACTION (2027 AND 2032) ALTERNATIVES

Runway	Latitude	Longitude	Elevation (ft. MSL)	Length (ft.)	Approach Angle (degrees)	Arrival Displaced Threshold (ft.)
4	35.064728	-77.048789	13	6,625	3	299
22	35.080383	-77.037481	14	6,625	3	-
14	35.077040	-77.047866	12	4,001	4	-
32	35.070283	-77.037321	18	4,001	3	-

Source: Environmental Science Associates, FAA, 2024

SOURCE: Esri; ESA, 2024.

EWN Noise Services for Runway 4-22 Improvements

Figure 1
Airfield Layout and Proposed Runway Improvements
Coastal Carolina Regional Airport

2.3 Aircraft Fleet Mix and Operational Forecasts

Various aircraft have different noise characteristics dependent upon factors such as size, engine type, and airframe design. Therefore, it is necessary to account for the different aircraft types and fleet mix operating in the environment when modeling noise exposure. EWN accommodates several different types of aircraft operation, including general aviation, regional commercial airline, cargo, and military. Marine Corps Air Station (MCAS) Cherry Point currently operates McDonnell-Douglas AV-8B Harrier II ground attack jets at EWN, however those operations will be phased out prior to the implementation of the Proposed Action.

Current operational data was compiled to develop the 2023 Existing Conditions fleet mix and total operations by aircraft type. FAA-approved aviation activity forecasts were prepared for the 2027 and 2032 No Action and Proposed Action alternatives. The aircraft fleet mix and total number of annual operations modeled for each alternative are shown in **Table 3**.

TABLE 3

AIRCRAFT FLEET MIX AND MODELED ANNUAL OPERATIONS

Operational Category	AEDT ANP Type	2023 Existing Conditions				2027 No Action/Proposed Action				2032 No Action/Proposed Action			
		Arrival		Departure		Arrival		Departure		Arrival		Departure	
		Day	Night	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
GA Single-Engine Piston	GASEPV	4,393	488	4,393	488	4,640	516	4,640	516	5,014	557	5,014	557
	CNA172	2,735	304	2,735	304	2,889	321	2,889	321	3,122	347	3,122	347
	CNA182	597	66	597	66	630	70	630	70	681	76	681	76
	CNA206	1,252	139	1,252	139	1,322	147	1,322	147	1,429	159	1,429	159
	PA28	1,368	152	1,368	152	1,445	161	1,445	161	1,561	173	1,561	173
GA Multi-Engine Piston	BEC58P	2,371	263	2,371	263	2,504	278	2,504	278	2,706	301	2,706	301
GA Turboprop	DHC6	1,411	157	1,411	157	1,490	166	1,490	166	1,610	179	1,610	179
	DO228	278	31	278	31	293	33	293	33	317	35	317	35
	CNA441	150	17	150	17	158	18	158	18	171	19	171	19
	CNA208	748	83	748	83	790	88	790	88	854	95	854	95
GA Jet	CNA55B	361	40	361	40	382	42	382	42	412	46	412	46
	CL600	307	34	307	34	324	36	324	36	351	39	351	39
	CNA525C	1,924	214	1,924	214	2,032	226	2,032	226	2,196	244	2,196	244
	GV	271	30	271	30	286	32	286	32	309	34	309	34
	CNA510	894	99	894	99	945	105	945	105	1,021	113	1,021	113
	CNA560E	578	64	578	64	611	68	611	68	660	73	660	73
	CNA560XL	1,698	189	1,698	189	1,794	199	1,794	199	1,938	215	1,938	215
Commercial Jet	CRJ9-ER	150	17	150	17	160	18	160	18	165	18	165	18
	EMB145	2,419	269	2,419	269	2,575	286	2,575	286	2,657	295	2,657	295
Cargo	DHC8	169	19	169	19	169	19	169	19	169	19	169	19
	CNA208	281	31	281	31	281	31	281	31	281	31	281	31
Military	AV8B	331	37	331	37	-	-	-	-	-	-	-	-
	C130AD	410	46	410	46	410	46	410	46	410	46	410	46
Helicopter	S65	49	0	49	0	49	0	49	0	49	0	49	0
	S70	120	0	120	0	126	0	126	0	137	0	137	0
	R44	120	0	120	0	126	0	126	0	137	0	137	0
Total					**56,343**				**58,671**				**62,942**

Source: Environmental Science Associates, Parrish & Partners 2024

2.4 Time of Day

The time of day operations occur is considered as the DNL metric is a 24-hour, time-weighted energy average. The time-weighting refers to the fact that noise events occurring during certain noise sensitive time periods receive an additional weighting. For the DNL metric, noise events occurring between the hours of 10:00:00 p.m. and 6:59:59 a.m. receive a 10-dB weighting. This weighting attempts to account for the higher sensitivity to noise during nighttime hours that accompanies the expected decrease in background noise levels compared with background noise levels during the day. Because noise is measured on a logarithmic scale, a 10-dB weighting means each nighttime noise event is weighted as equivalent to 10 daytime events. For this analysis, it was assumed that 5% of arrivals and 5% of departures operate during nighttime hours for each modeling scenario.

2.5 Runway Utilization

The primary factor affecting runway use at airports is weather, in particular the wind direction and wind speed. Additional factors that may affect runway use include the position of the facility or ramp relative to the runways and runway length. Larger jet aircraft primarily use Runway 4/22 at EWN, while Runway 14/32 is generally used by smaller piston-engine aircraft. **Table 4** shows the runway utilization percentages for each operational category, based on the latest EWN Master Plan, used in all modeling scenarios.

TABLE 4

RUNWAY UTILIZATION PERCENTAGES

Operational Category	Runway	Arrival Percentage	Departure Percentage
GA Single-Engine Piston	4	25%	25%
	22	25%	25%
	14	25%	25%
	32	25%	25%
GA Multi-Engine Piston	4	25%	25%
	22	25%	25%
	14	25%	25%
	32	25%	25%
GA Turboprop	4	50%	50%
	22	50%	50%
	14	-	-
	32	-	-
GA Jet	4	50%	50%
	22	50%	50%
	14	-	-
	32	-	-
Commercial Jet	4	50%	50%
	22	50%	50%
	14	-	-
	32	-	-
Cargo	4	50%	50%
	22	50%	50%
	14	-	-
	32	-	-
Military	4	50%	50%
	22	50%	50%
	14	-	-
	32	-	-

Source: Environmental Science Associates, Parrish & Partners 2024
Note: Helicopters were assumed to utilize each runway end equally

2.6 Flight Track and Flight Track Utilization

For this analysis, all operations were assumed to utilize straight-in and straight-out arrival and departure tracks from each runway end. Helicopter operations were assumed to fly in a north/south direction from each runway end.

3. Noise Modeling Results

3.1 DNL Contours

The information described above was compiled and incorporated into the AEDT, which calculates aircraft noise exposure using a defined network of grid points at ground level around

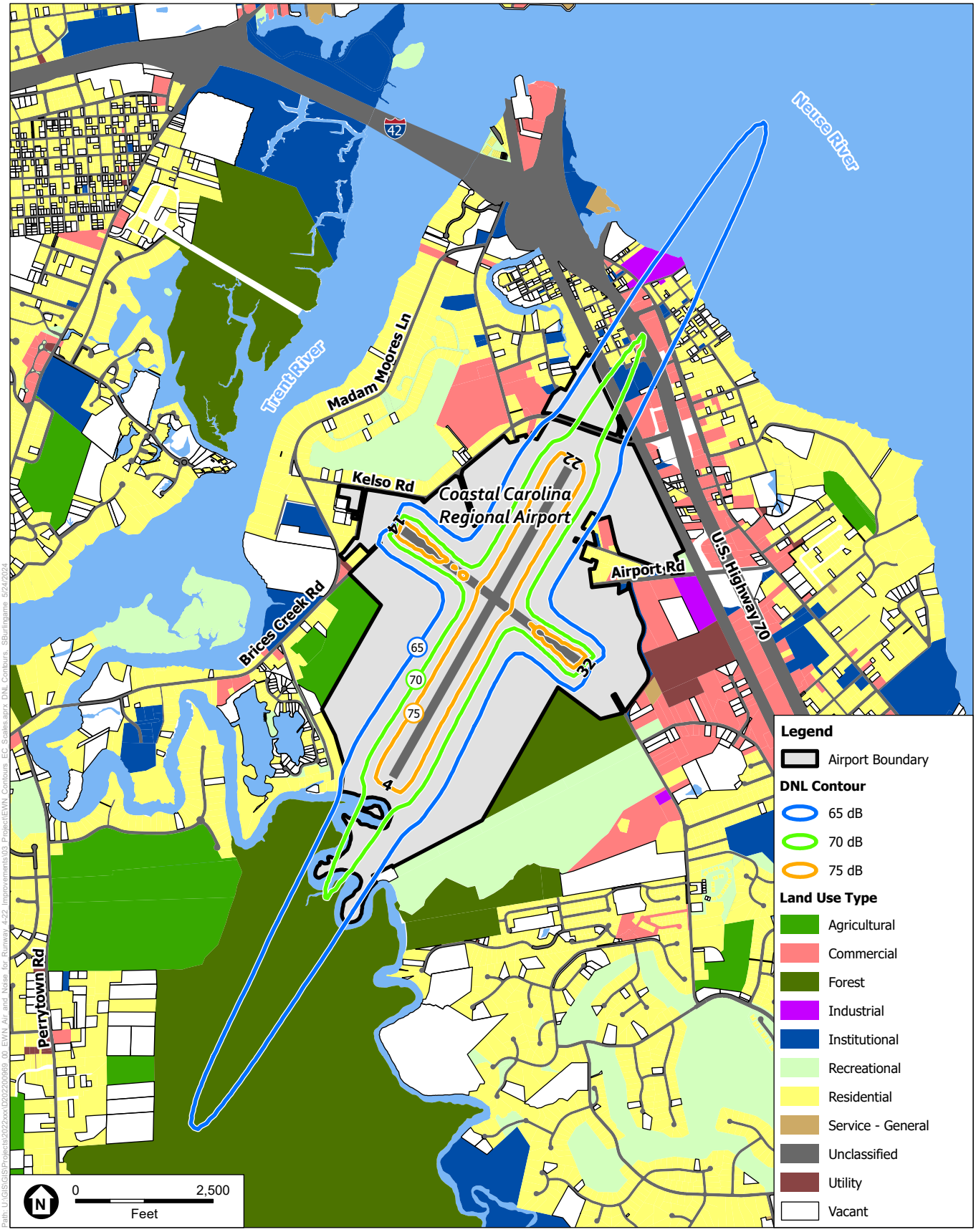
an airport. It computes the noise generated by each aircraft operation, by aircraft type, and engine thrust level along each flight track. The noise exposure levels for each aircraft are then summed at each grid point. The cumulative noise exposure levels at all grid points are then used to develop noise exposure contours for selected values (e.g., DNL 65, 70 and 75 dB). Using the results of the grid point analysis, noise contours of equal noise exposure can then be plotted.

The DNL 65-, 70-, and 75-dB contours for 2023 Existing Conditions, 2027 No Action Alternative, and 2027 Proposed Action Alternative are shown in **Figures 2, 3, and 4**, respectively. The 2032 No Action Alternative and Proposed Action Alternative DNL contours are shown in **Figures 5 and 6**, respectively. These contours represent the 24-hour aircraft noise exposure to areas surrounding EWN on an average annual day. The 2023 Existing Conditions DNL 65 contour extends well past the Airport property boundary due to the operation of Marine Corps AV-8B Harrier II jets. As these operations are being phased out, the future year DNL 65 contours only extend past the Airport property boundary to the northeast in the vicinity of Williams Road. The 2027 Proposed Action and 2032 No Action and Proposed Action 65 DNL contours extend onto Meadows Cemetery property. **Table 5** presents the acreages within the DNL contours for each scenario. As the DNL 65 contour did not extend to noise sensitive land uses in any of the Proposed Action alternatives, and there are no changes to existing flight procedures, it is expected that there would be no significant noise impacts to noise-sensitive areas as a result of the Proposed Action.

TABLE 5
DNL NOISE CONTOUR AREAS (ACRES)

	Existing Conditions	Future Year No Action		Future Year Proposed Action	
Noise Contour	2023	2027	2032	2027	2032
DNL 65 or greater	641.9	249.3	251.1	261.7	263.6
DNL 70 or greater	244.5	111.4	112.0	117.7	118.4
DNL 75 or greater	103.2	35.8	35.5	38.8	38.5

SOURCE: Environmental Science Associates, 2024.

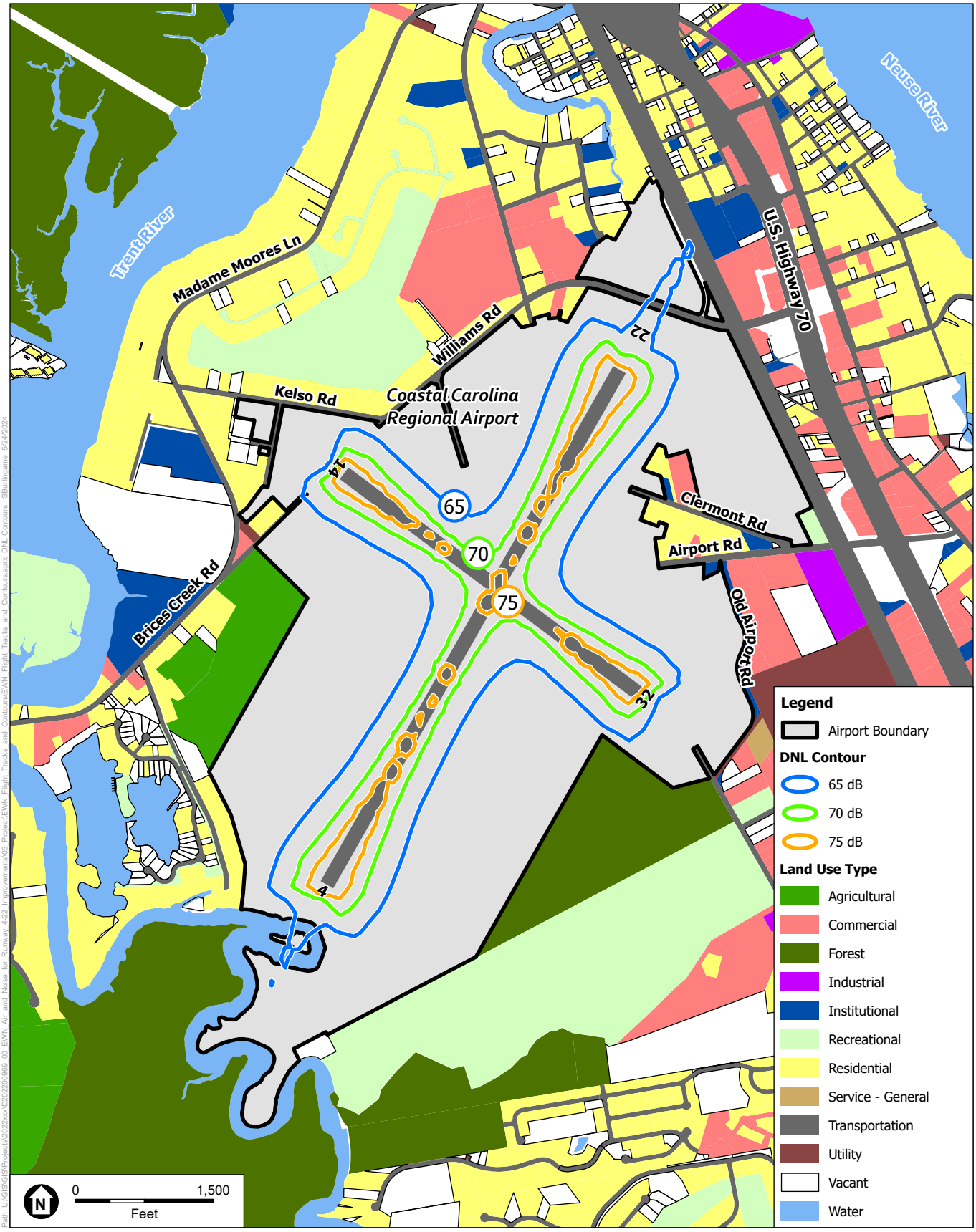


SOURCE: AEDT 3e; Craven County GIS Department;
Adapted by ESA, 2024.

EWN Noise Services for Runway 4-22 Improvements

Figure 2
Existing Conditions 2023 DNL Contours
Coastal Carolina Regional Airport

ESA

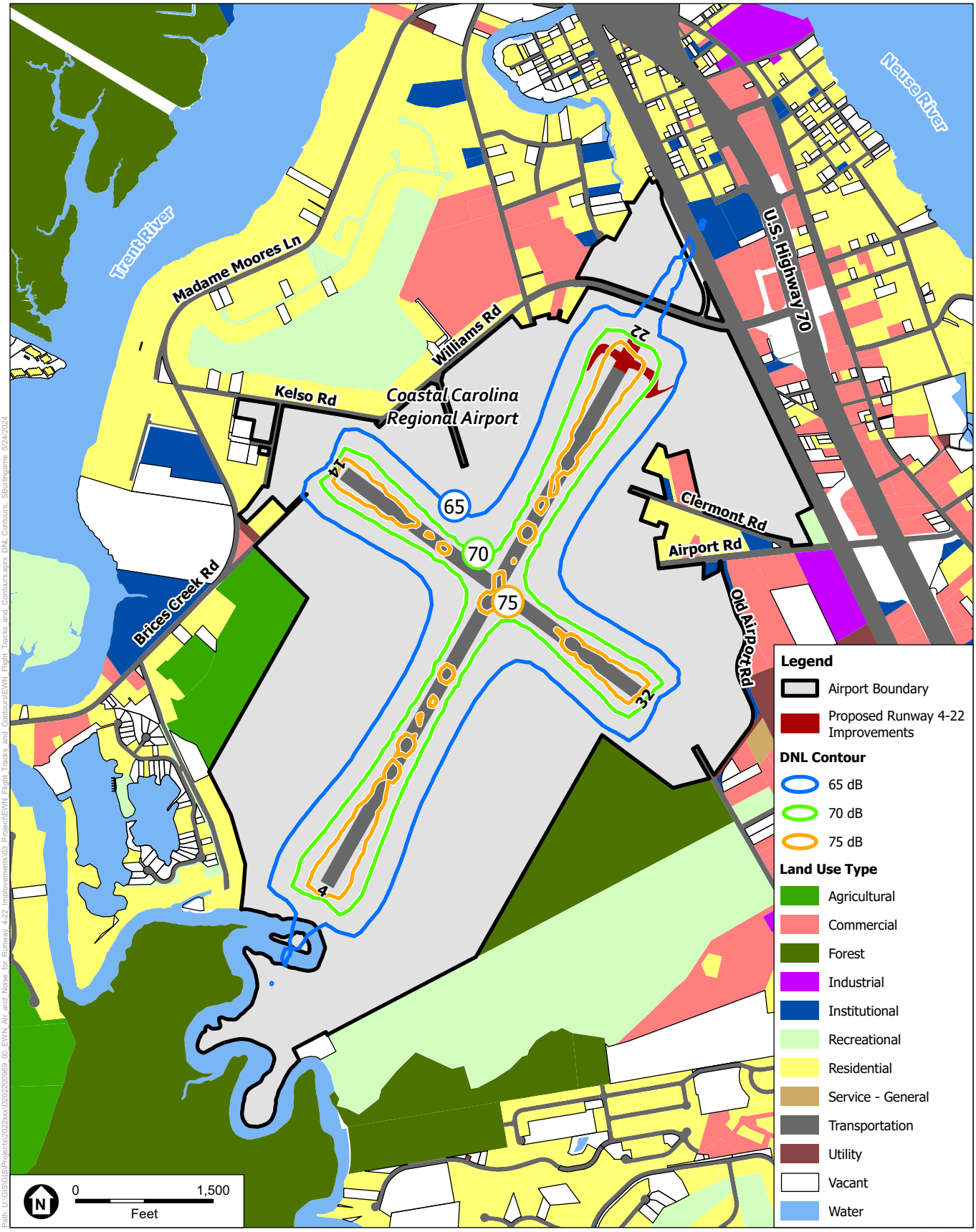


SOURCE: AEDT 3e; Craven County GIS Department;
Adapted by ESA, 2024.

EWN Noise Services for Runway 4-22 Improvements

Figure 3
No Action Alternative 2027 DNL Contours
Coastal Carolina Regional Airport

ESA

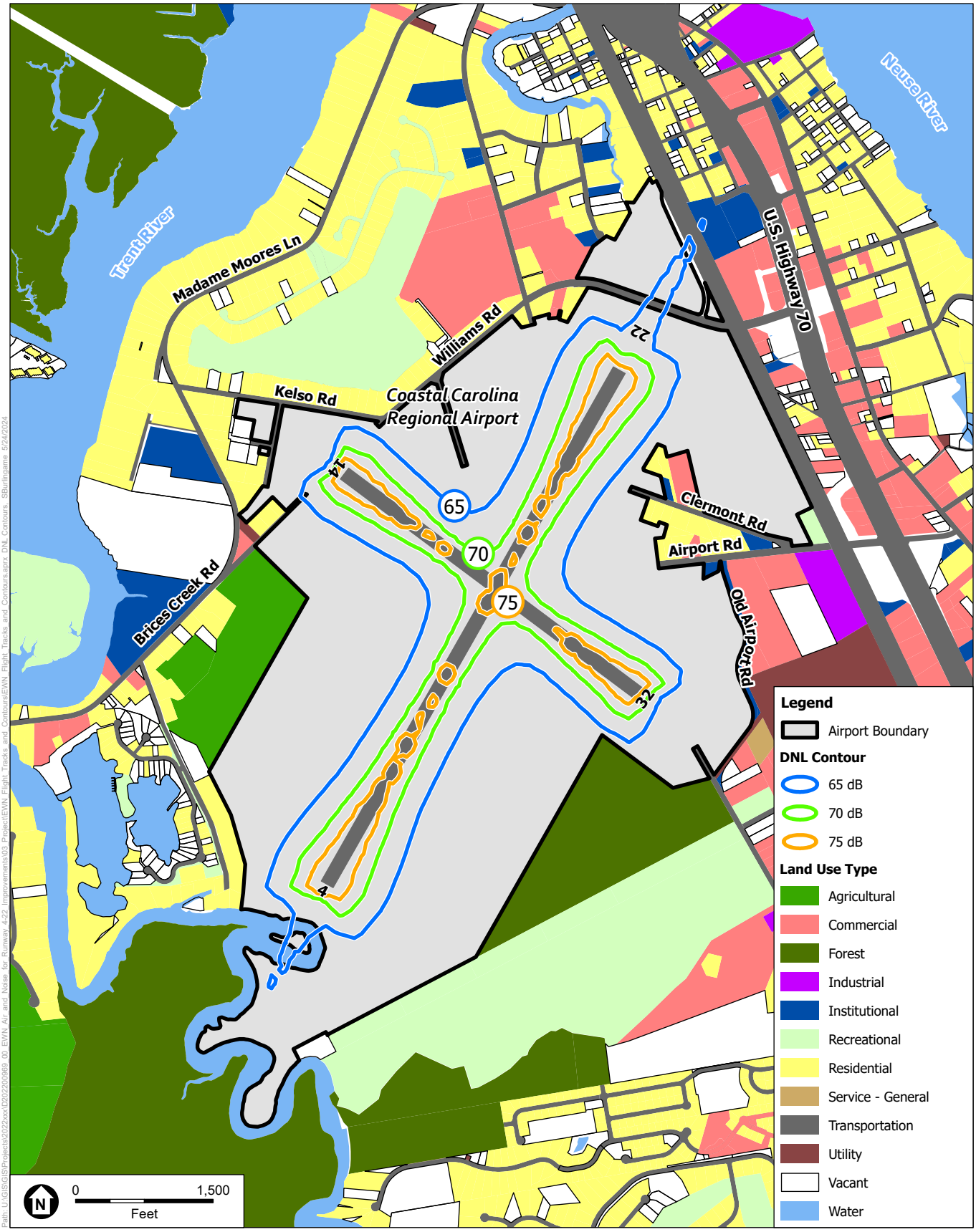


SOURCE: AEDT 3e; Craven County GIS Department; Adapted by ESA, 2024.

EWN Noise Services for Runway 4-22 Improvements

Figure 4
Proposed Action Alternative 2027 DNL Contours
Coastal Carolina Regional Airport

ESA

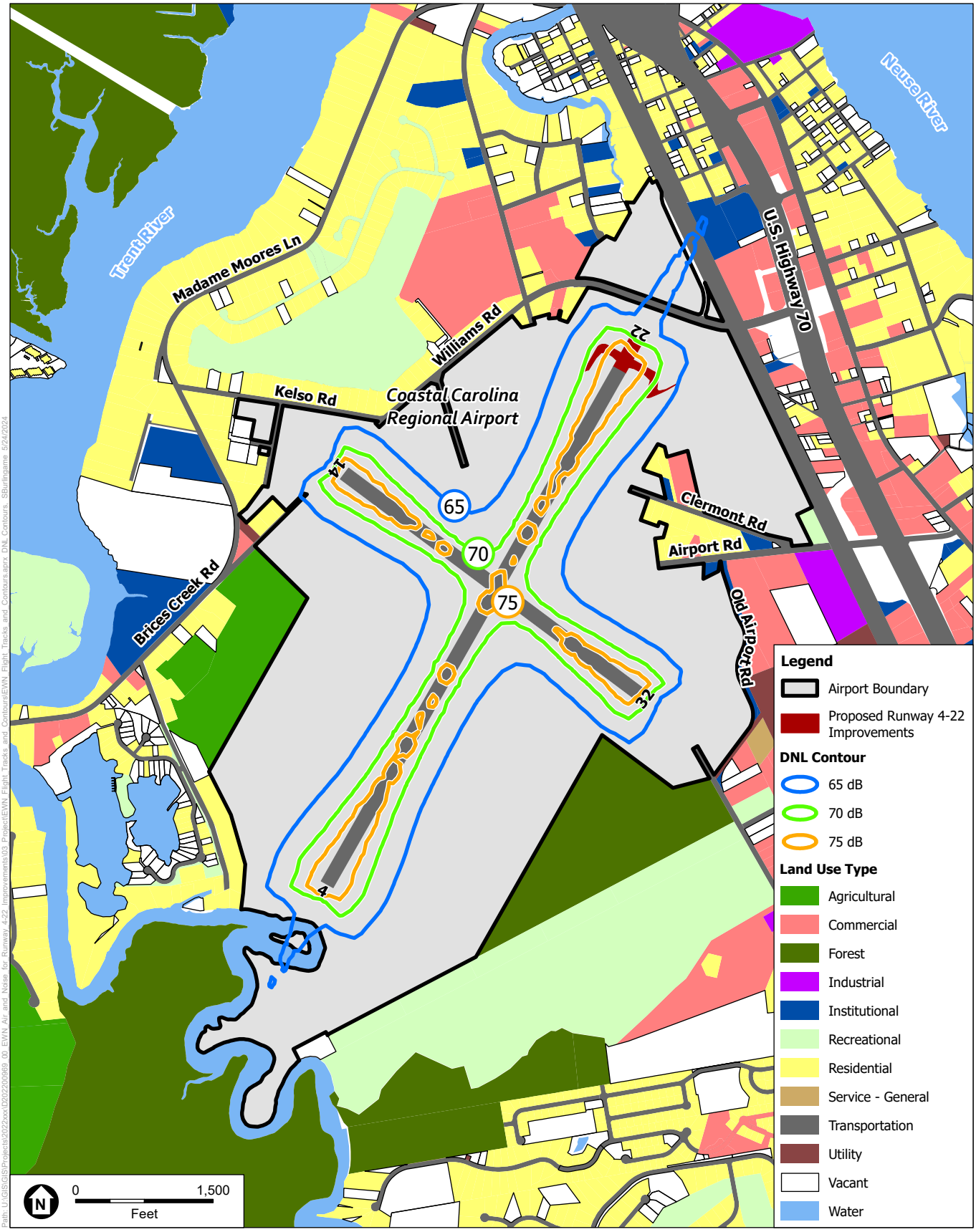


SOURCE: AEDT 3e; Craven County GIS Department;
Adapted by ESA, 2024.

EWN Noise Services for Runway 4-22 Improvements

Figure 5
No Action Alternative 2032 DNL Contours
Coastal Carolina Regional Airport

ESA



SOURCE: AEDT 3e; Craven County GIS Department; Adapted by ESA, 2024.

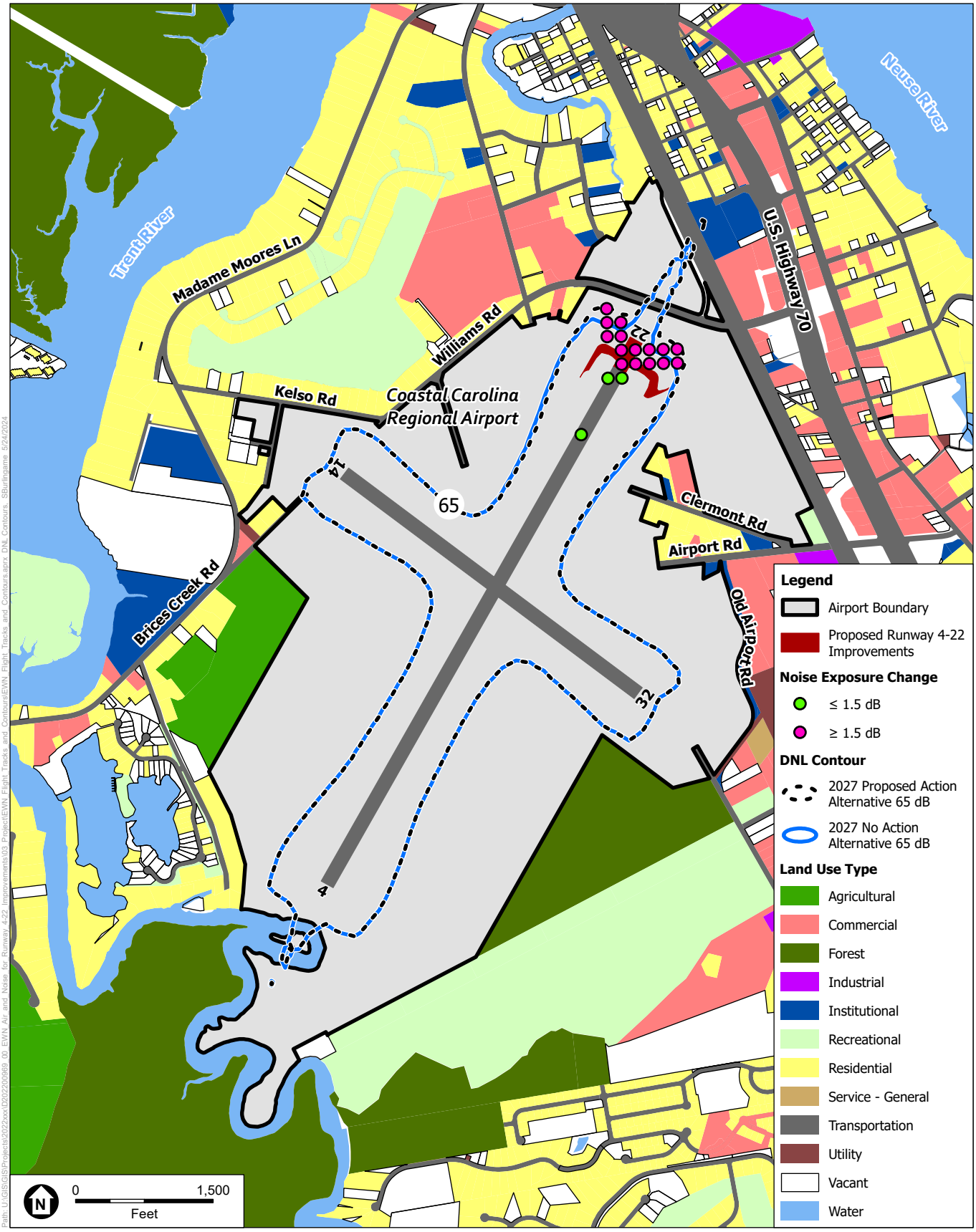
EWN Noise Services for Runway 4-22 Improvements

Figure 6
Proposed Action Alternative 2032 DNL Contours
Coastal Carolina Regional Airport

ESA

3.2 Grid Point Analysis

A grid point analysis was conducted to determine if any significant noise exposure increases (1.5 dB or more within the 65 DNL contour) or reportable noise exposure increases (3 dB or more within the 60 DNL contour or 5 dB or more within the 45 DNL contour) would occur as a result of the Proposed Action. The results of the grid point analysis for future years 2027 and 2032 are presented in **Figure 7** and **Figure 8**. As shown in the figures, there are no significant noise exposure increases outside of the Airport property boundary, and no reportable noise exposure increases anywhere as a result of the Proposed Action. Therefore, it is anticipated that there would be no significant noise-related impacts as a result of the Proposed Action.

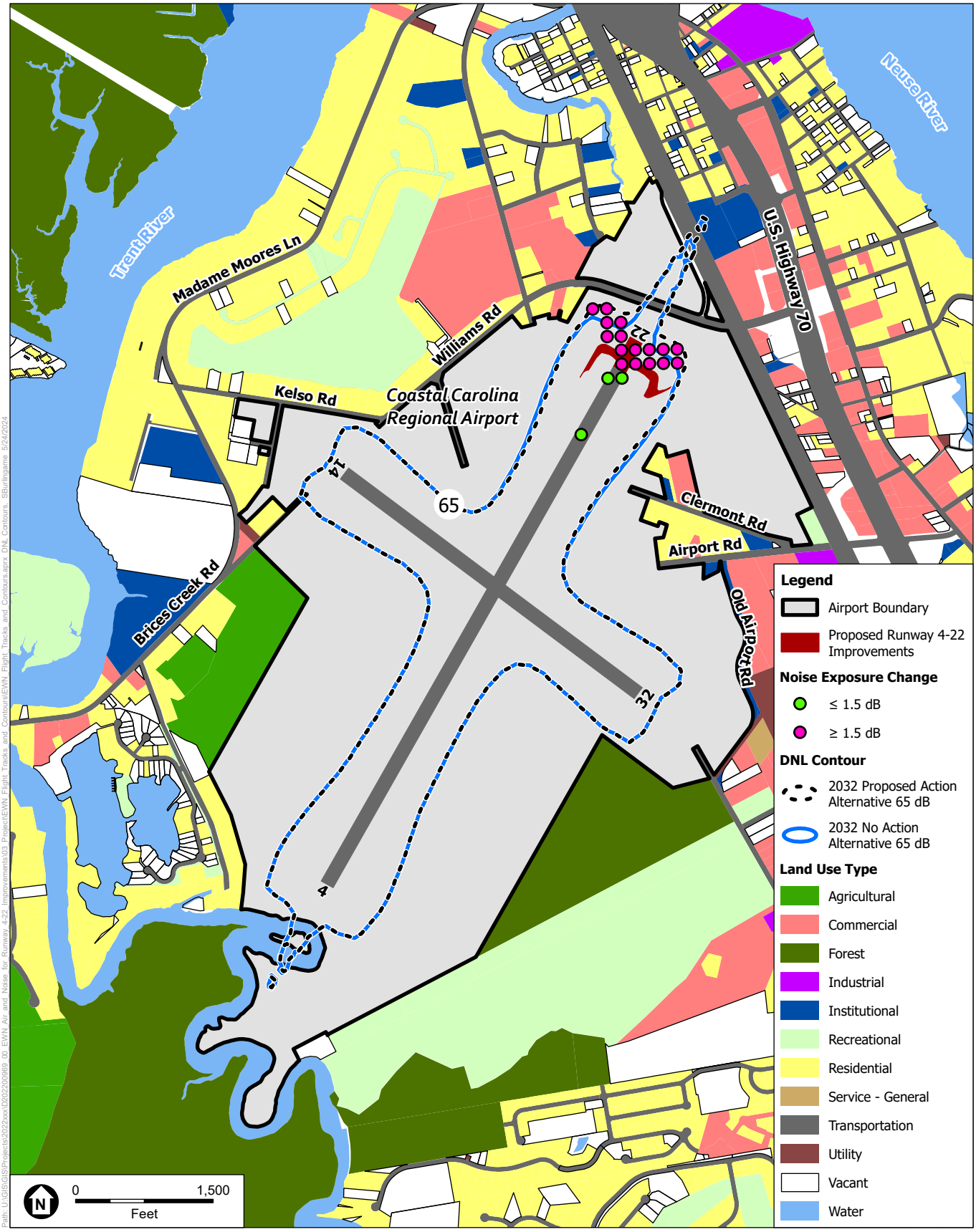


SOURCE: AEDT 3e; Craven County GIS Department; Adapted by ESA, 2024.

EWN Noise Services for Runway 4-22 Improvements

Figure 7
Grid Point Analysis (2027)
Coastal Carolina Regional Airport

ESA



SOURCE: AEDT 3e; Craven County GIS Department; Adapted by ESA, 2024.

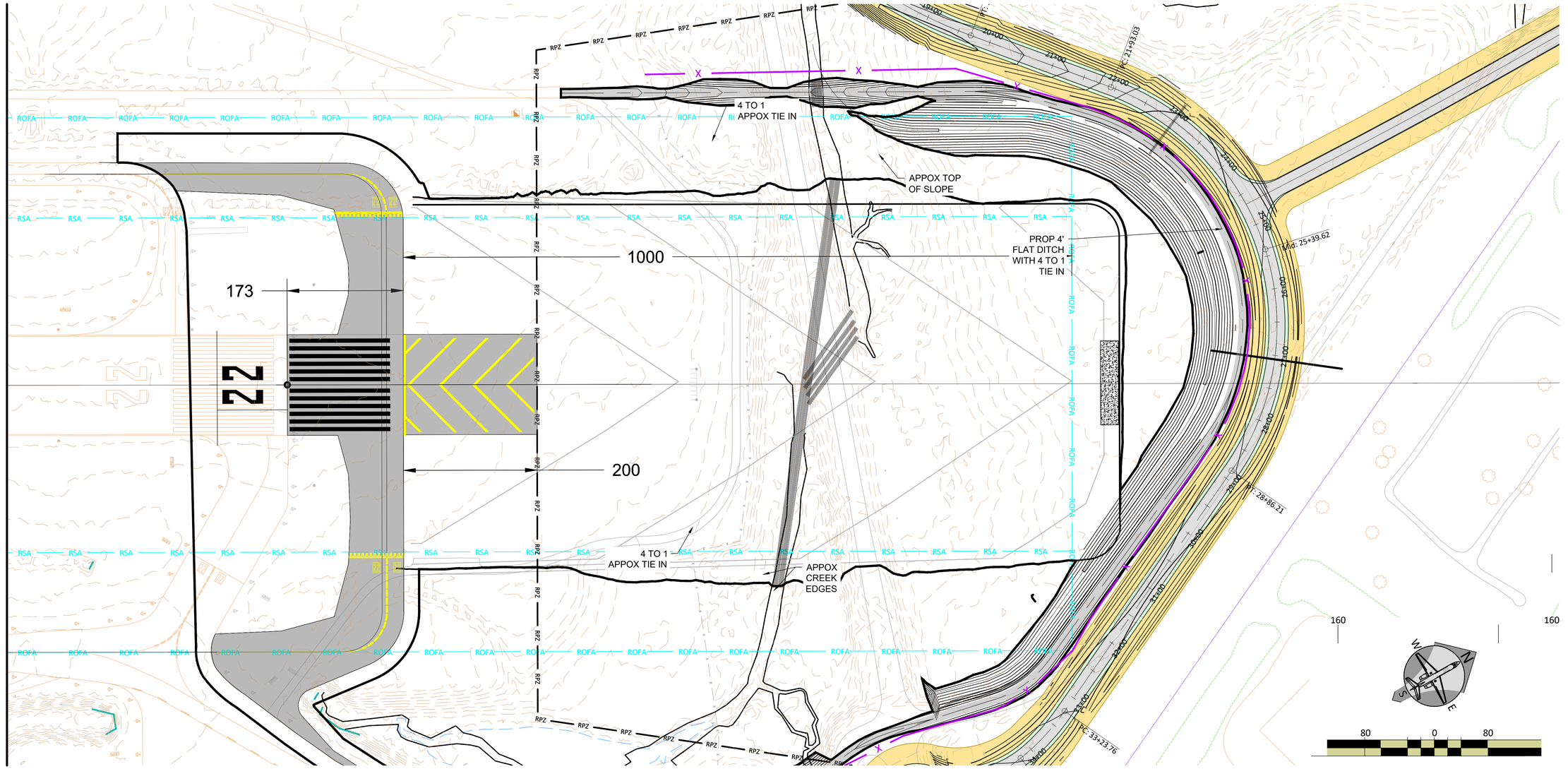
EWN Noise Services for Runway 4-22 Improvements

Figure 8
Grid Point Analysis (2032)
Coastal Carolina Regional Airport

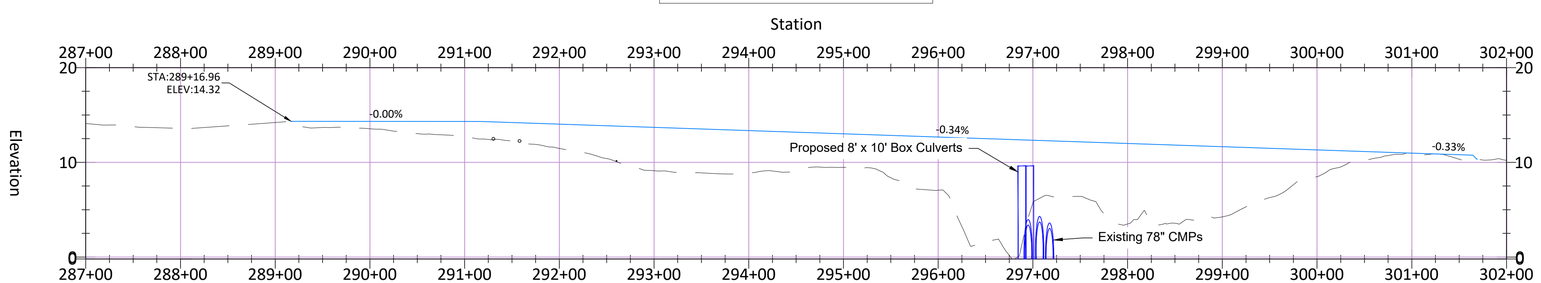
ESA

Appendix J

Preliminary Design Plans



RUNWAY CL PROFILE



COASTAL CAROLINA Regional Airport

PARRISH & PARTNERS
PARRISH AND PARTNERS OF NORTH CAROLINA, PLLC

REVISIONS

No.	Date	Description	Appr

DESIGNER	TECHNICIAN	QC REVIEWER
		TLG

PROJECT NAME
RUNWAY EXTENSION

FAA AIP NO. N/A

STATE GRANT NO. XXXXX.XX.XX.X

SHEET NAME
RUNWAY PROFILE

ENGINEER'S SEAL

PROGRESS DRAWING
NOT FOR
CONSTRUCTION

TIMOTHY L. GRUEBEL
NC PE NO. 041787

P&P PROJECT NO. 1535

SHEET NO.
XXXXX

NCDOT /COASTAL CAROLINA REGIONAL AIRPORT

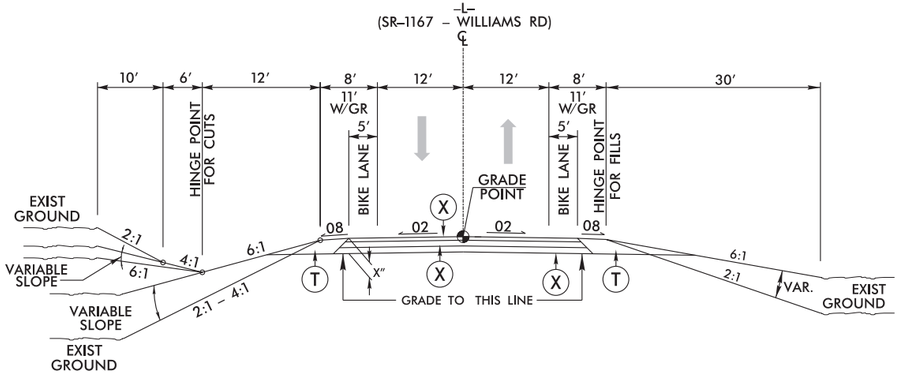
PARRISH & PARTNERS

COASTAL CAROLINA REGIONAL AIRPORT

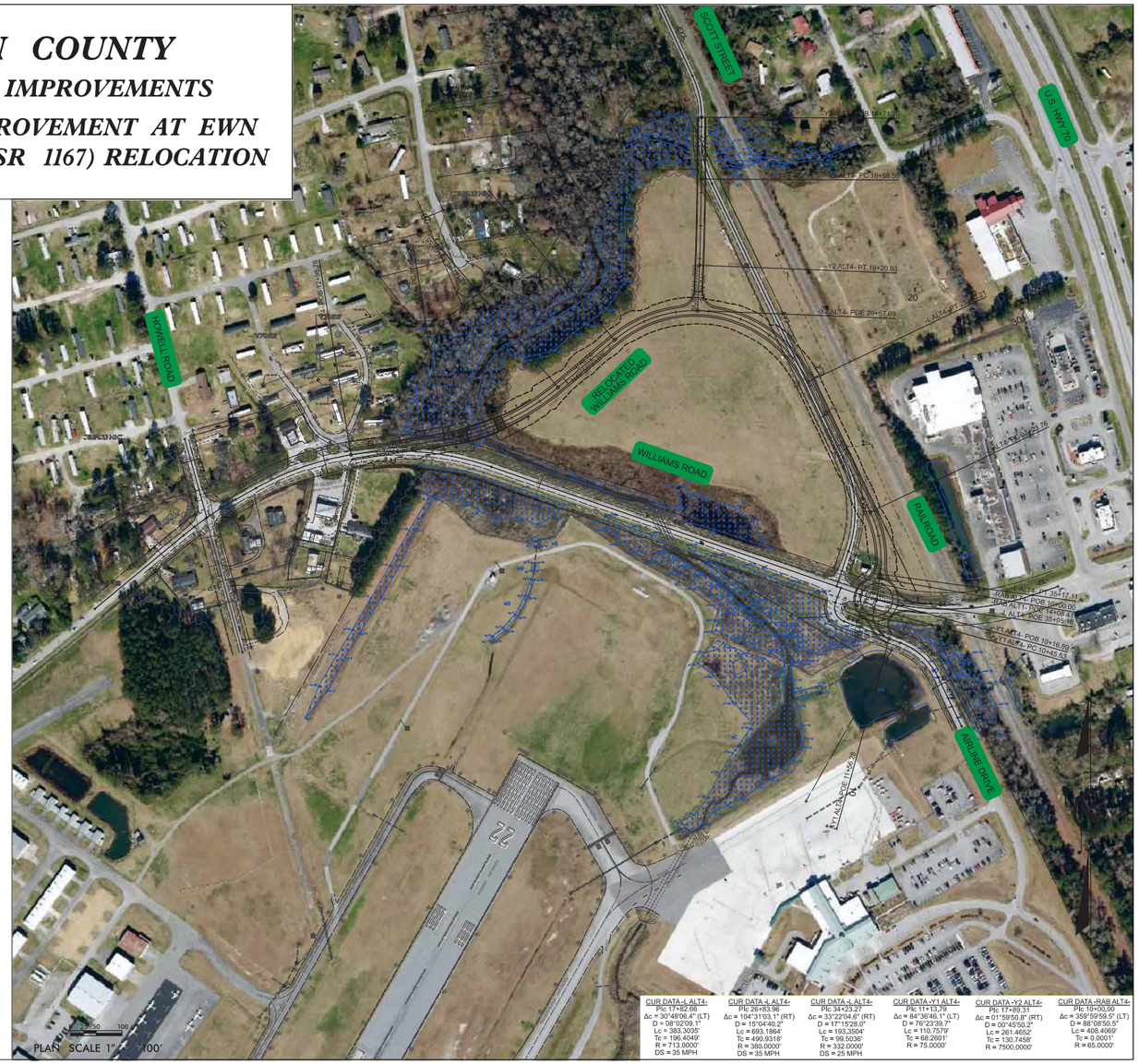
CRAVEN COUNTY

PROJECT EWN IMPROVEMENTS

RUNWAY 4–22 IMPROVEMENT AT EWN
WILLIAMS ROAD (SR 1167) RELOCATION



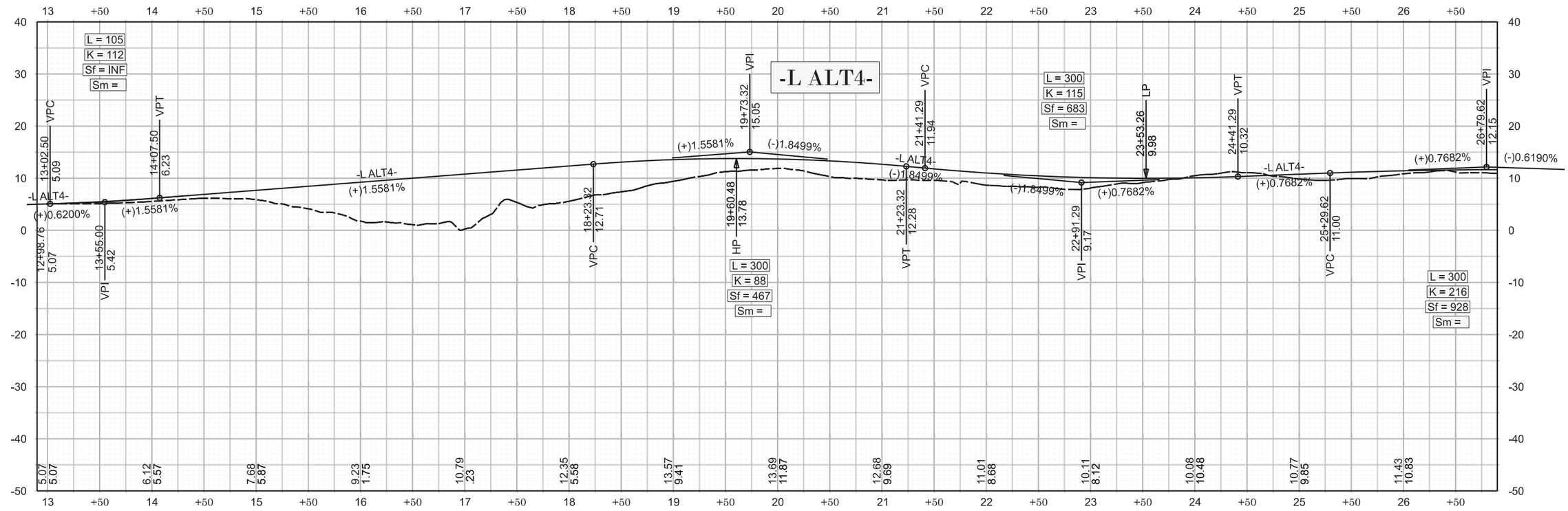
ALTERNATIVE 4

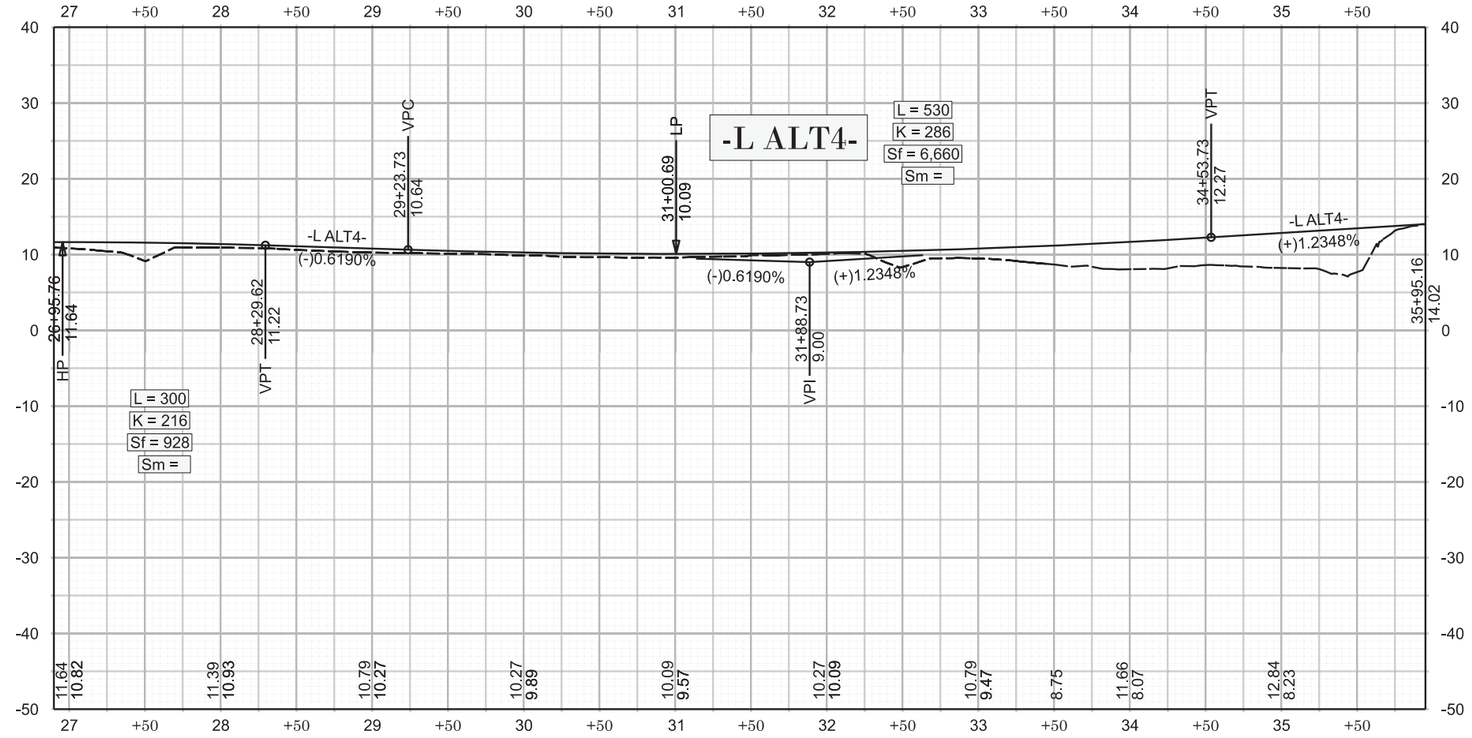


CUR DATA -L ALT4:	CUR DATA -L ALT4:	CUR DATA -L ALT4:	CUR DATA -Y1 ALT4:	CUR DATA -Y2 ALT4:	CUR DATA -RAB ALT4:
Pic 17+82.66	Pic 26+83.99	Pic 34+21.27	Pic 11+13.79	Pic 17+89.31	Pic 10+00.00
Δc = 30°48'06.4" (LT)	Δc = 104°31'03.1" (RT)	Δc = 33°22'04.8" (RT)	Δc = 84°36'46.1" (LT)	Δc = 01°59'50.8" (RT)	Δc = 359°59'59.3" (LT)
D = 08°02'09.1"	D = 15°04'40.2"	D = 17°15'28.0"	D = 76°23'39.7"	D = 00°45'50.2"	D = 88°08'50.5"
Lc = 383.3035'	Lc = 893.1864'	Lc = 193.3504'	Lc = 110.7579'	Lc = 261.4652'	Lc = 408.4069'
Tc = 196.4049'	Tc = 490.9318'	Tc = 99.5036'	Tc = 68.2601'	Tc = 130.7458'	Tc = 0.0001'
R = 713.0000'	R = 380.0000'	R = 332.0000'	R = 75.0000'	R = 7500.0000'	R = 65.0000'
DS = 35 MPH	DS = 35 MPH	DS = 25 MPH			

5/26/20

PROFILE 1





Appendix K

Mitigation Commitment

COASTAL CAROLINA
Regional Airport
Andrew Shorter, C.M.
Airport Director

200 Terminal Drive
New Bern, NC 28564

www.linkedin.com/company/flyewn
www.Facebook.com/flyewn
www.flyEWN.com

252.638.8591
Fax 252.638.5930

May 2, 2025

Lopa Naik, P.E.
Environmental Protection Specialist
FAA, Memphis Airports District Office
2600 Thousand Oaks Blvd, Ste 2250
Memphis, TN 38118-2462

SUBJECT: Mitigation Commitment for Proposed EWN Runway 4-22 Improvement Program

Dear Ms. Naik:

The Coastal County Regional Airport, Airport Authority, and Craven County are committed to mitigating impacts to jurisdictional waters of the U.S. resulting from the Proposed EWN Runway 4-22 Improvement Program, as required for approval of the Environmental Assessment, as well as authorization under Section 401 and 404 of the Clean Water Act and the North Carolina Coastal Management Act.

The mitigation plan for the estimated 778 linear feet of stream and 1.97 acres of wetland impacts will be formalized during future design phases and based on review of current credit availability, as well as coordination with the U.S. Army Corps of Engineers and other environmental agencies. However, cursory evaluation by the project team indicates that the anticipated mitigation requirements could be met by a combination of:

1. Mitigation Bank Credit Purchases
· Primary Service Area: Brices Creek Mitigation Bank and RES Neu-Con Umbrella Bank – Marston currently have available riparian & non-riparian wetland credits
· Secondary Service Area: Turtle Creek Mitigation Bank currently has available warm water stream credits

2. Permittee Responsible Mitigation
· If necessary, Craven County owns multiple parcels adjacent to Scotts Creek, north of the proposed project, that may provide opportunities to mitigate tidal impacts

We greatly appreciate your assistance with this critical improvement program at Coastal Carolina Regional Airport. Please let me know if additional information is needed regarding our commitment to mitigate the associated wetland and stream impacts.

Thank you,
Andrew Shorter