

# **ENVIRONMENTAL IMPACT STATEMENT**

---

## **SPACEX STARSHIP-SUPER HEAVY LAUNCH VEHICLE AT LAUNCH COMPLEX 39A**

at the Kennedy Space Center, Merritt Island, Florida

Final, Volume II, Appendix C.1, Part 3

**January 2026**



**Federal Aviation  
Administration**

THIS PAGE INTENTIONALLY LEFT BLANK.

## TABLE OF CONTENTS

<b>Appendix C</b>	<b>Resource Area Supporting Information .....</b>	<b>C-1</b>
C.1	Noise Assessment and Noise Assessment Appendix.....	C-1
C.1.1	Noise Assessment .....	C-2
C.1.2	Noise Assessment Appendix.....	C-115
C.1.3	Noise Assessment Errata .....	C-383
C.2	Air Quality Assessment.....	C-384
C.2.1	Engine Emissions Analysis .....	C-384
C.2.2	ACAM Construction Analysis .....	C-387
C.3	Biological Resources Supplemental Information.....	C-524
C.3.1	State-Listed Species .....	C-524
C.3.2	Migratory Bird Species.....	C-526
C.3.3	Marine Mammal Species in the Study Area .....	C-529



THIS PAGE INTENTIONALLY LEFT BLANK.



### 3.1.2 Rocket Noise: $L_{Amax}$ , SEL, and $L_{max}$ Contour Figures: Summer Day

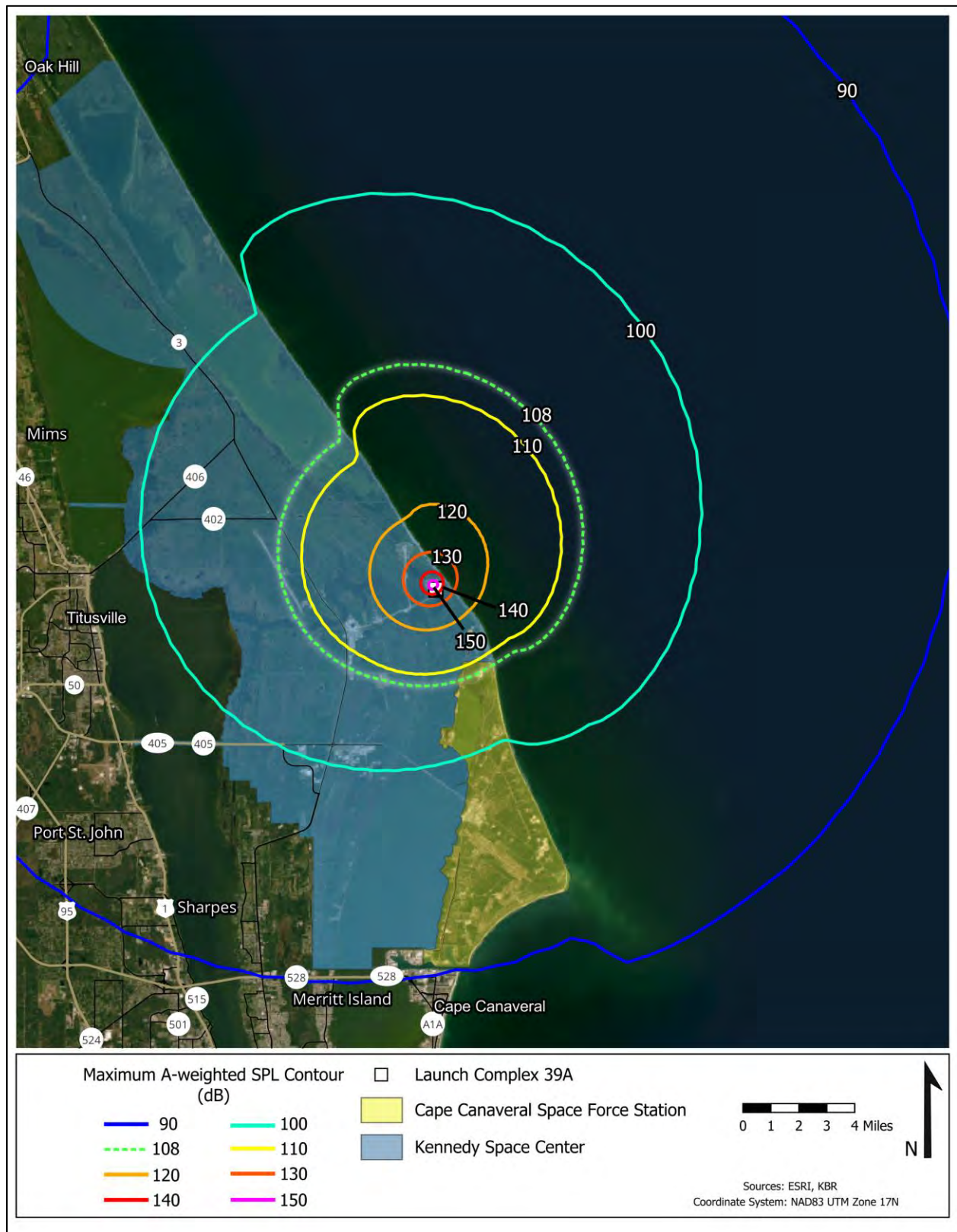
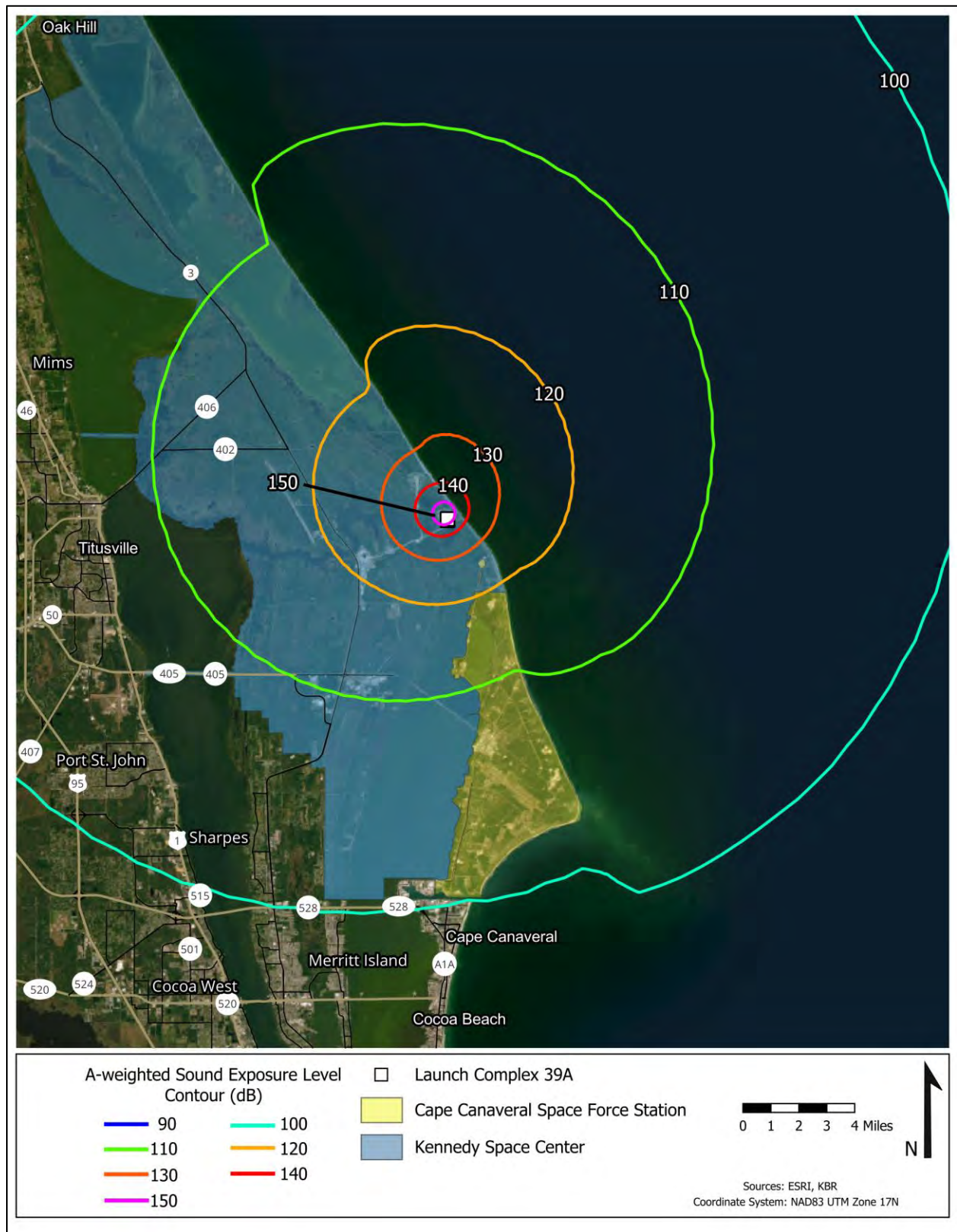


Figure 61. Starship Orbital Launch from LC-39A: Maximum A-Weighted Sound Levels: Summer Day



**Figure 62. Starship Orbital Launch from LC-39A: Sound Exposure Levels: Summer Day**



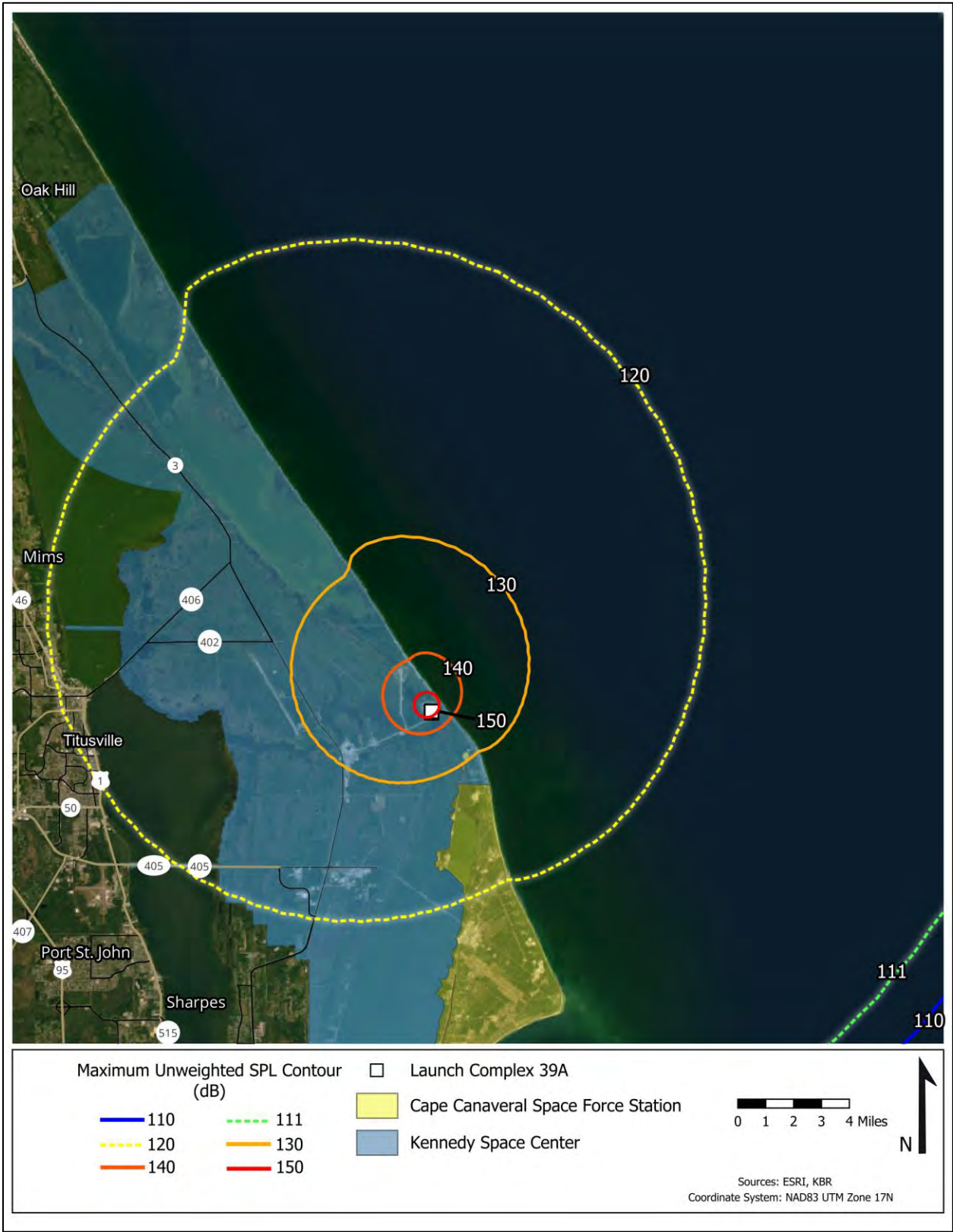
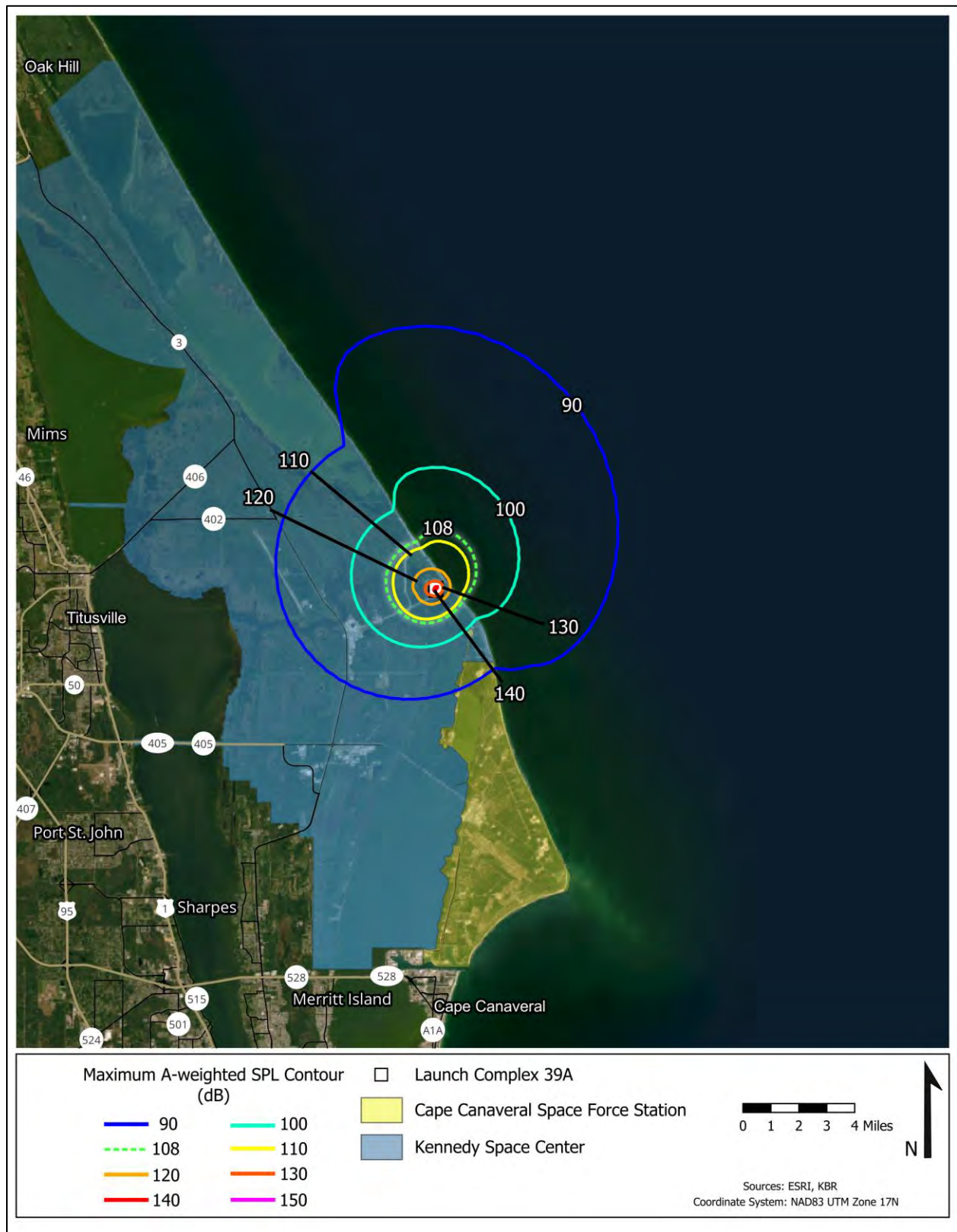


Figure 63. Starship Orbital Launch from LC-39A: Maximum Unweighted Sound Levels: Summer Day



**Figure 64. Starship Spacecraft Landing at LC-39A: Maximum A-Weighted Sound Levels: Summer Day**

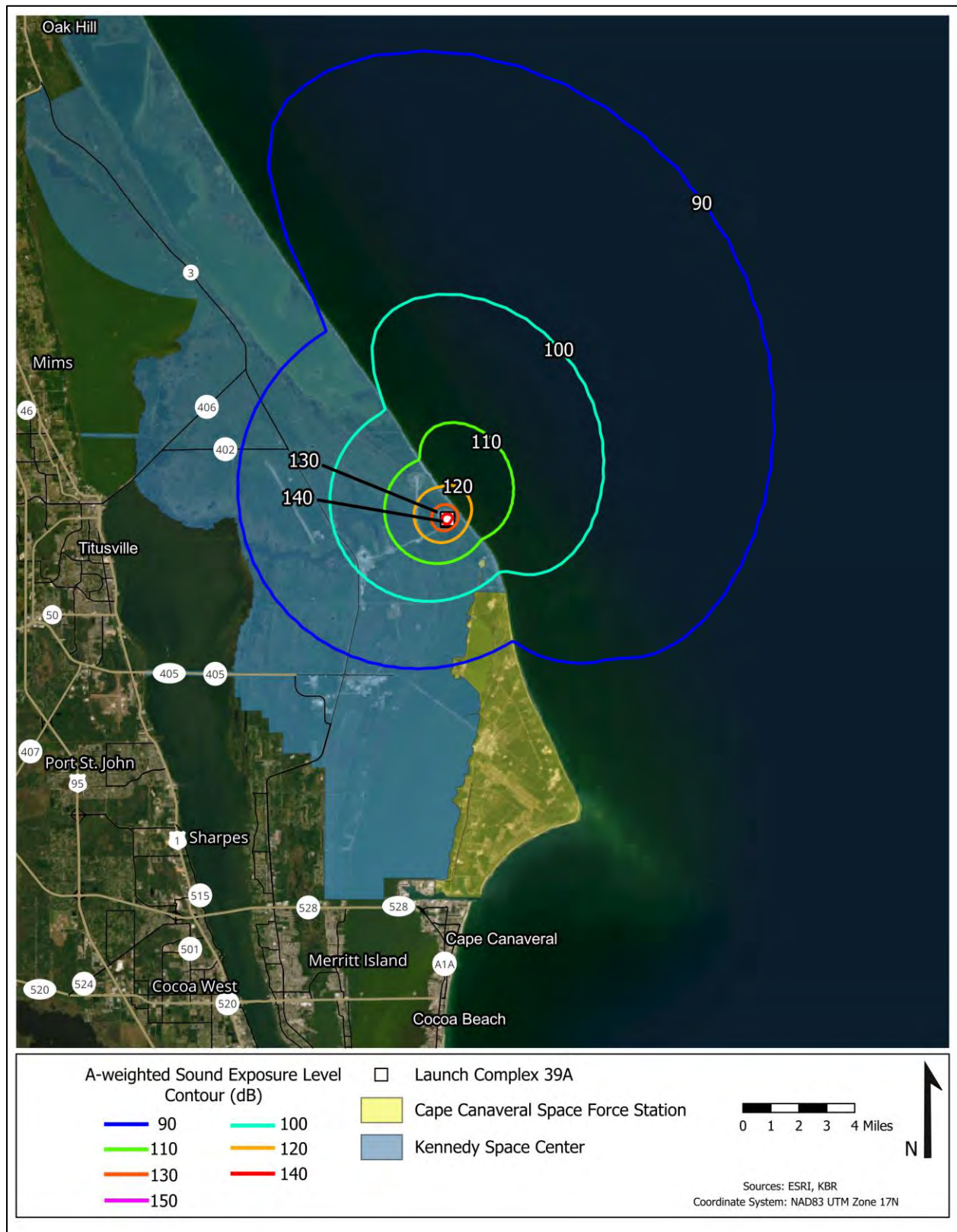


Figure 65. Starship Spacecraft Landing at LC-39A: Sound Exposure Levels: Summer Day



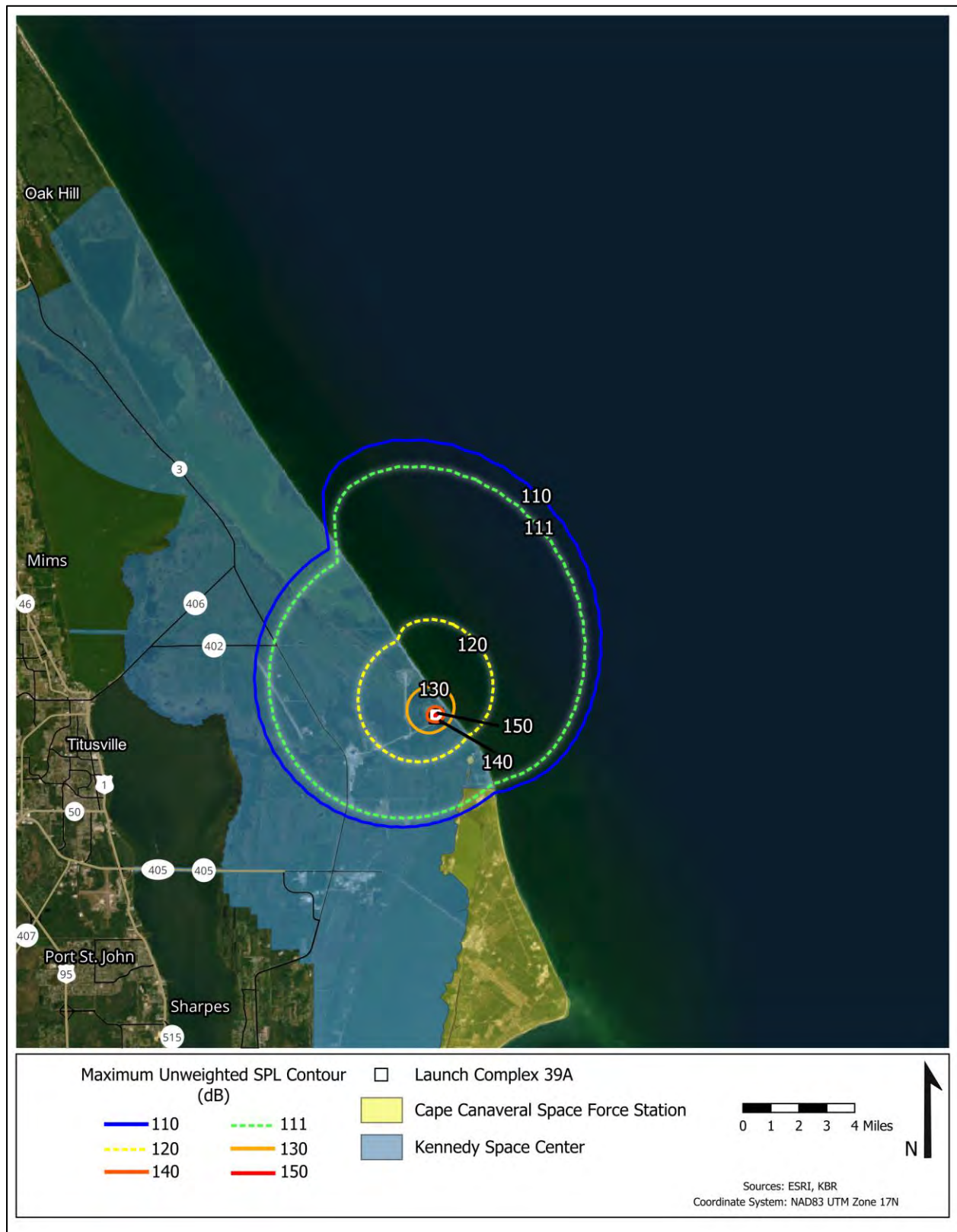


Figure 66. Starship Spacecraft Landing at LC-39A: Maximum Unweighted Sound Levels: Summer Day

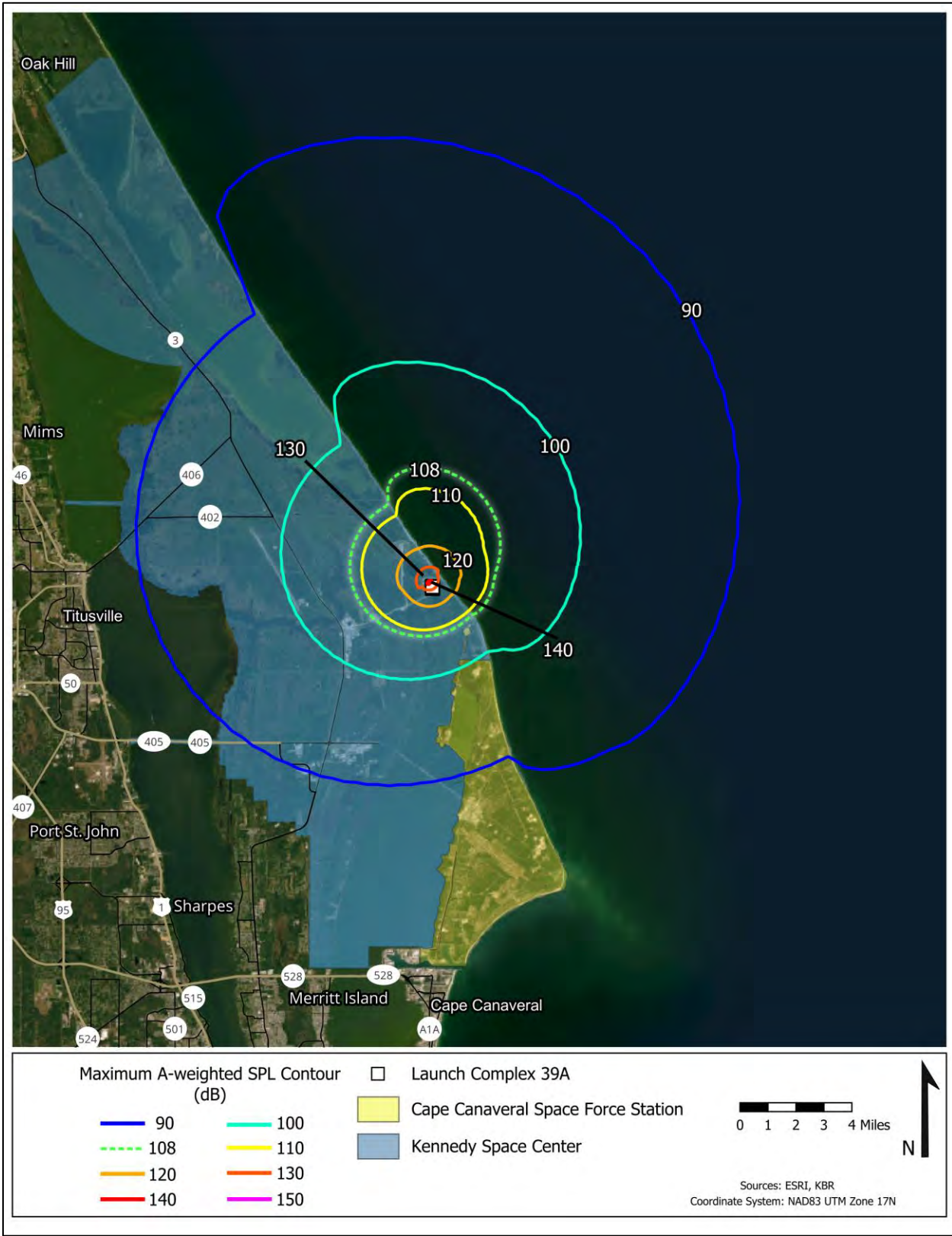


Figure 67. Super Heavy Landing at LC-39A (Nominal): Max A-Weighted Sound Levels: Summer Day

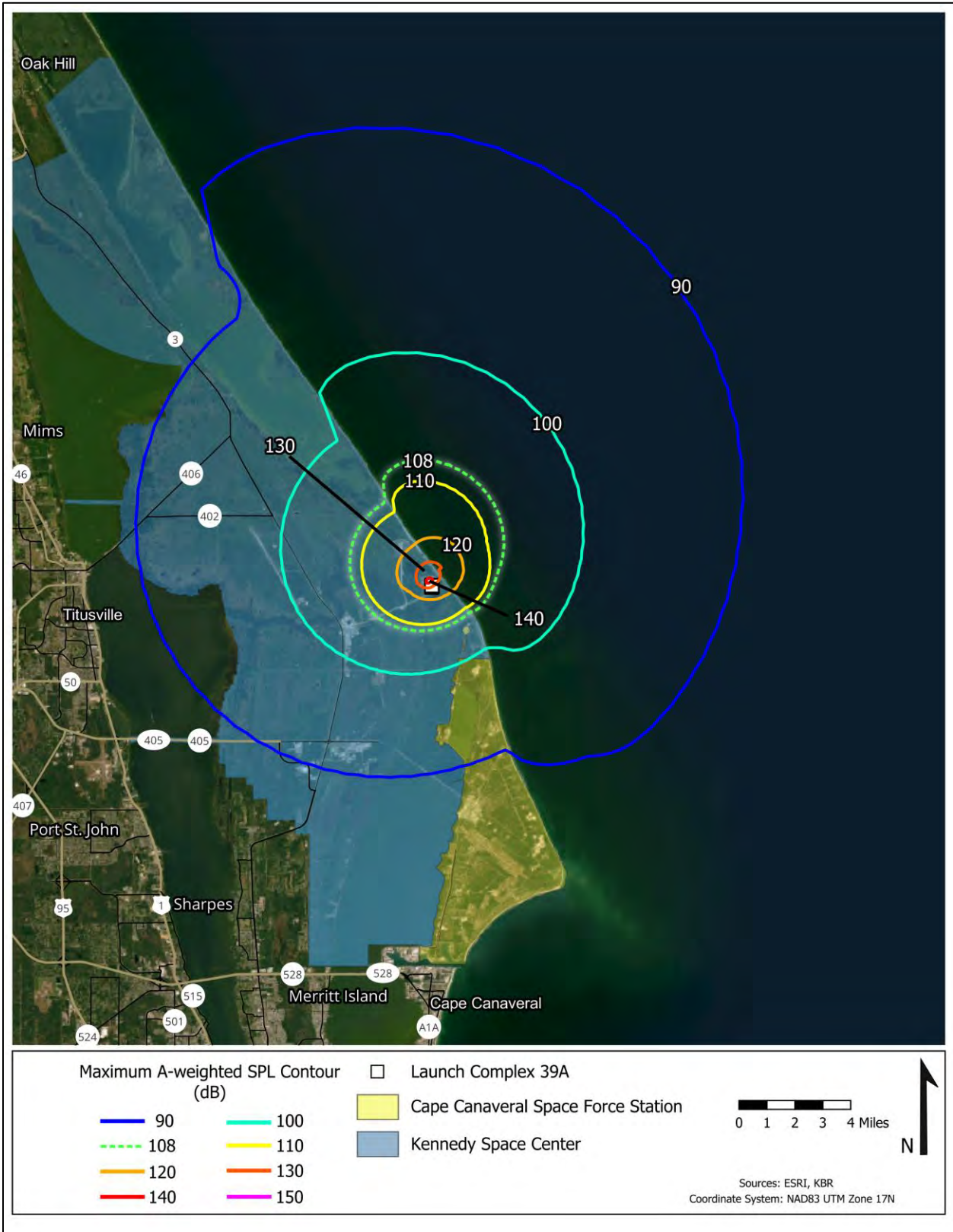


Figure 68. Super Heavy Landing at LC-39A (40-Degrees): Max A-Weighted Sound Levels: Summer Day



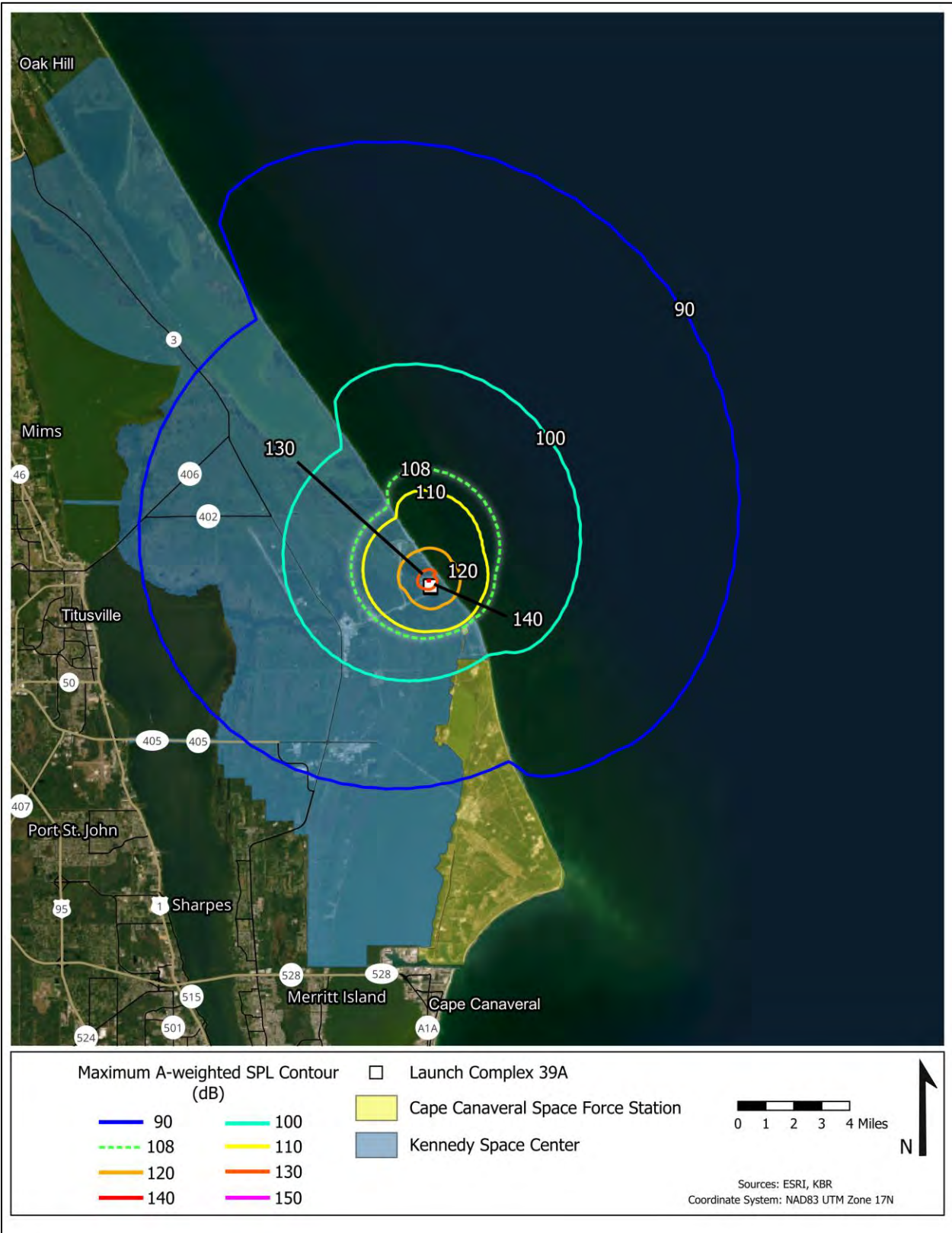


Figure 69. Super Heavy Landing at LC-39A (115-Degrees): Max A-Weighted Sound Levels: Summer Day

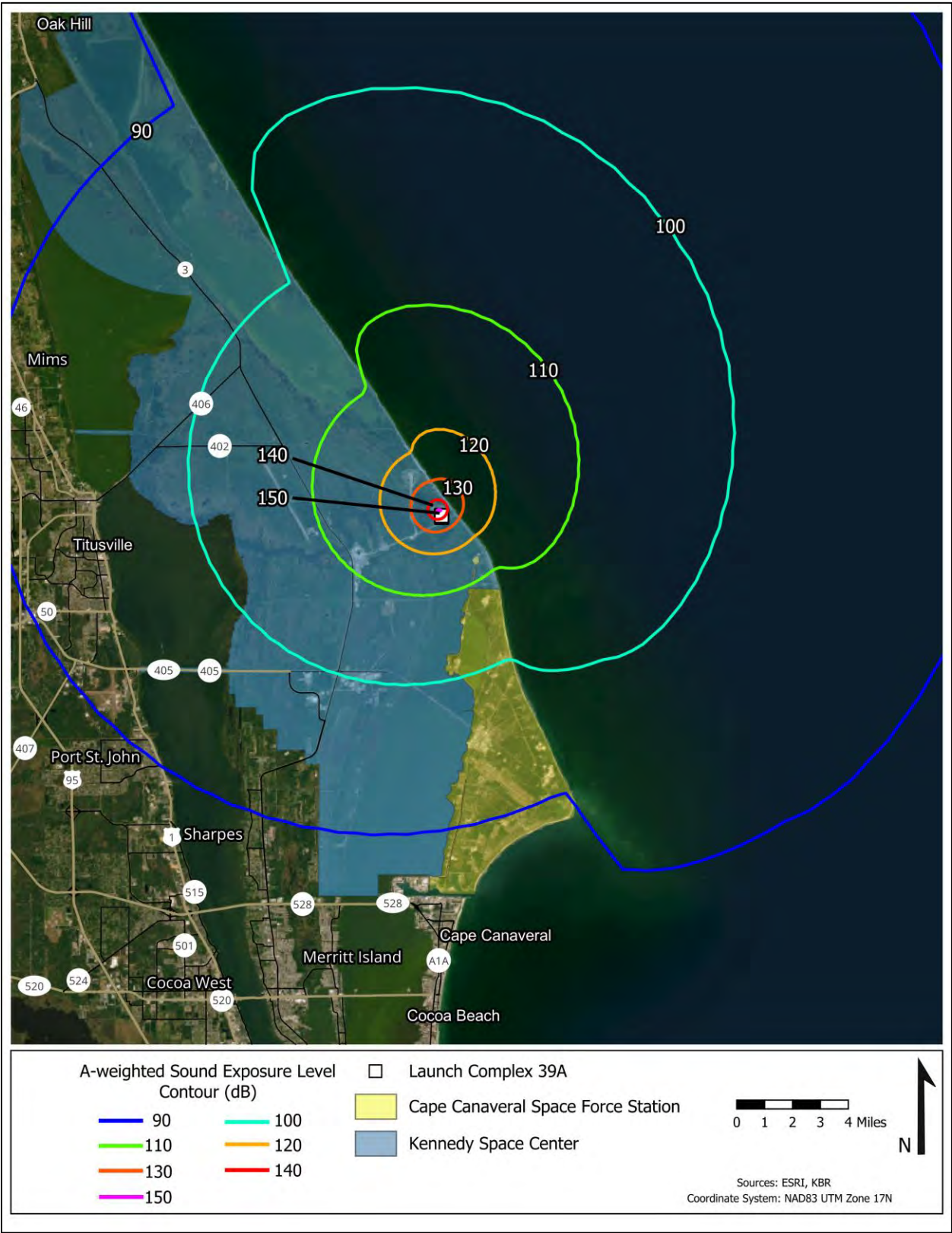


Figure 70. Super Heavy Landing at LC-39A (Nominal): Sound Exposure Levels: Summer Day



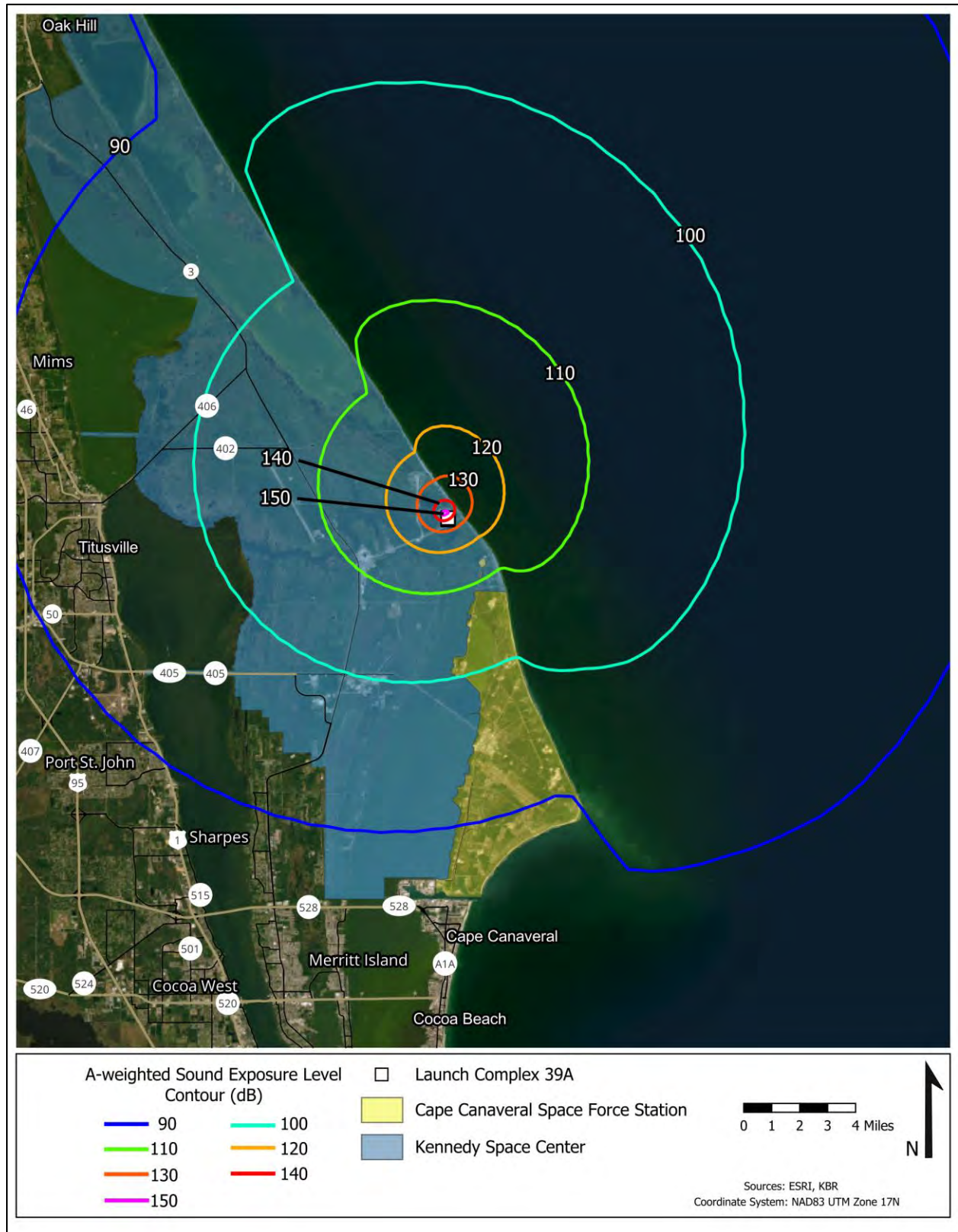


Figure 71. Super Heavy Landing at LC-39A (40-Degrees): Sound Exposure Levels: Summer Day



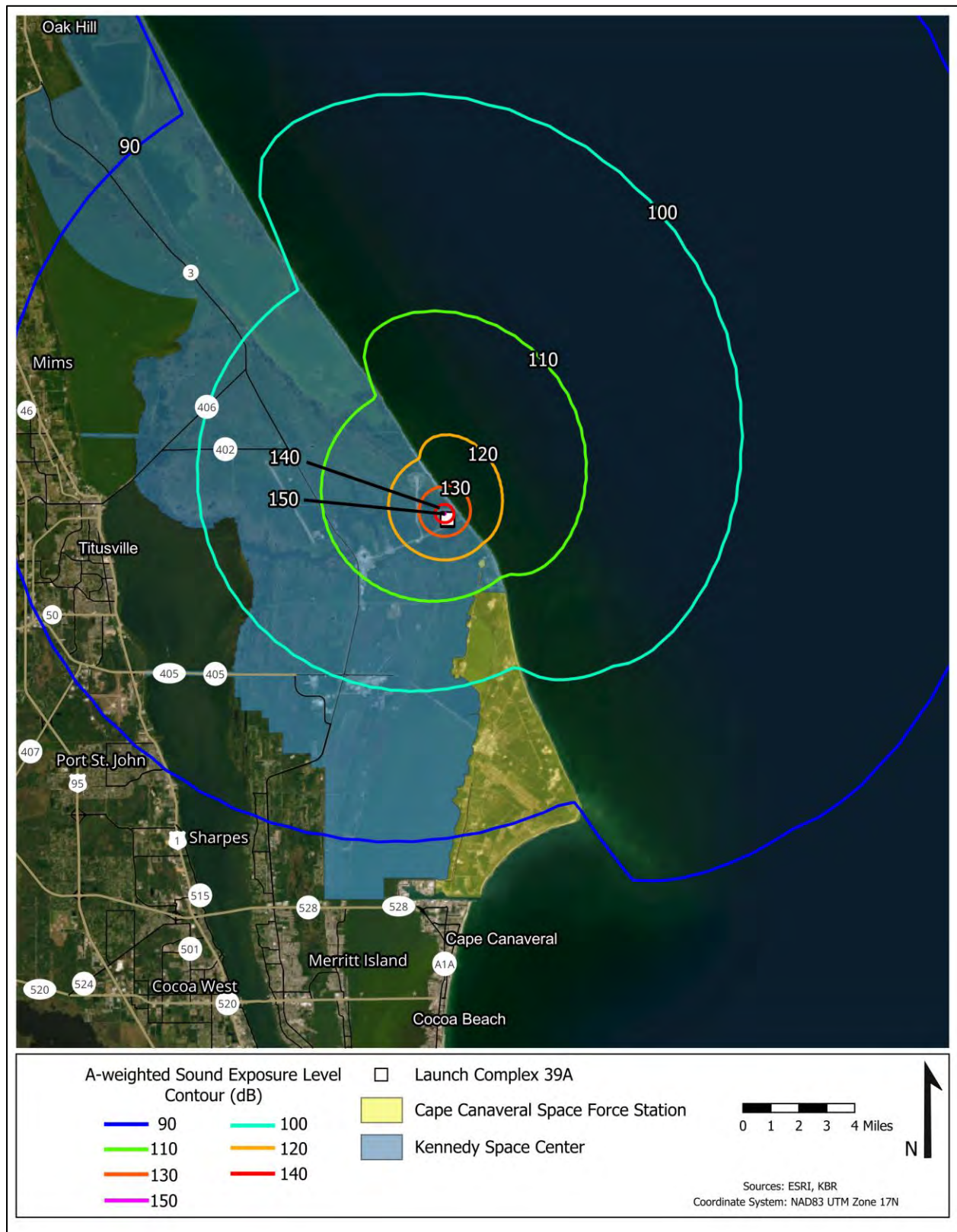


Figure 72. Super Heavy Landing at LC-39A (115-Degrees): Sound Exposure Levels: Summer Day

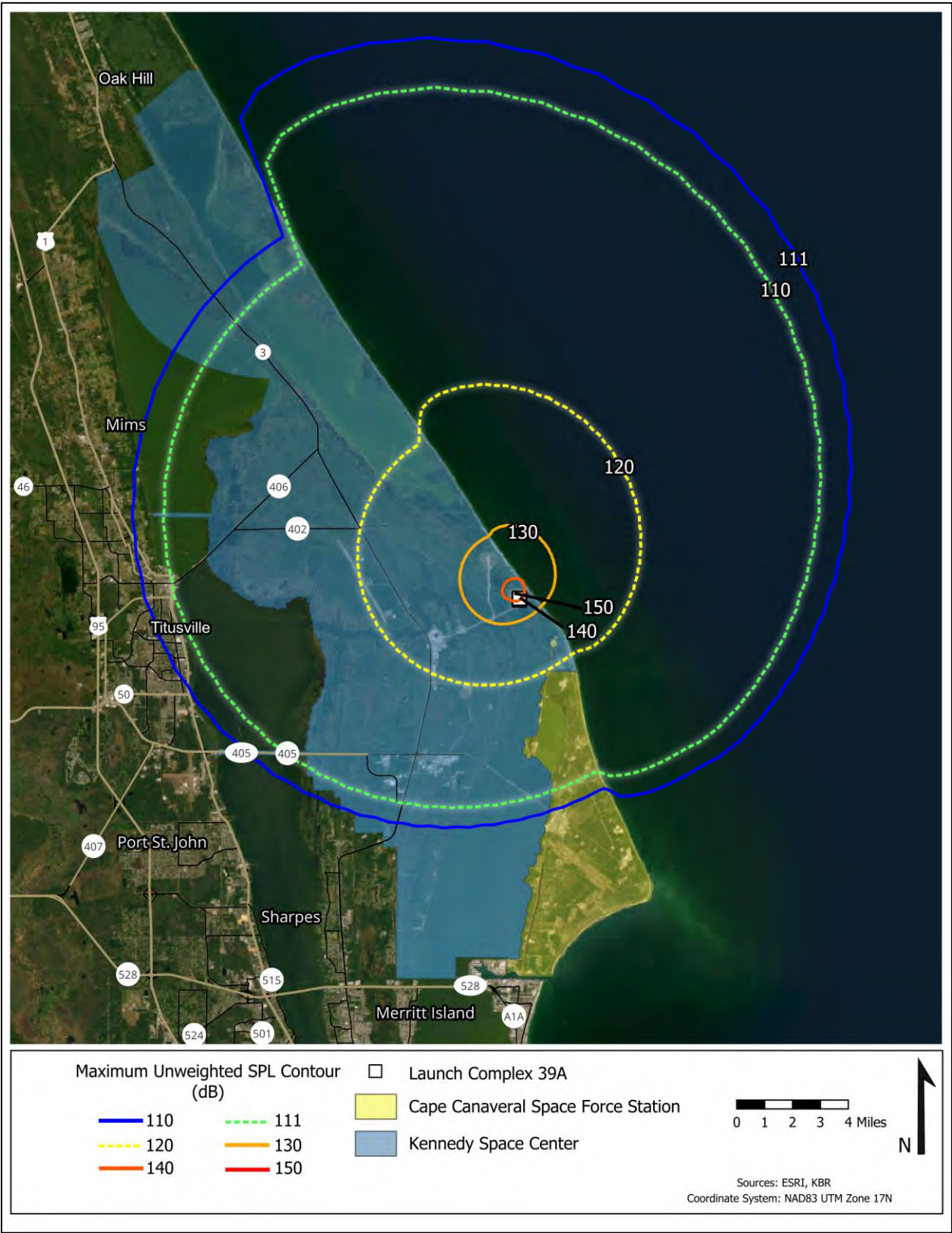
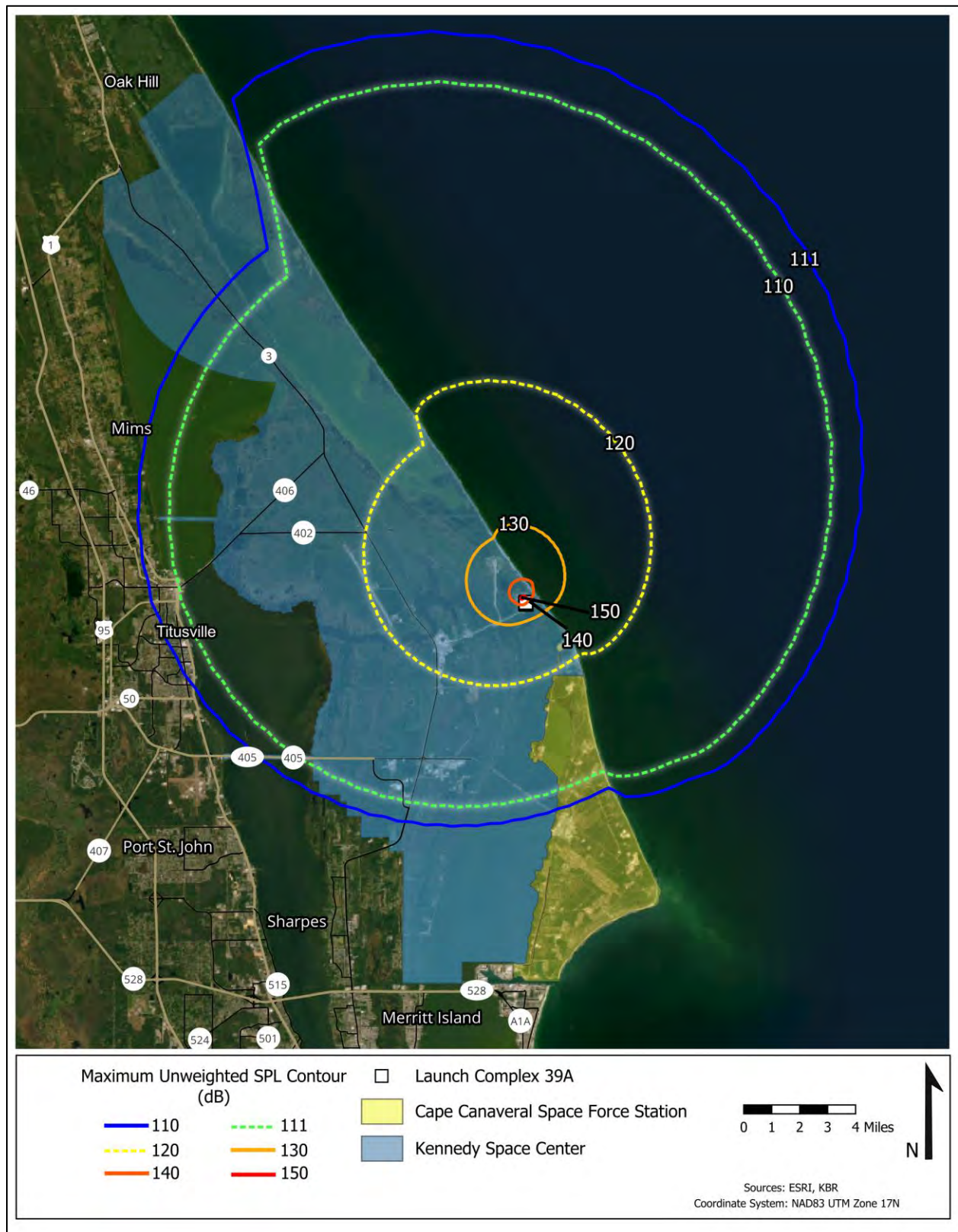


Figure 73. Super Heavy Landing at LC-39A (Nominal): Max Unweighted Sound Levels: Summer Day





**Figure 74. Super Heavy Landing at LC-39A (40-Degrees): Max Unweighted Sound Levels: Summer Day**



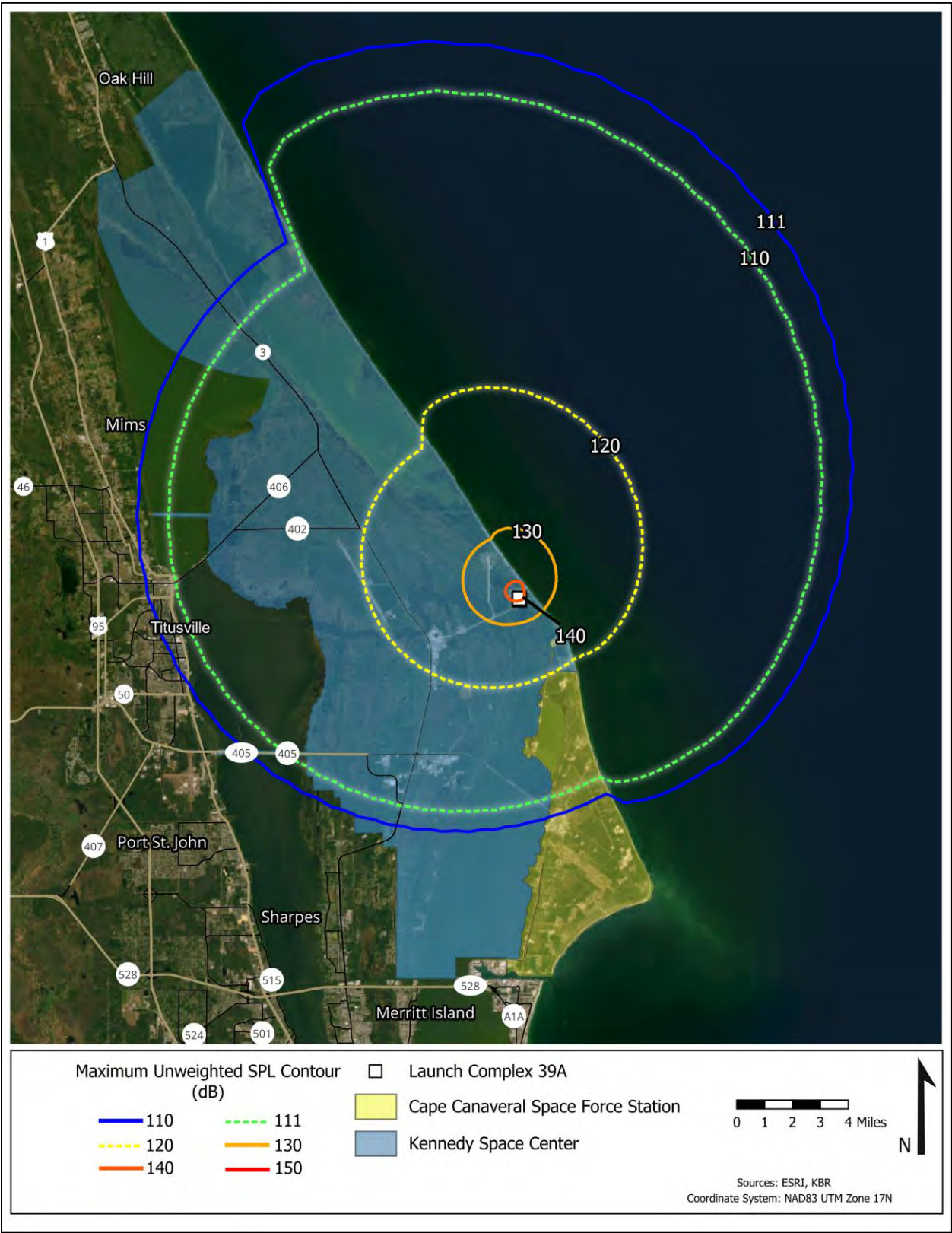


Figure 75. Super Heavy Landing at LC-39A (115-Degrees): Max Unweighted Sound Levels: Summer Day

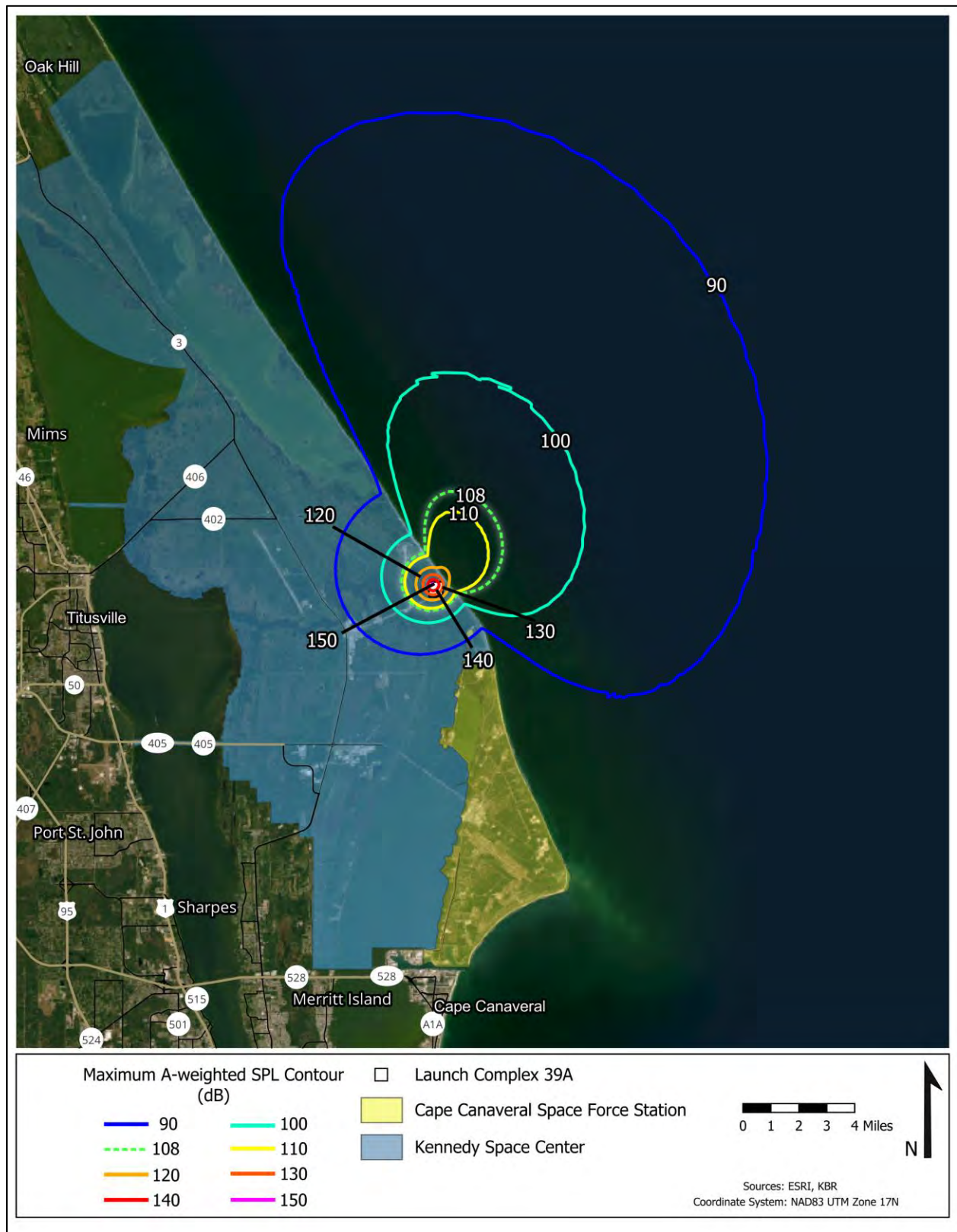
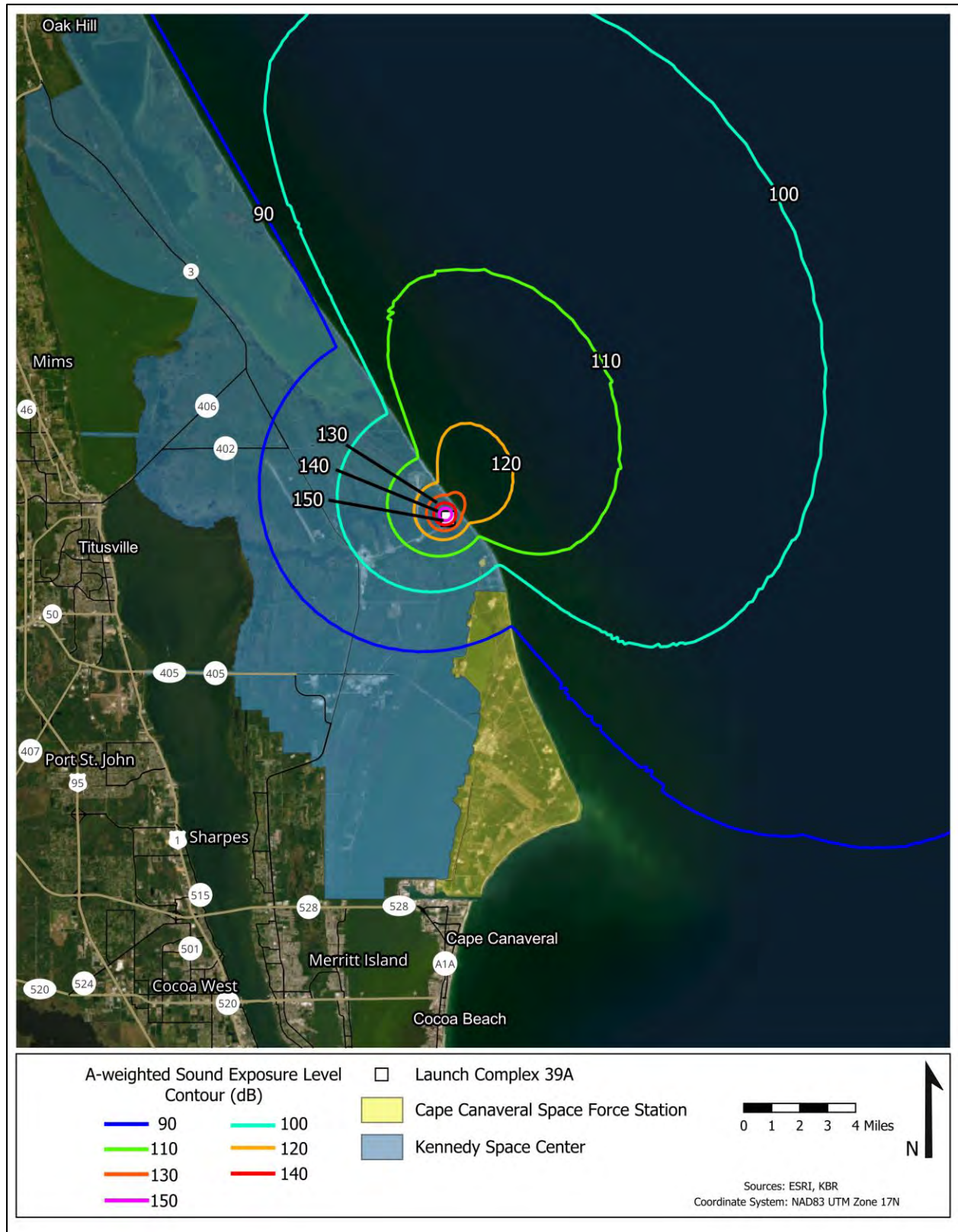


Figure 76. Starship Spacecraft Static Fire Test at LC-39A: Max A-Weighted Sound Levels: Summer Day





**Figure 77. Starship Spacecraft Static Fire Test at LC-39A: Sound Exposure Levels: Summer Day**



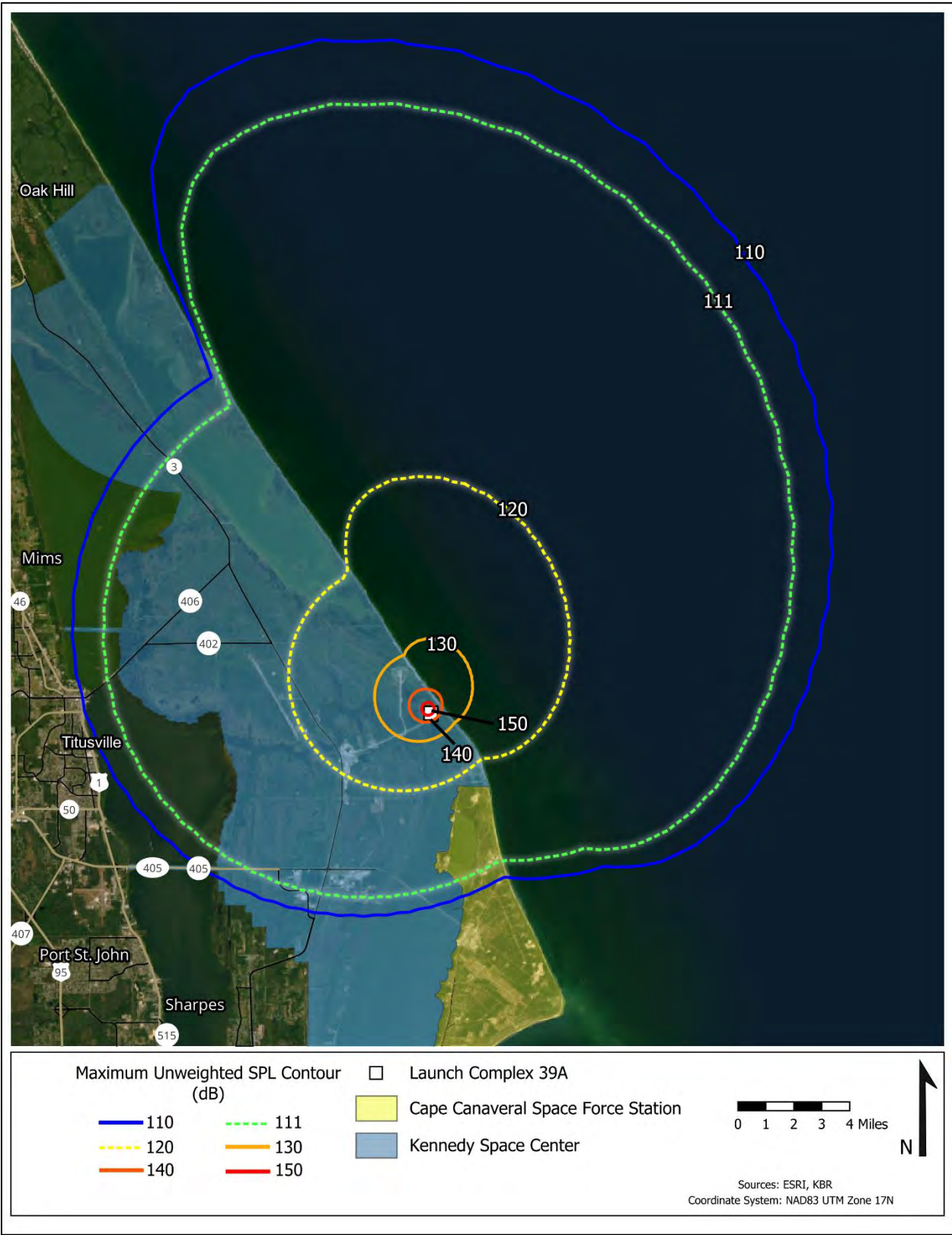


Figure 78. Starship Spacecraft Static Test at LC-39A: Max Unweighted Sound Levels: Summer Day

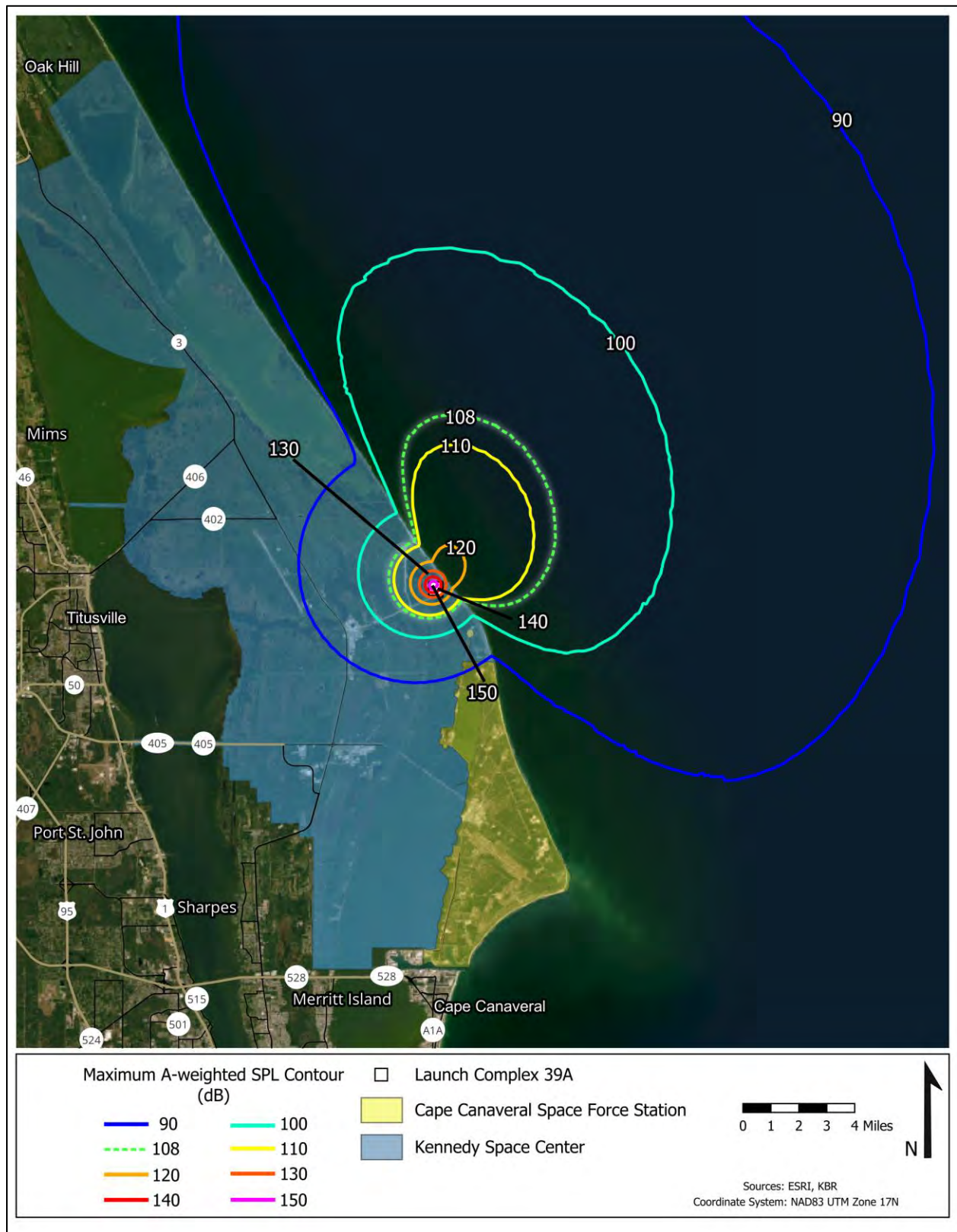
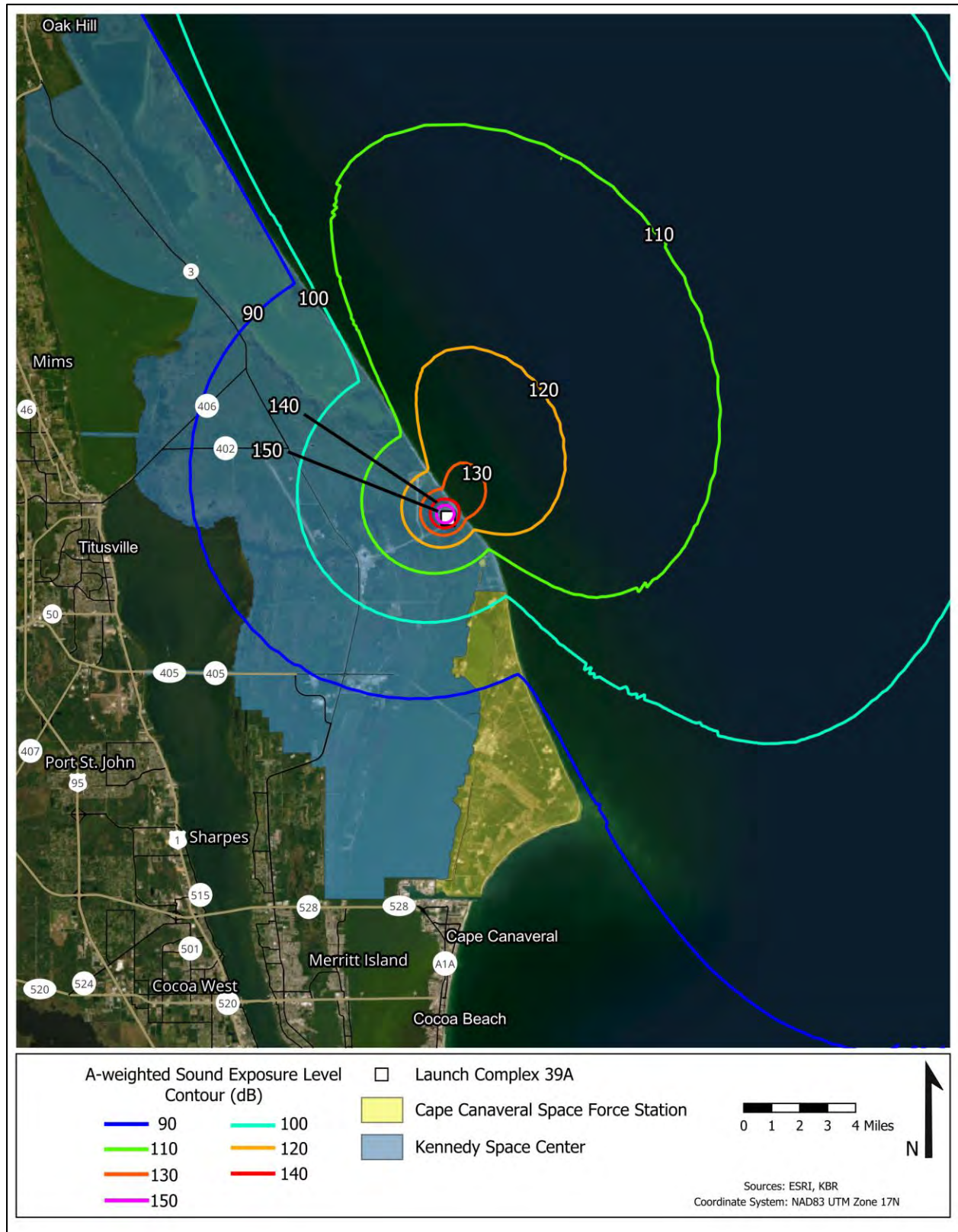


Figure 79. Super Heavy Static Fire Test at LC-39A: Maximum A-Weighted Sound Levels: Summer Day





**Figure 80. Super Heavy Static Fire Test at LC-39A: Sound Exposure Levels: Summer Day**



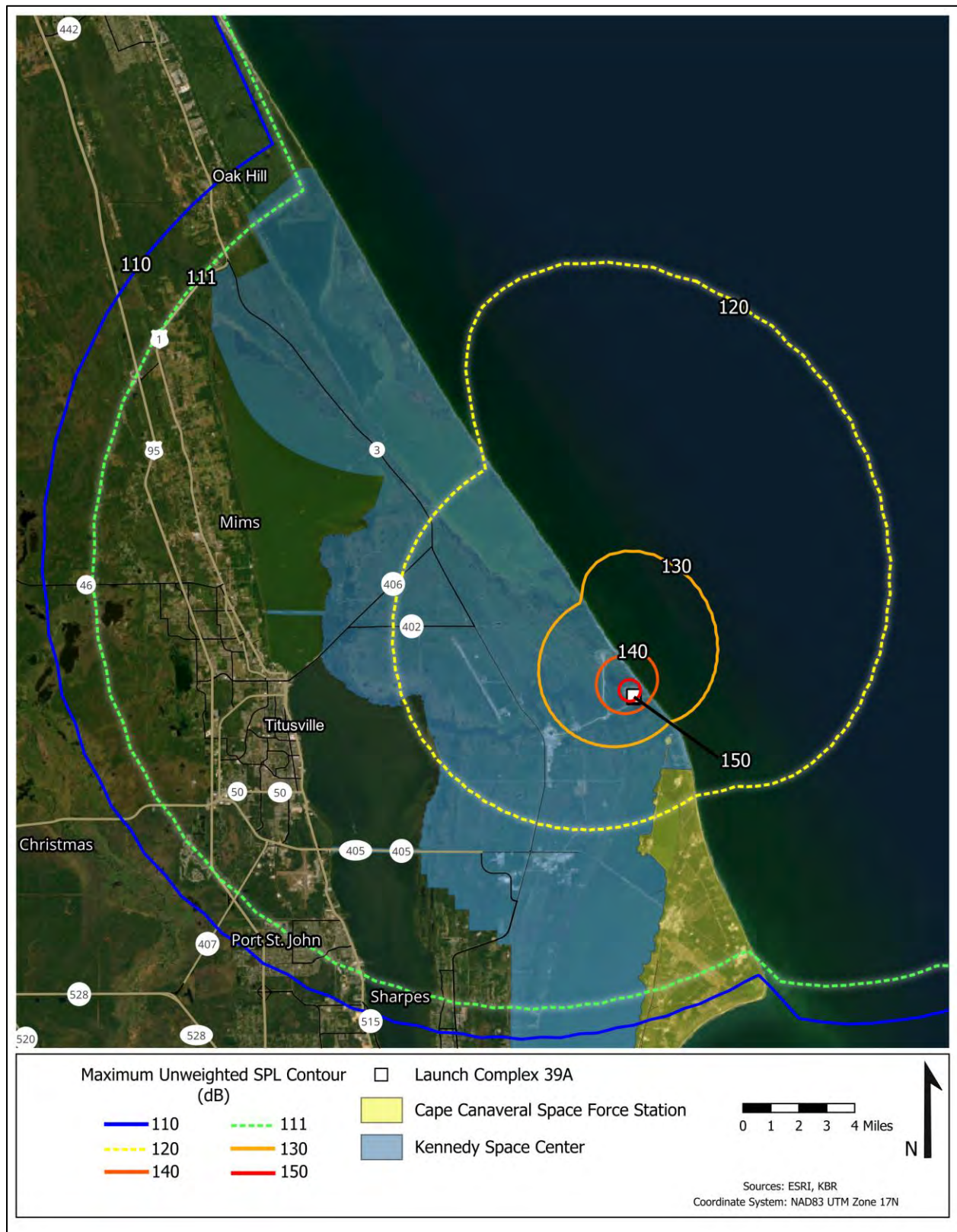


Figure 81. Super Booster Static Fire Test at LC-39A: Maximum Unweighted Sound Levels: Summer Day

### 3.1.3 Rocket Noise: $L_{Amax}$ , SEL, and $L_{max}$ Contour Figures: Summer Night

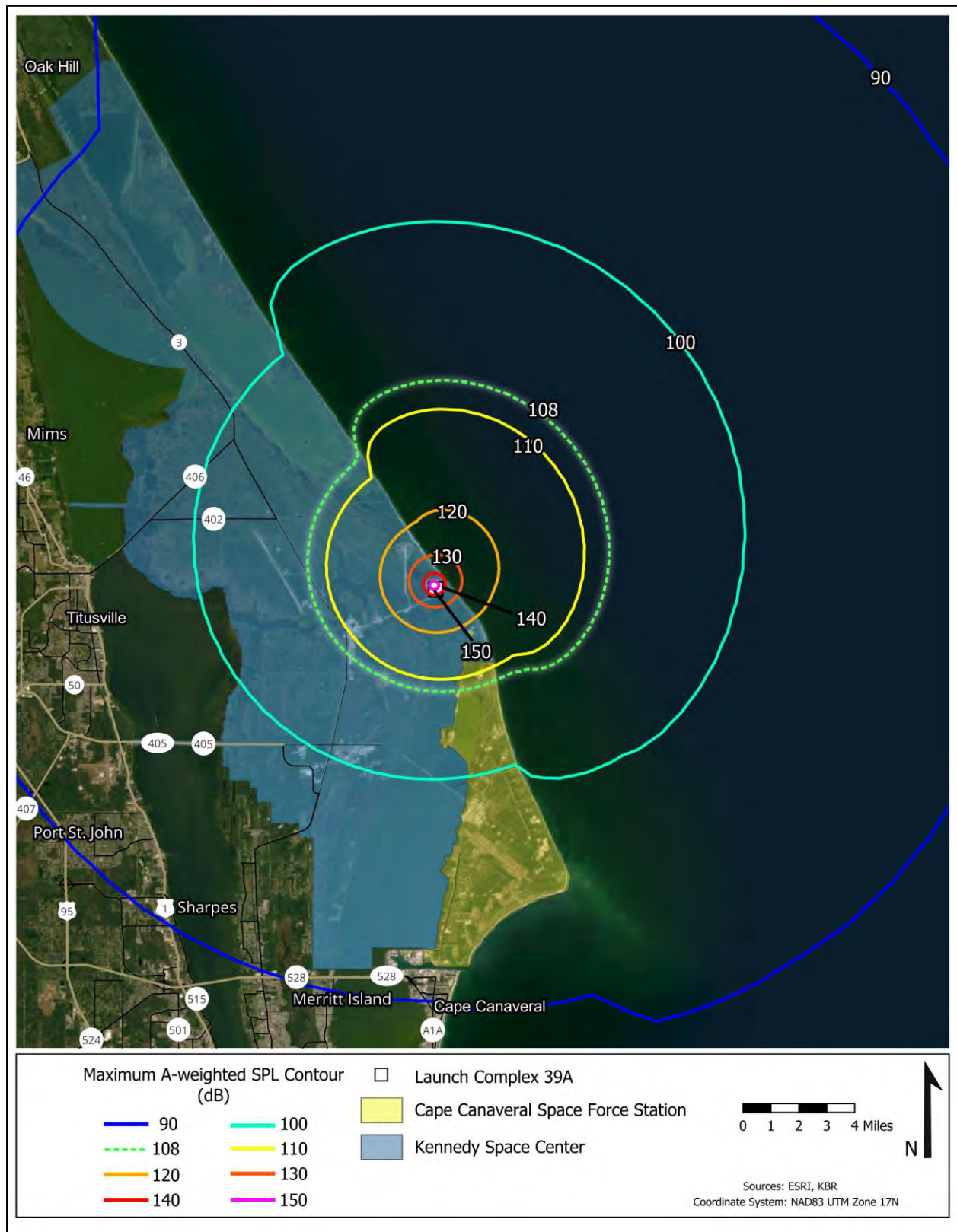
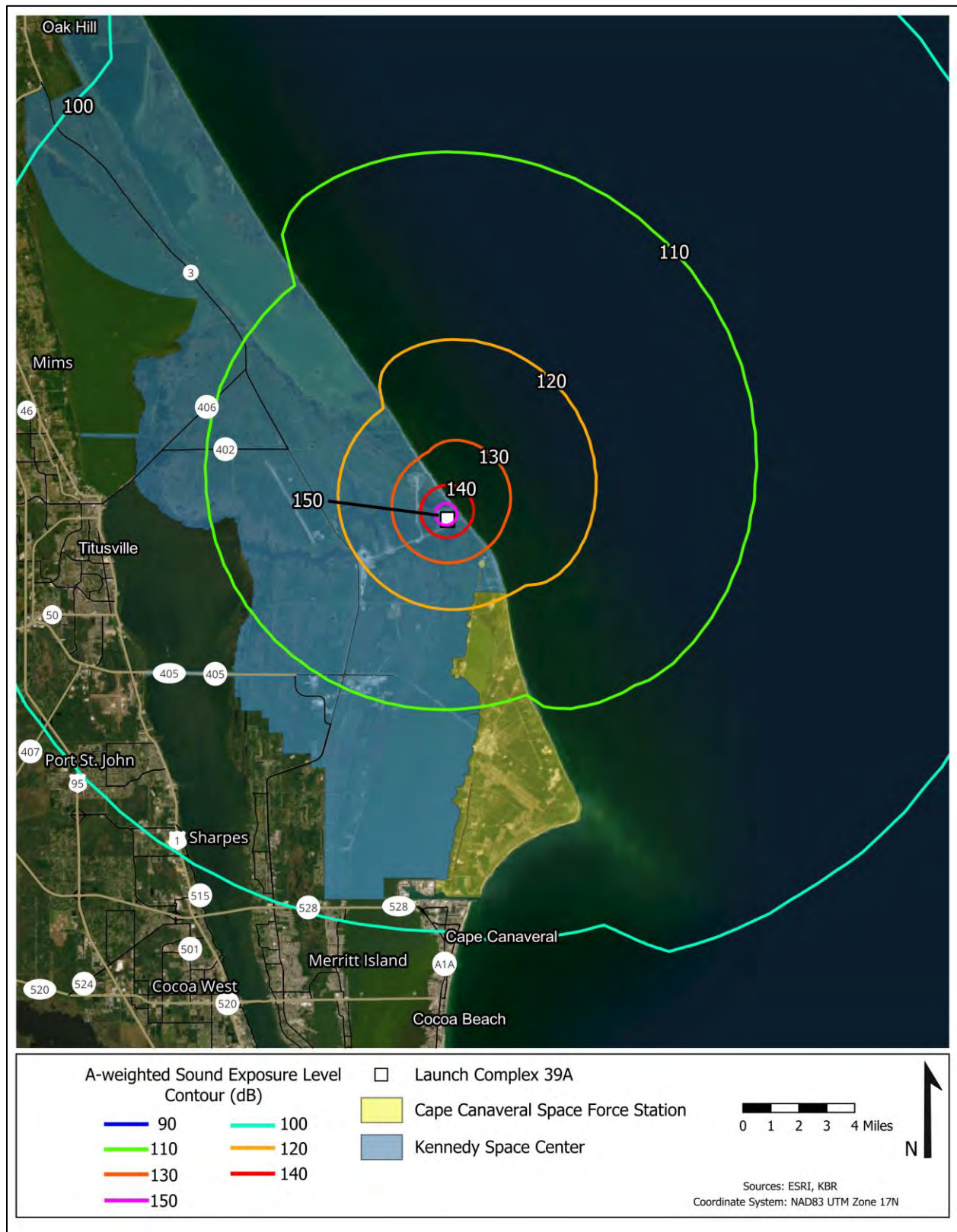


Figure 82. Starship Orbital Launch from LC-39A: Maximum A-Weighted Sound Levels: Summer Night





**Figure 83. Starship Orbital Launch from LC-39A: Sound Exposure Levels: Summer Night**

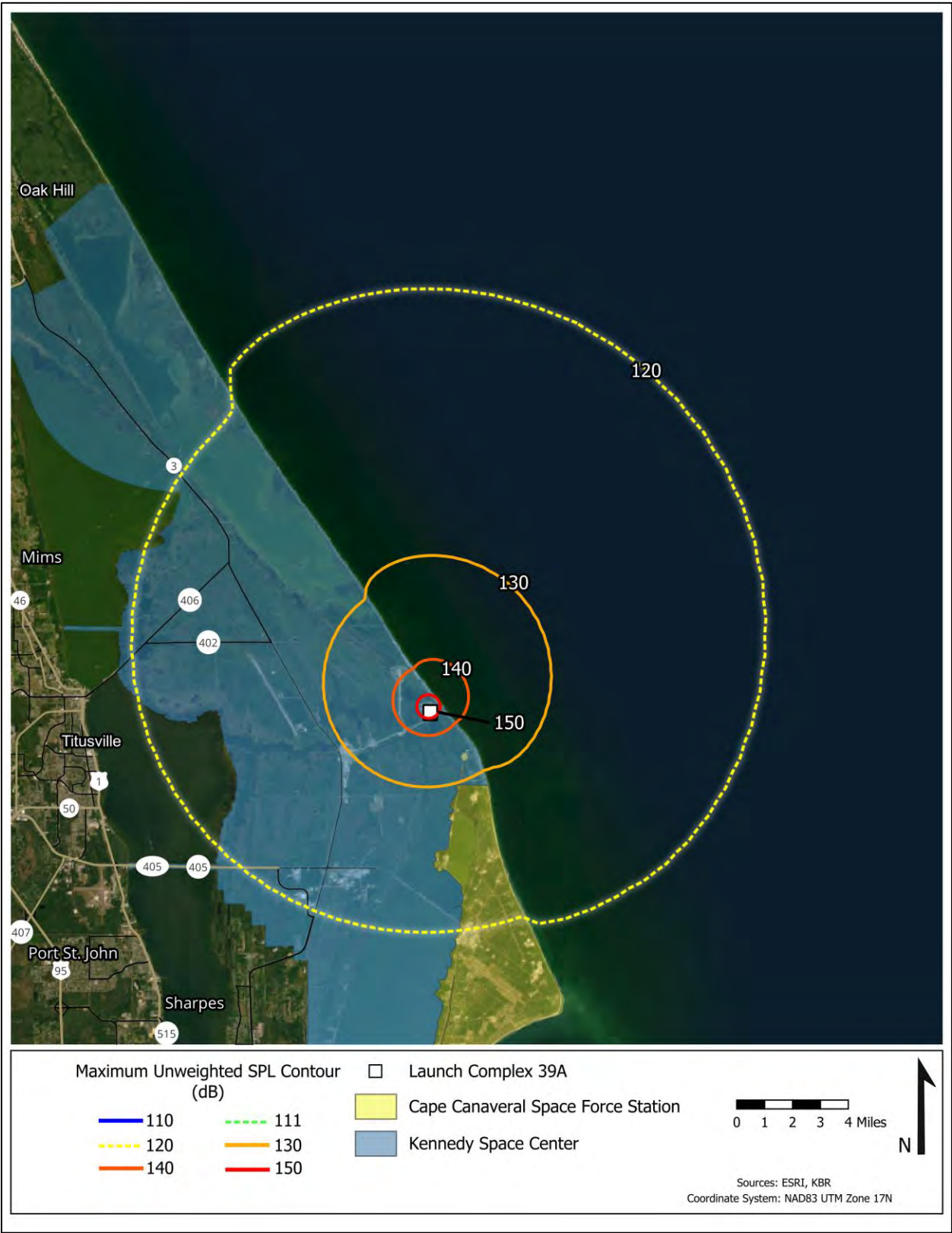
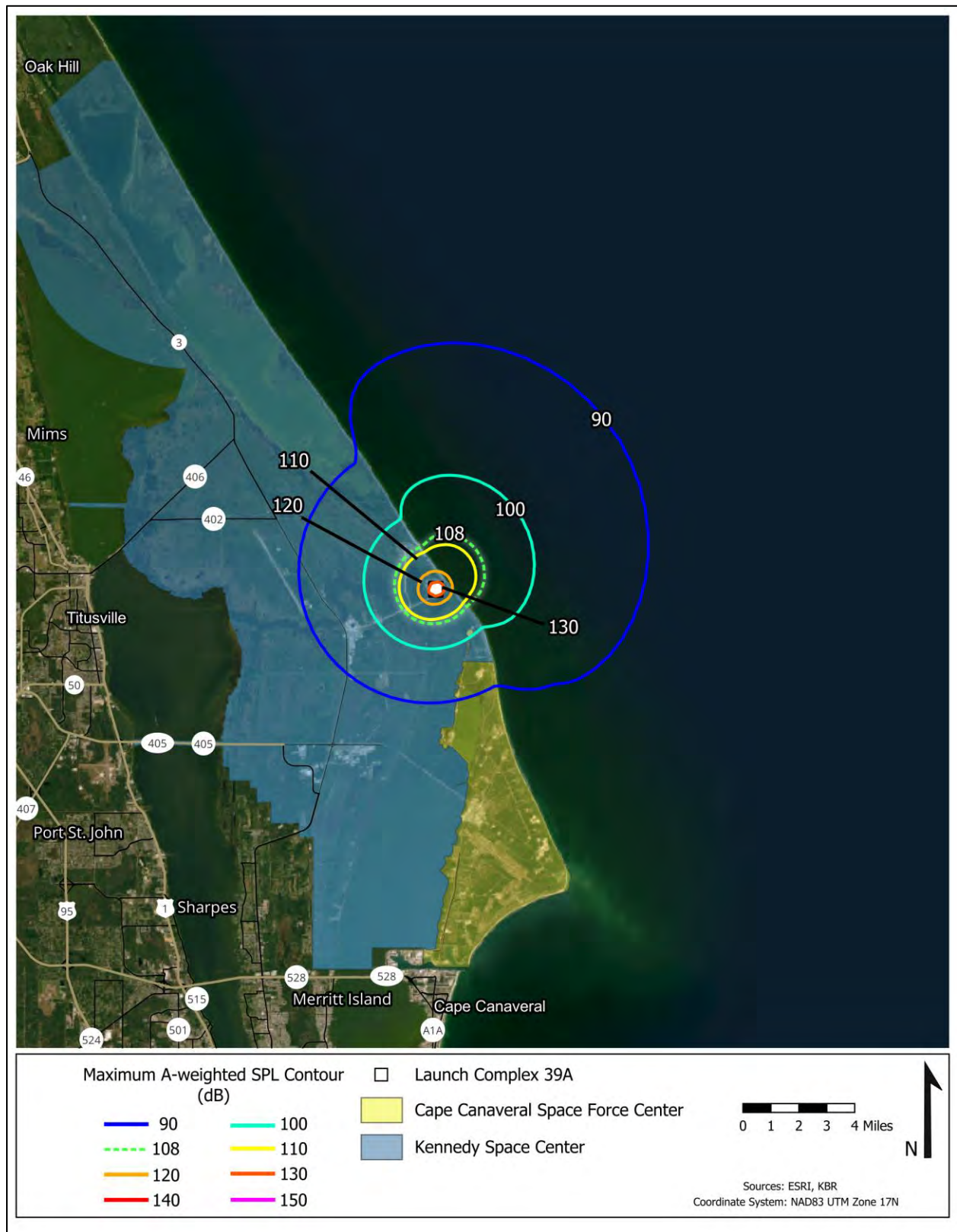
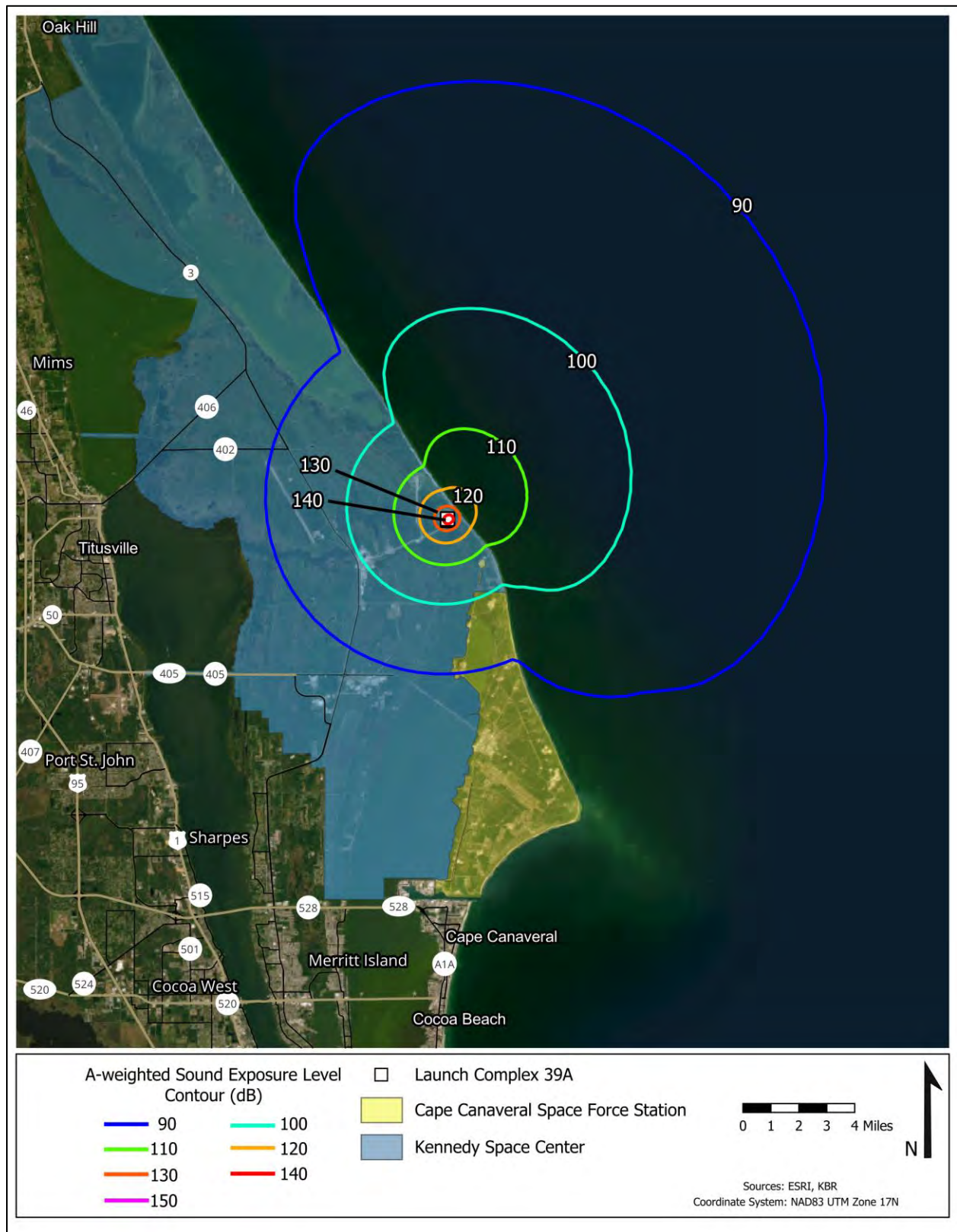


Figure 84. Starship Orbital Launch from LC-39A: Maximum Unweighted Sound Levels: Summer Night



**Figure 85. Starship Spacecraft Landing at LC-39A: Maximum A-Weighted Sound Levels: Summer Night**





**Figure 86. Starship Spacecraft Landing at LC-39A: Sound Exposure Levels: Summer Night**

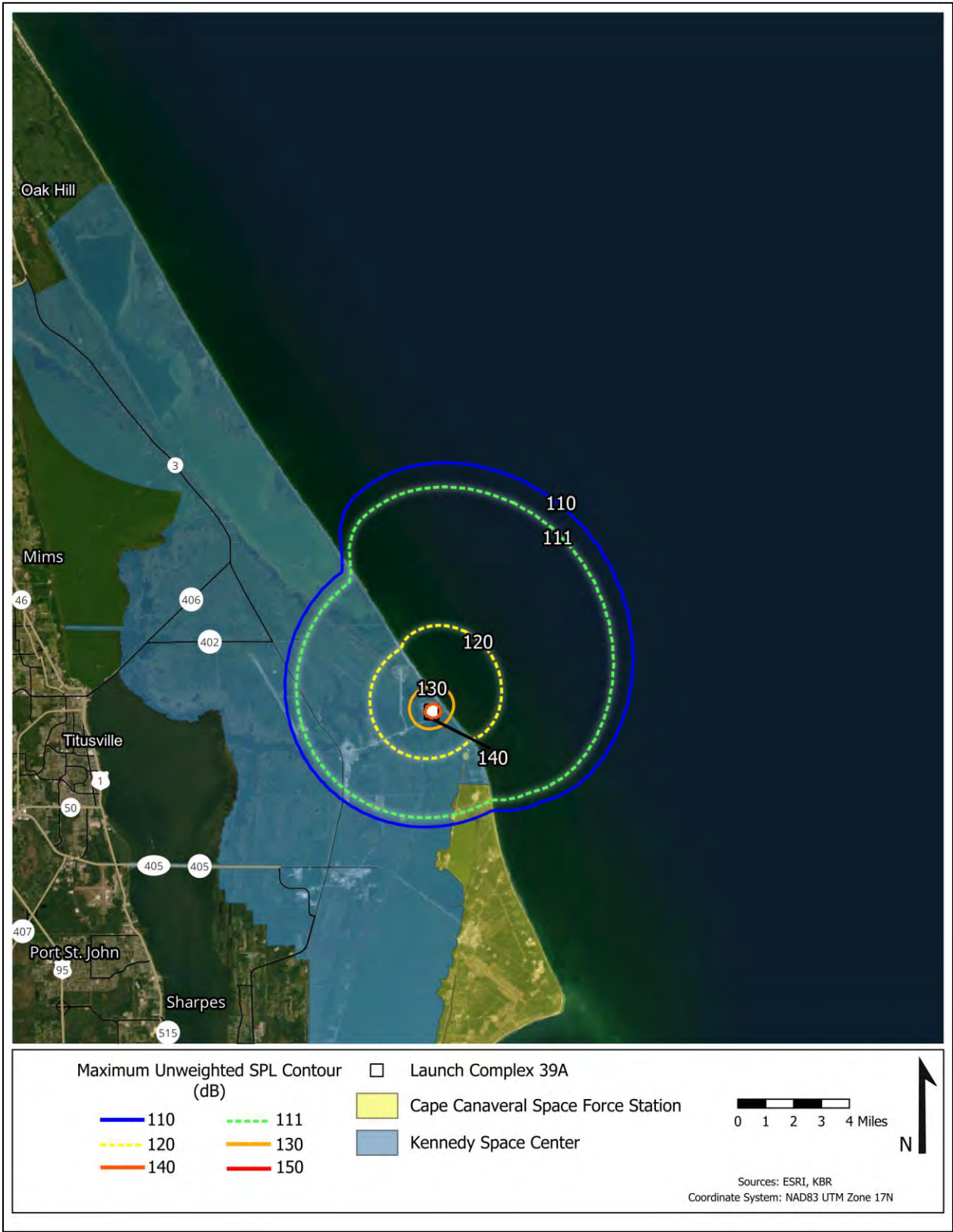


Figure 87. Starship Spacecraft Landing at LC-39A: Maximum Unweighted Sound Levels: Summer Night

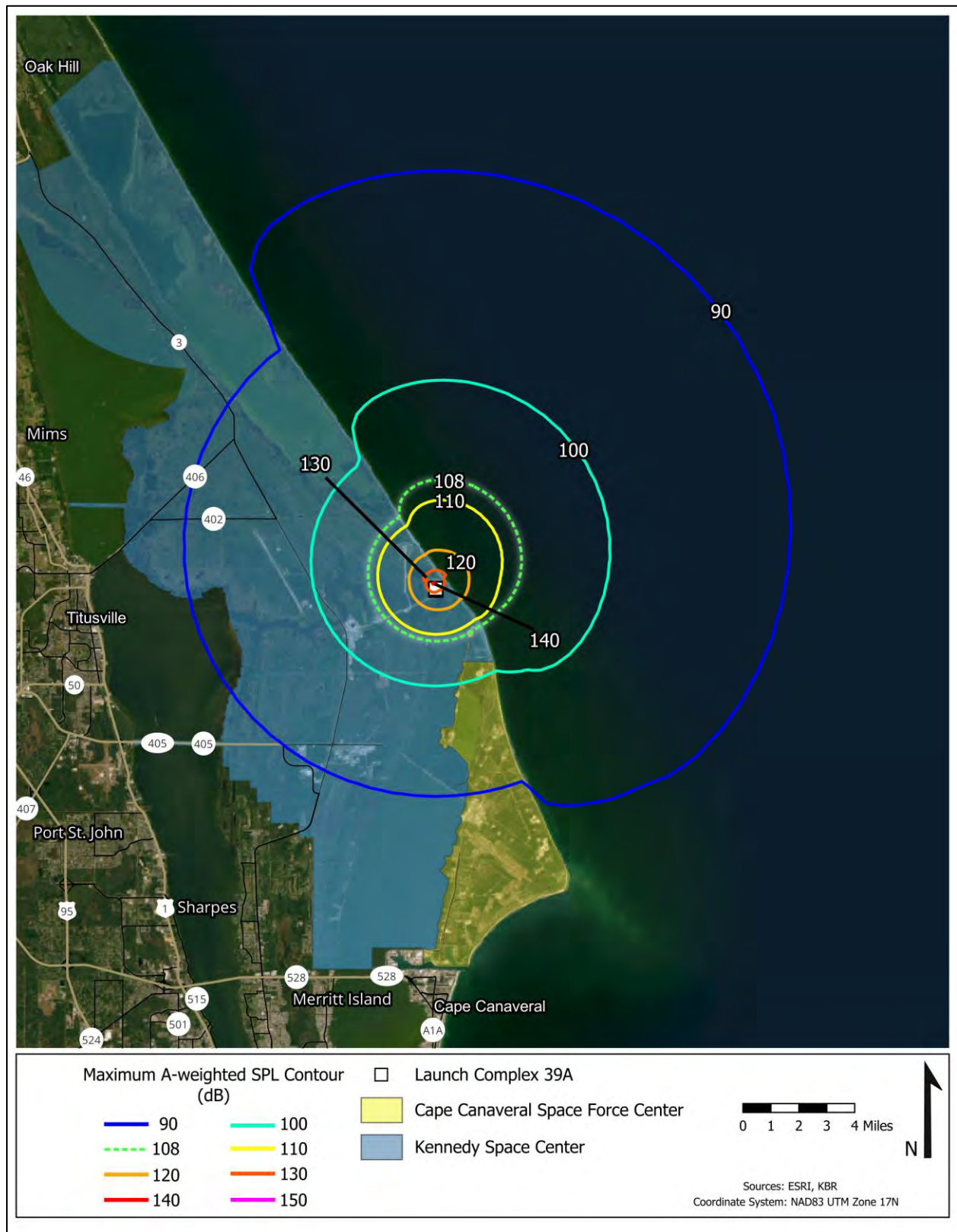


Figure 88. Super Heavy Landing at LC-39A (Nominal): Max A-Weighted Sound Levels: Summer Night



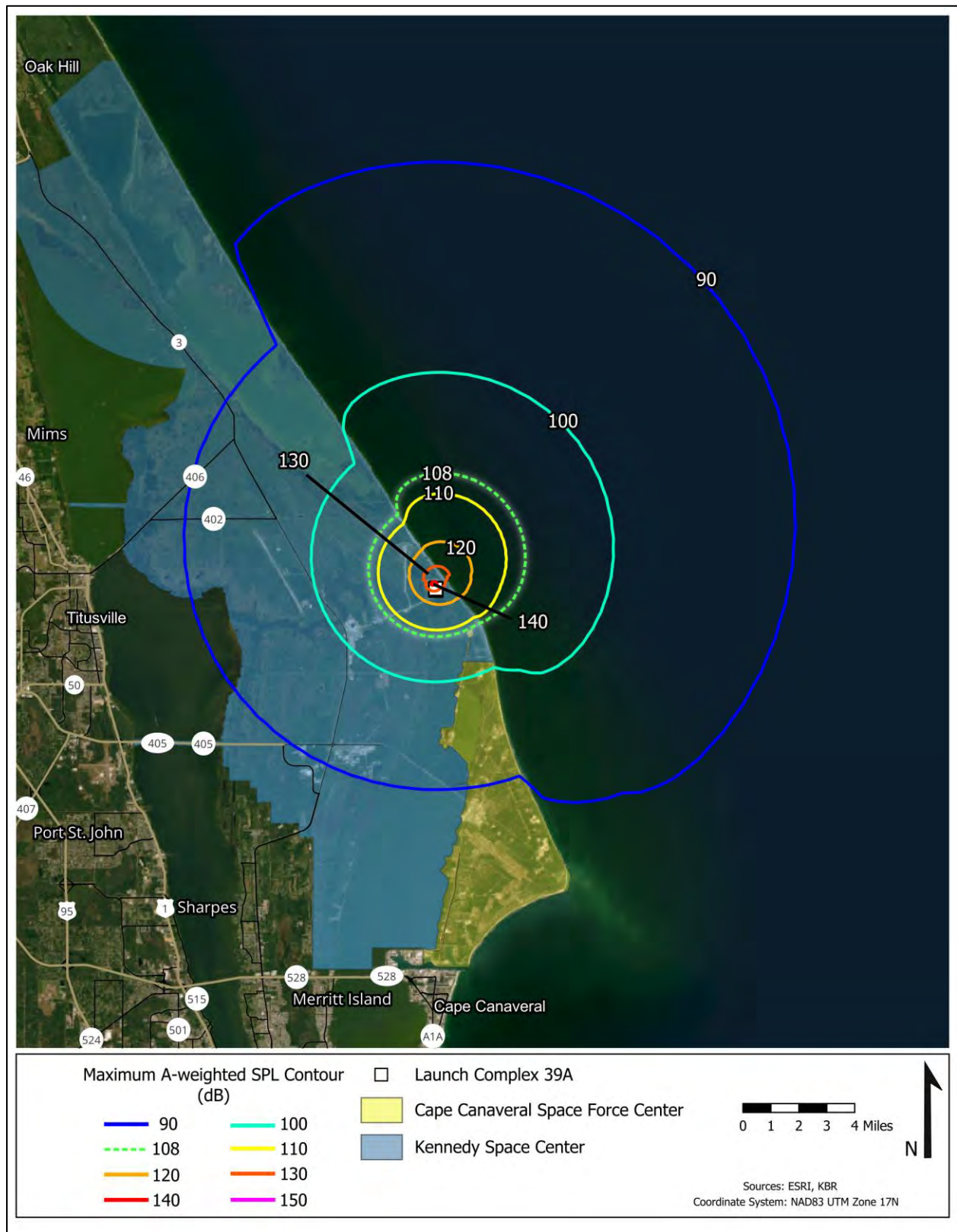


Figure 89. Super Heavy Landing at LC-39A (40-Degrees): Max A-Weighted Sound Levels: Summer Night

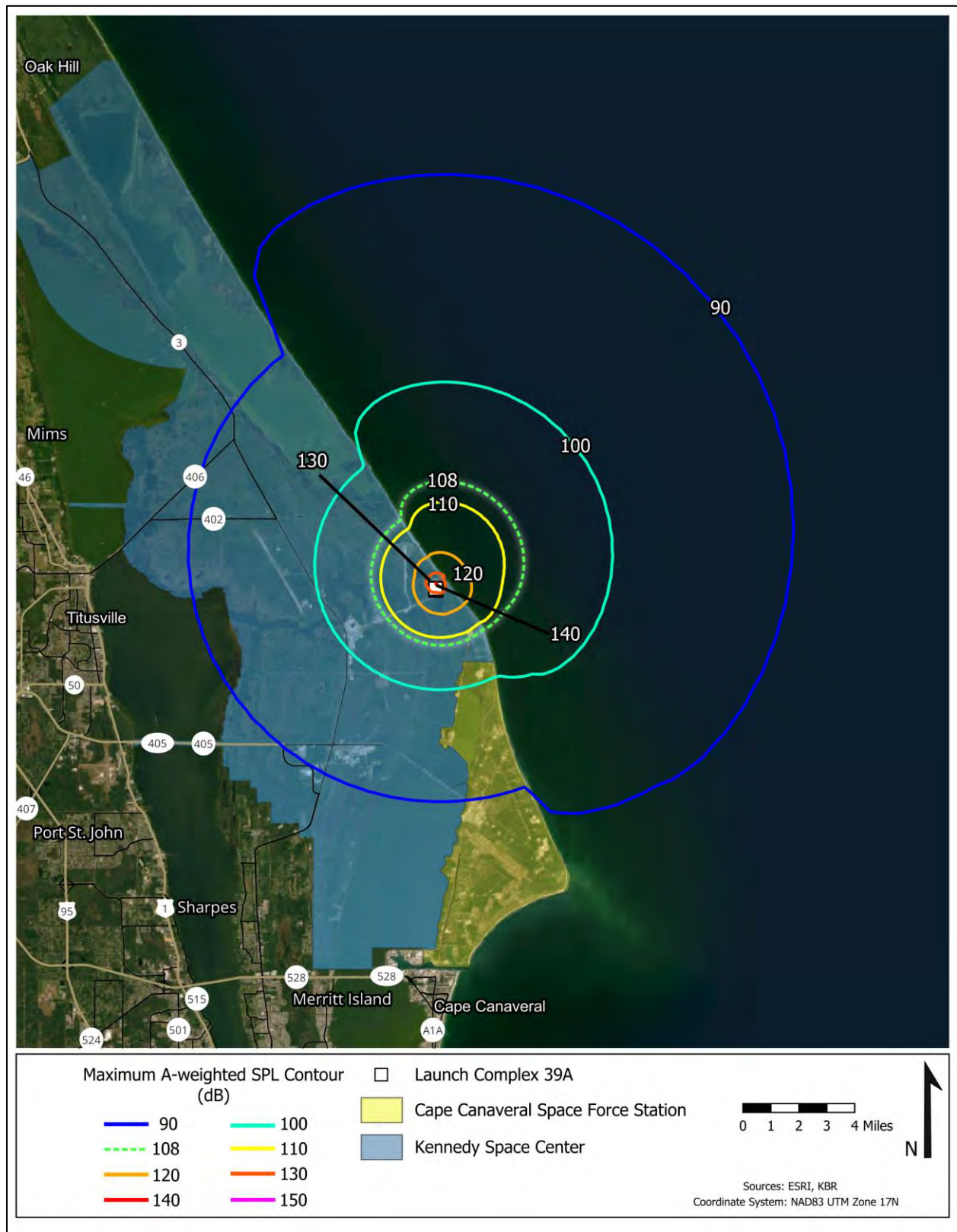


Figure 90. Super Heavy Landing at LC-39A (115-Degrees): Max A-Weighted Sound Levels: Summer Night



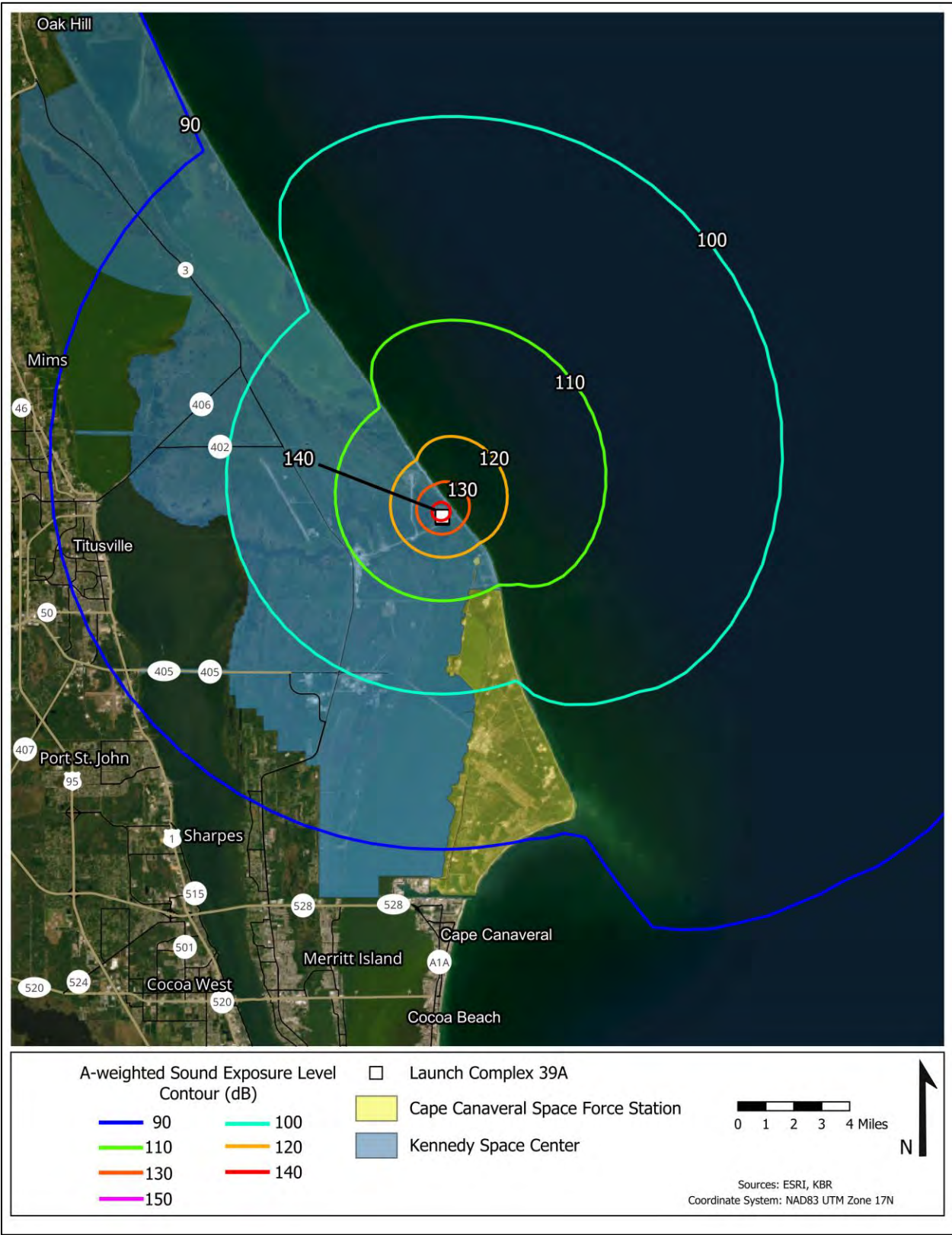


Figure 91. Super Heavy Landing at LC-39A (Nominal): Sound Exposure Levels: Summer Night



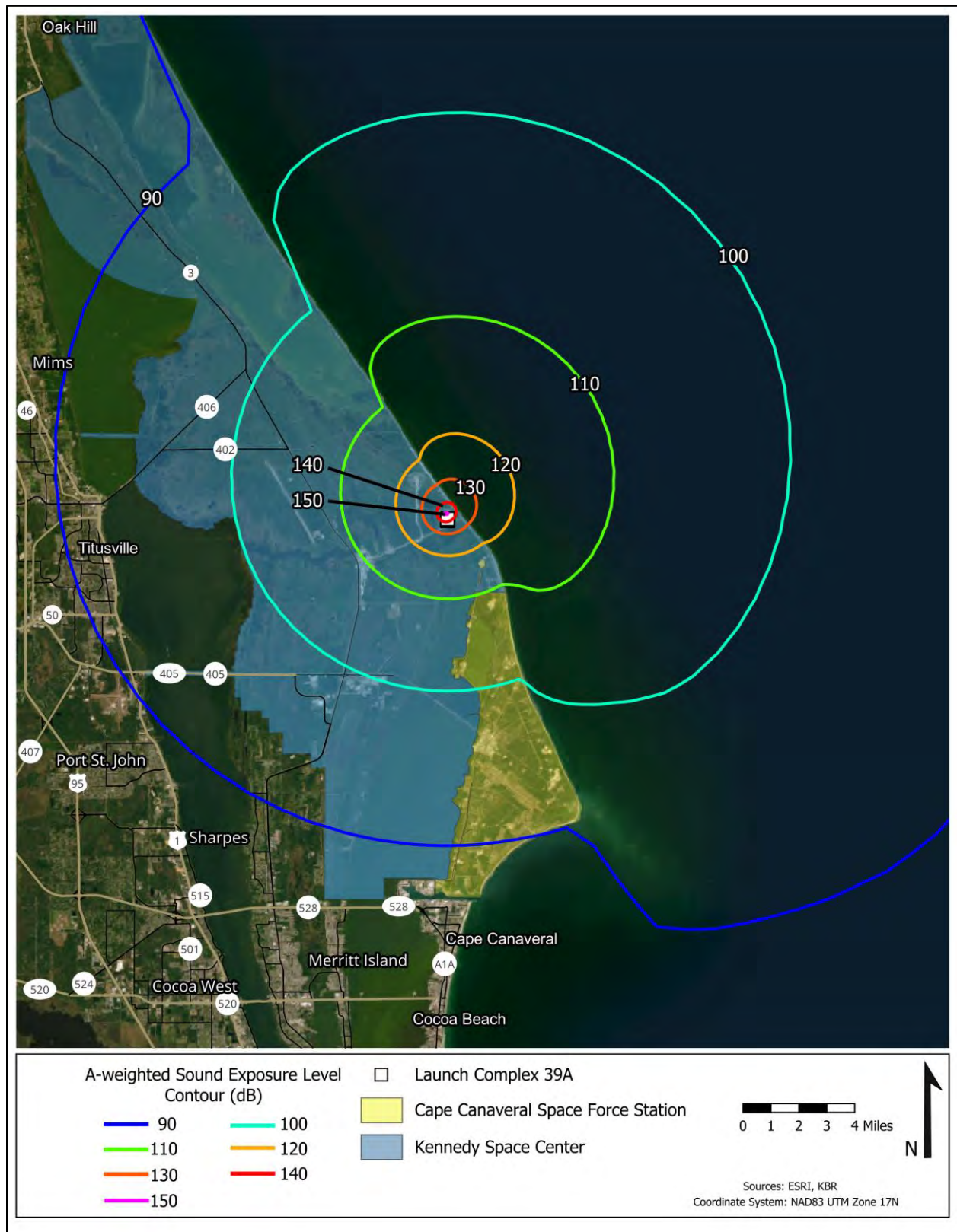


Figure 92. Super Heavy Landing at LC-39A (40-Degrees): Sound Exposure Levels: Summer Night

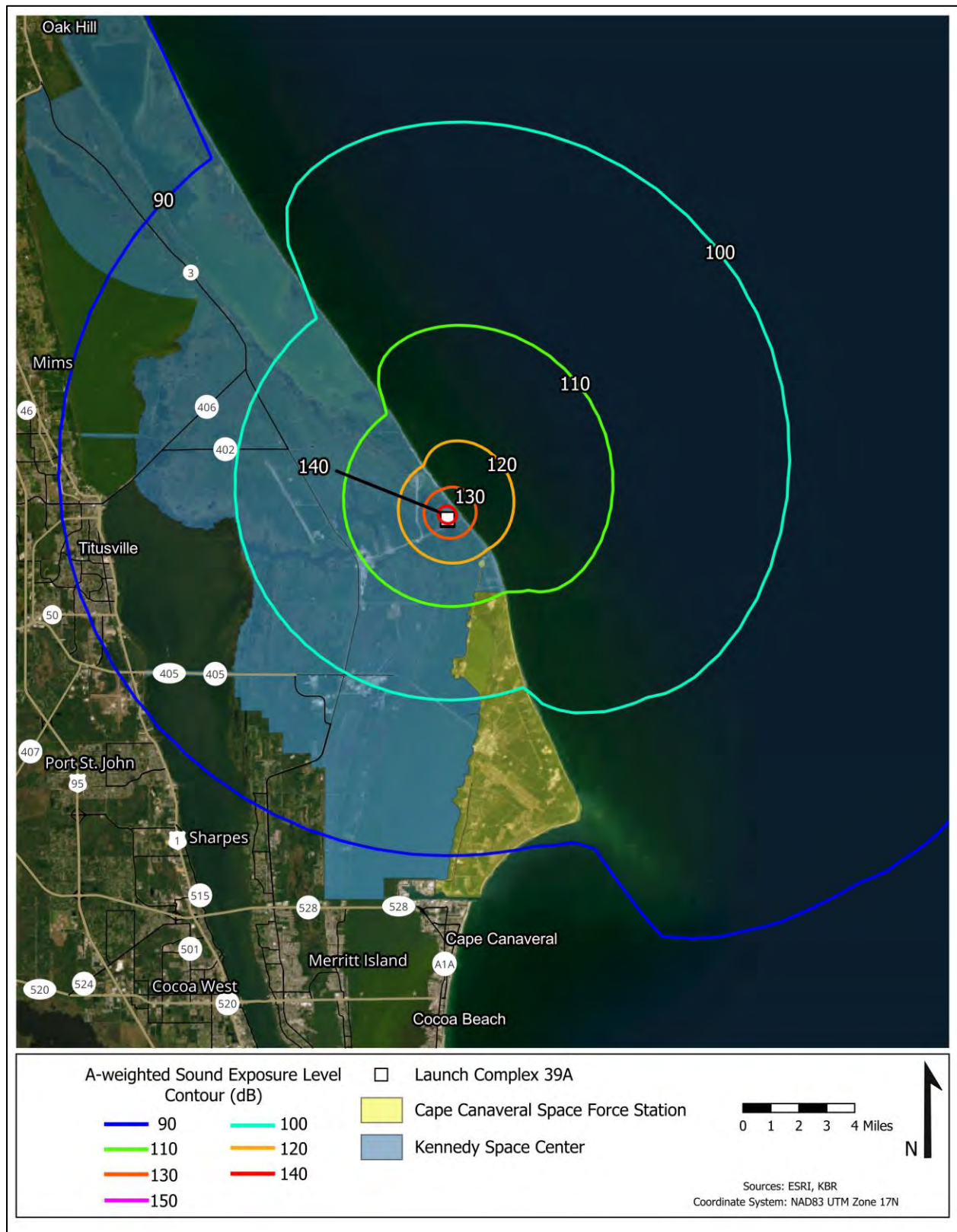


Figure 93. Super Heavy Landing at LC-39A (115-Degrees): Sound Exposure Levels: Summer Night



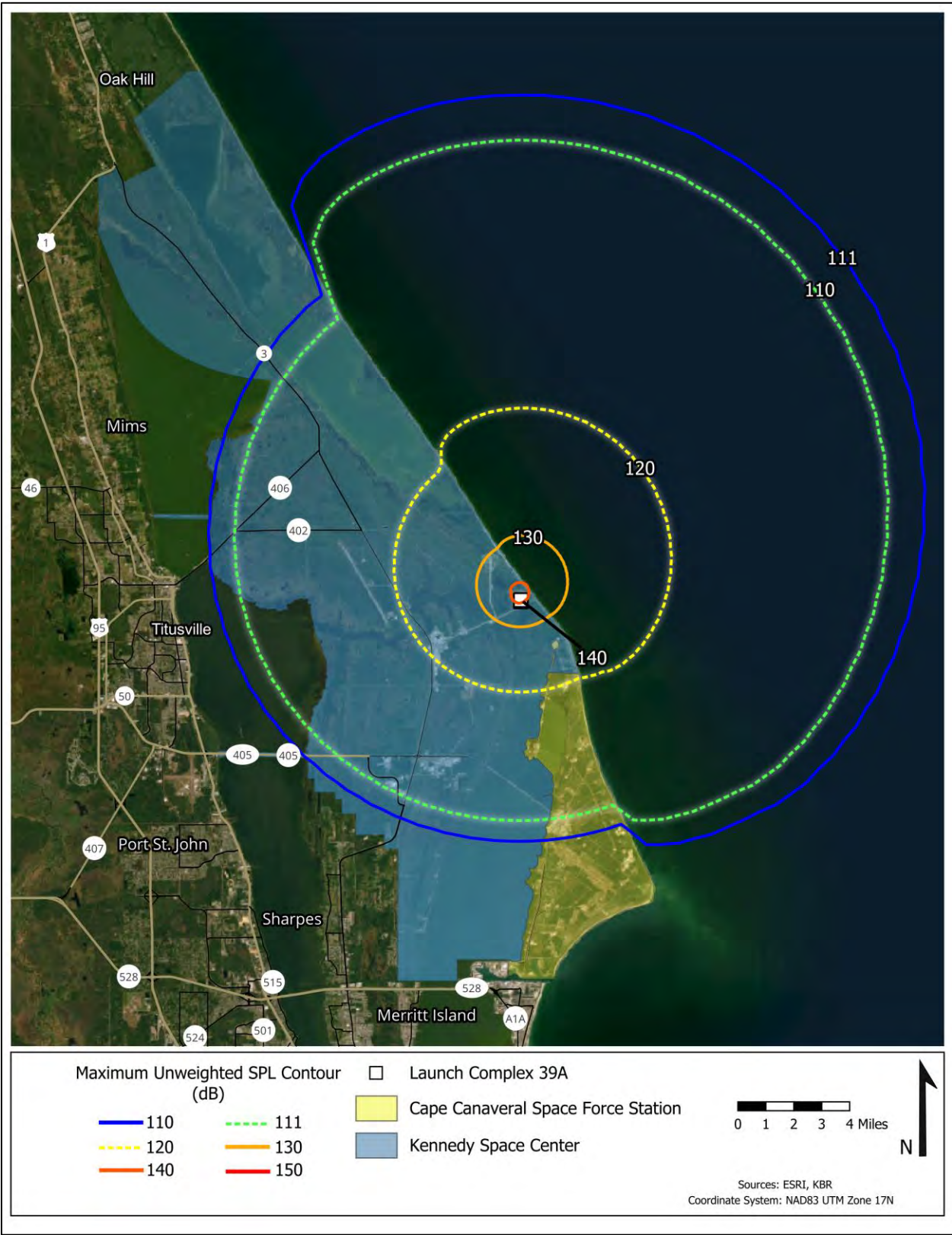


Figure 94. Super Heavy Landing at LC-39A (Nominal): Max Unweighted Sound Levels: Summer Night



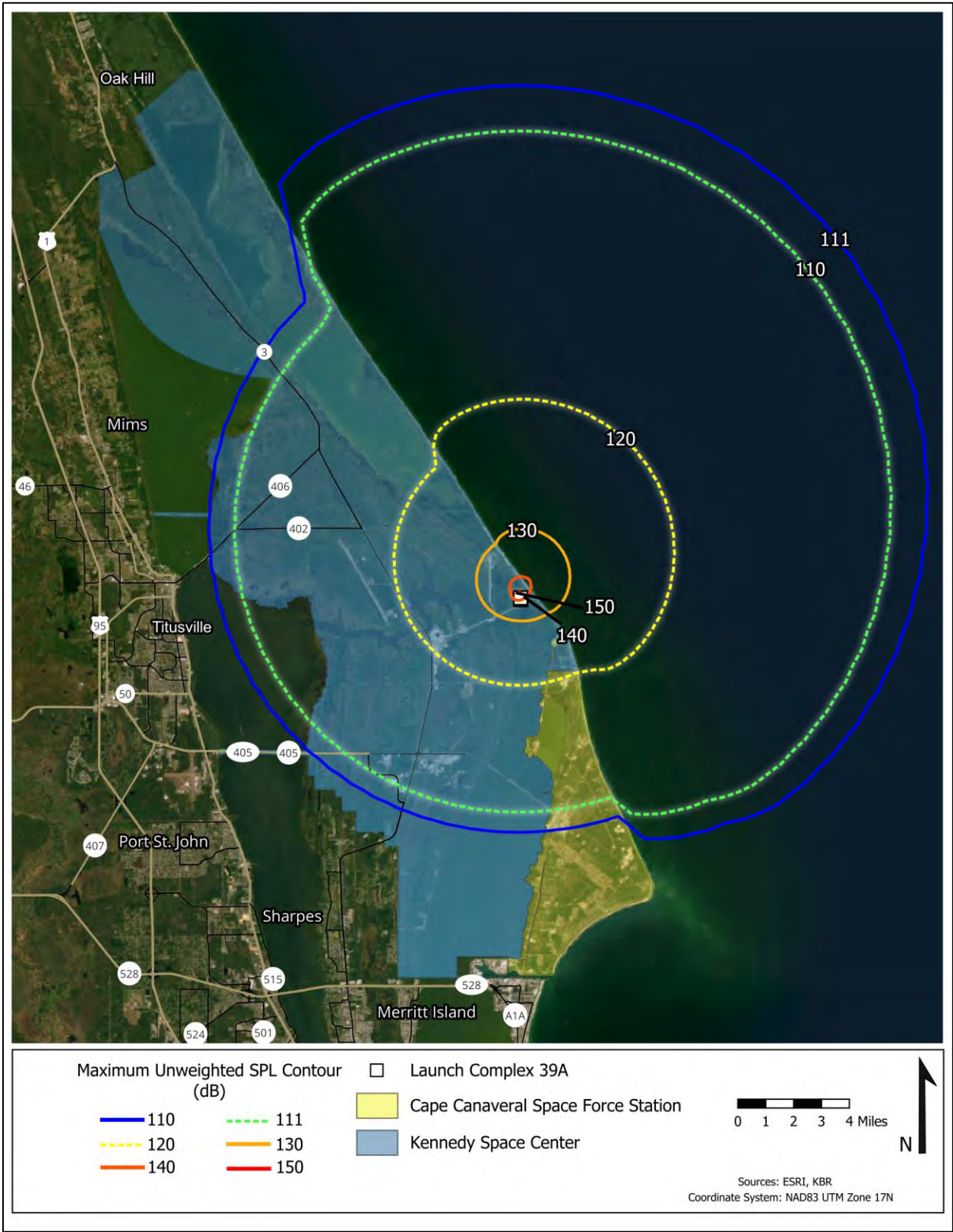


Figure 95. Super Heavy Landing at LC-39A (40-Degrees): Max Unweighted Sound Levels: Summer Night

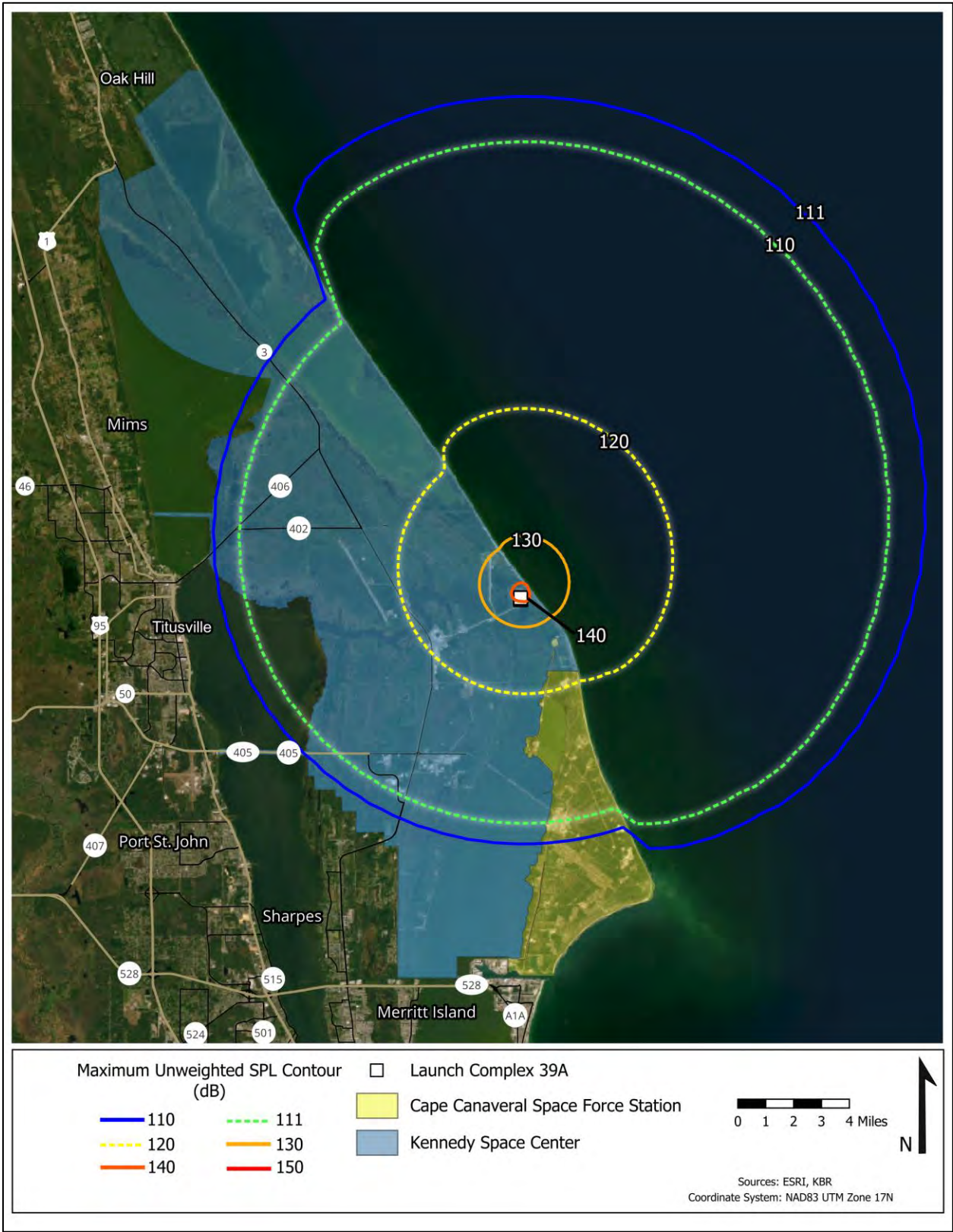


Figure 96. Super Heavy Landing at LC-39A (115-Degrees): Max Unweighted Sound Levels: Summer Night



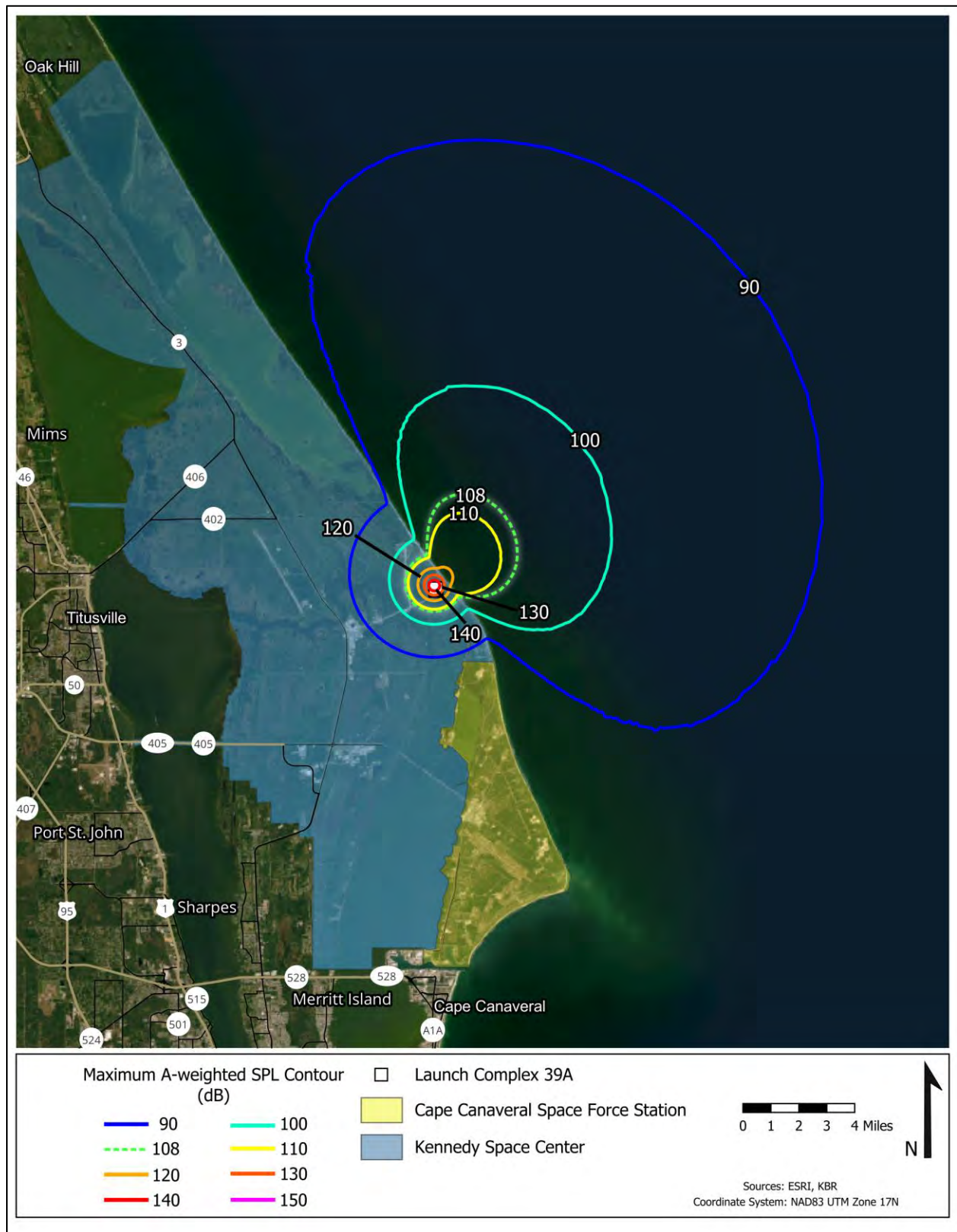


Figure 97. Starship Spacecraft Static Fire Test at LC-39A: Max A-Weighted Sound Levels: Summer Night



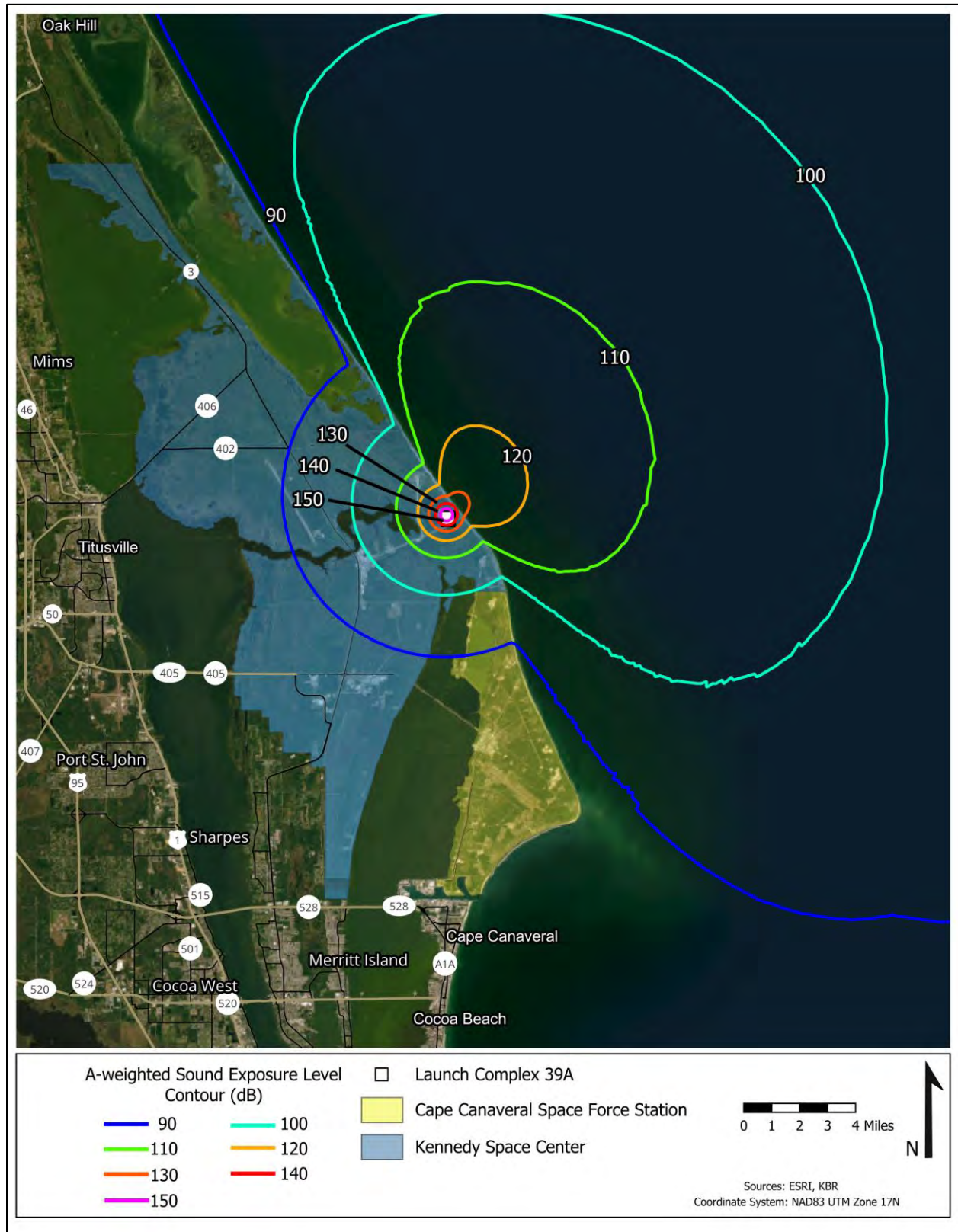


Figure 98. Starship Spacecraft Static Fire Test at LC-39A: Sound Exposure Levels: Summer Night

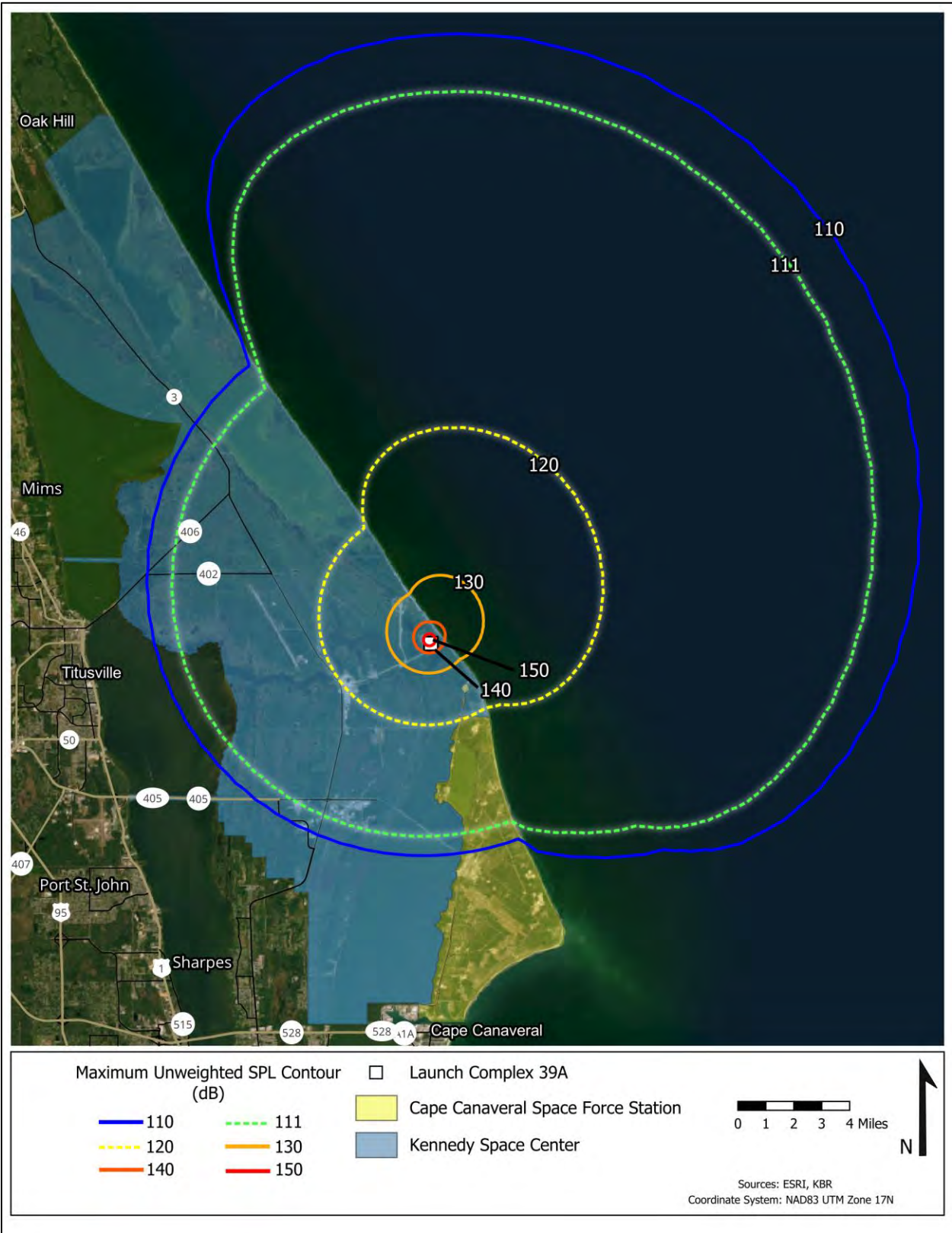


Figure 99. Starship Spacecraft Static Test at LC-39A: Max Unweighted Sound Levels: Summer Night



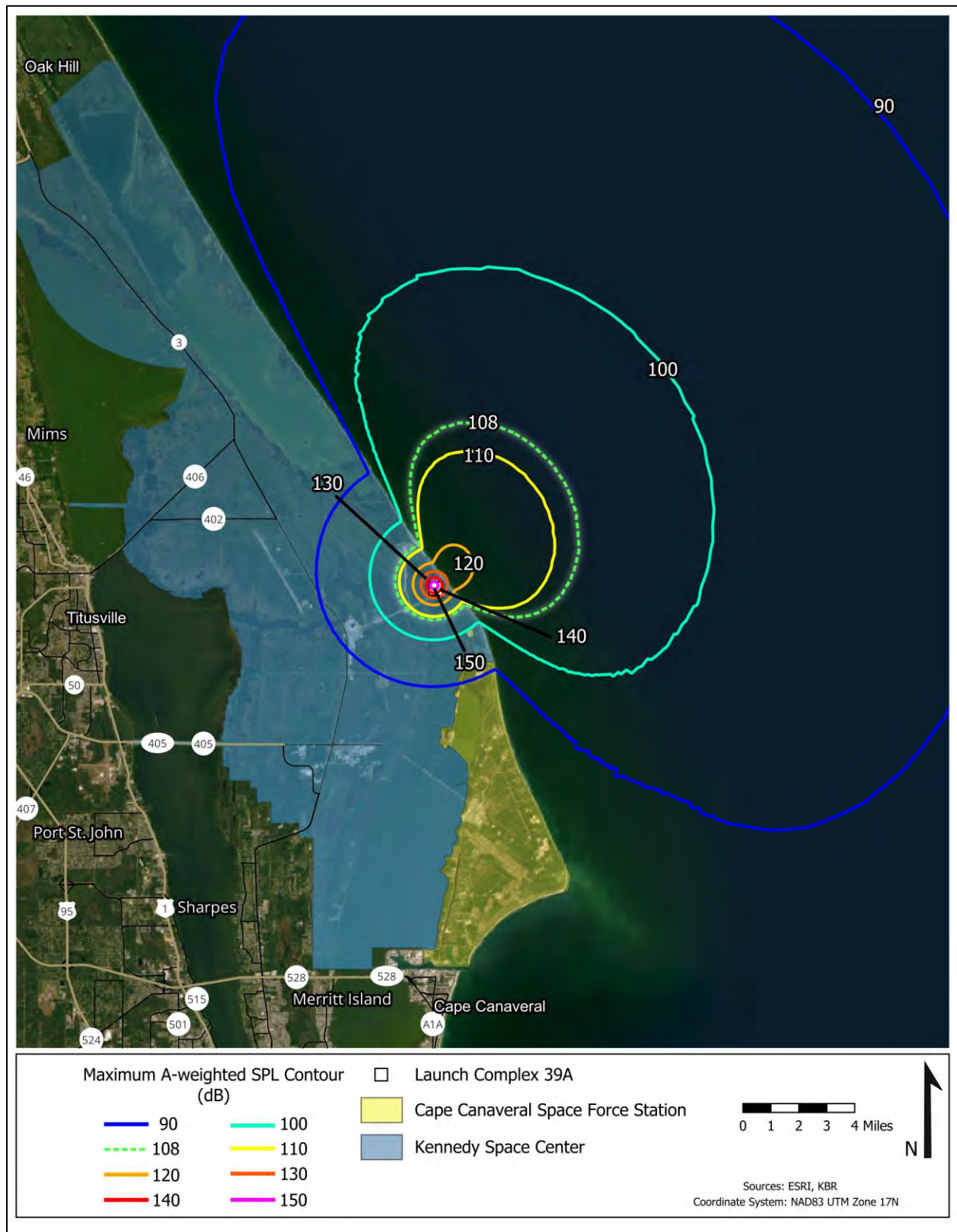
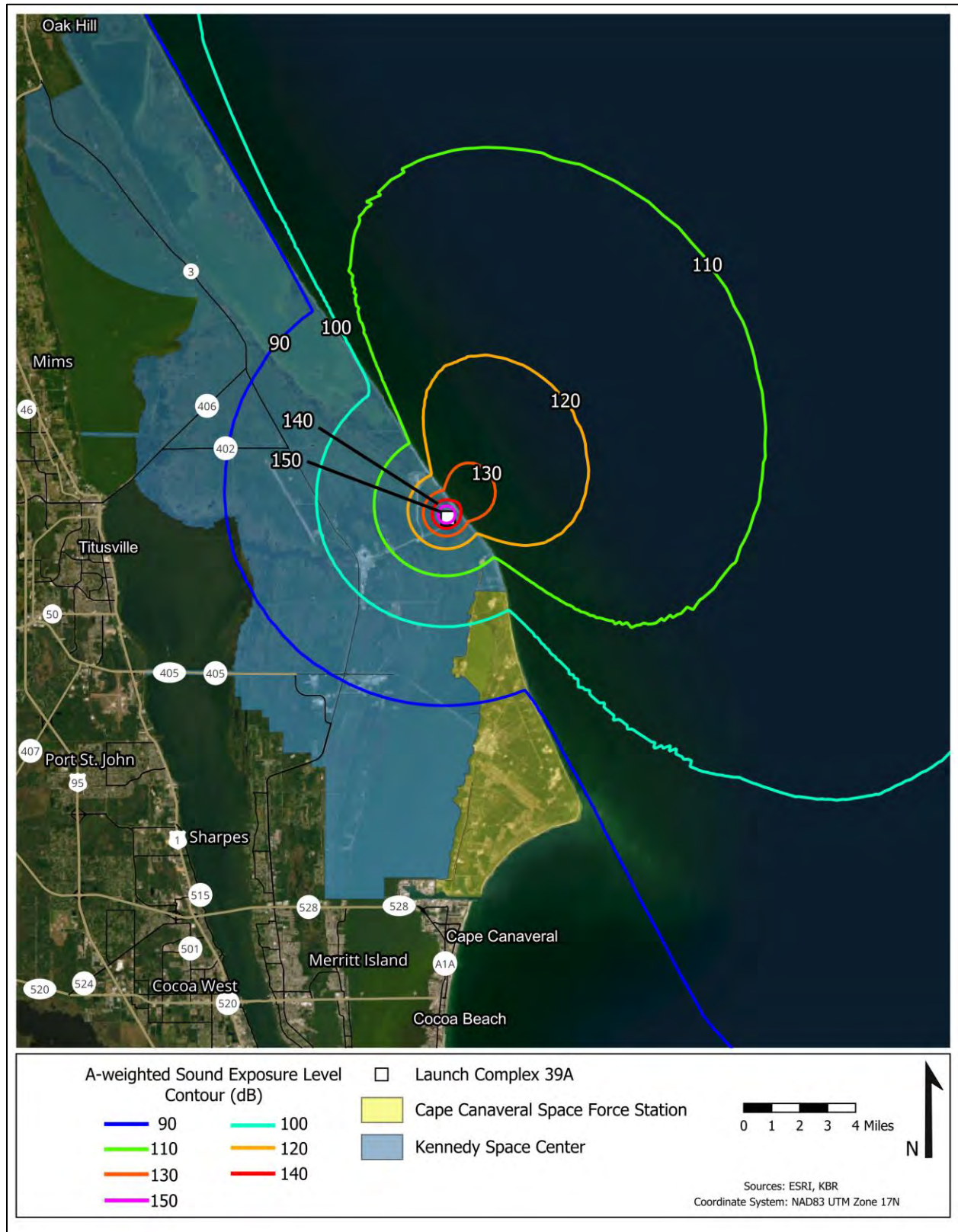


Figure 100. Super Heavy Static Fire Test at LC-39A: Maximum A-Weighted Sound Levels: Summer Night





**Figure 101. Super Heavy Static Fire Test at LC-39A: Sound Exposure Levels: Summer Night**

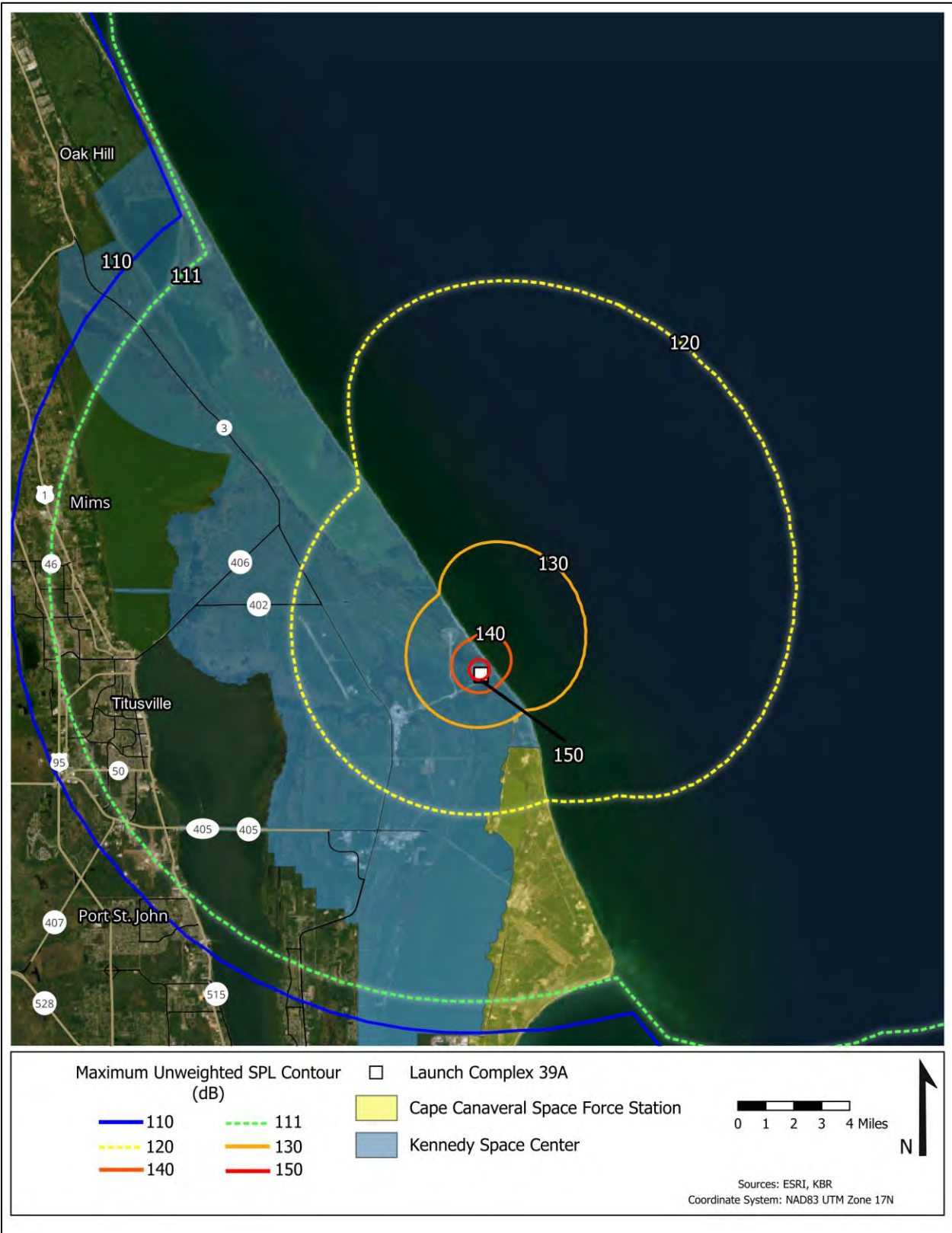


Figure 102. Super Heavy Static Fire Test at LC-39A: Max Unweighted Sound Levels: Summer Night

#### 3.1.4 Rocket Noise: $L_{Amax}$ , SEL, and $L_{max}$ Contour Figures: Winter Day



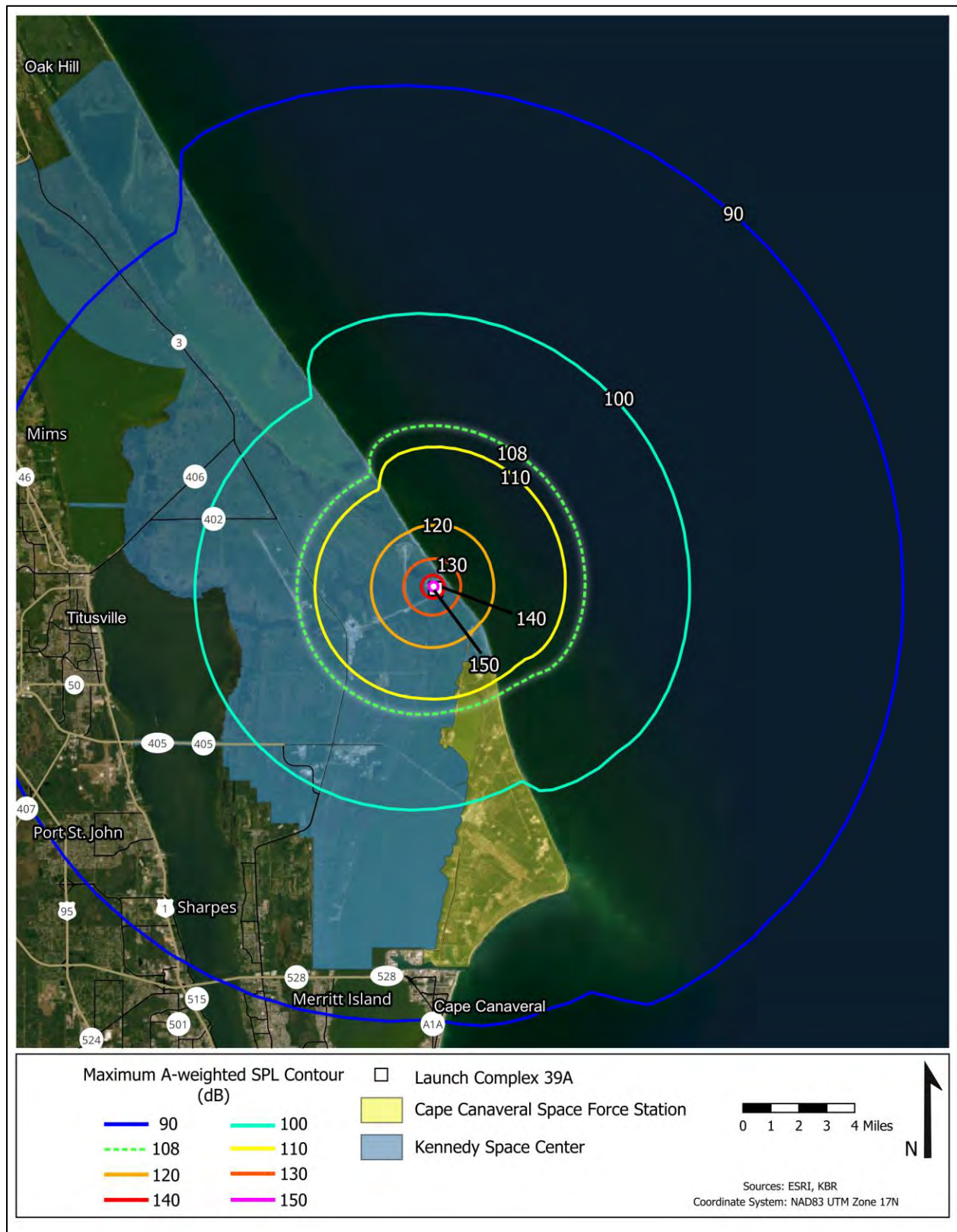
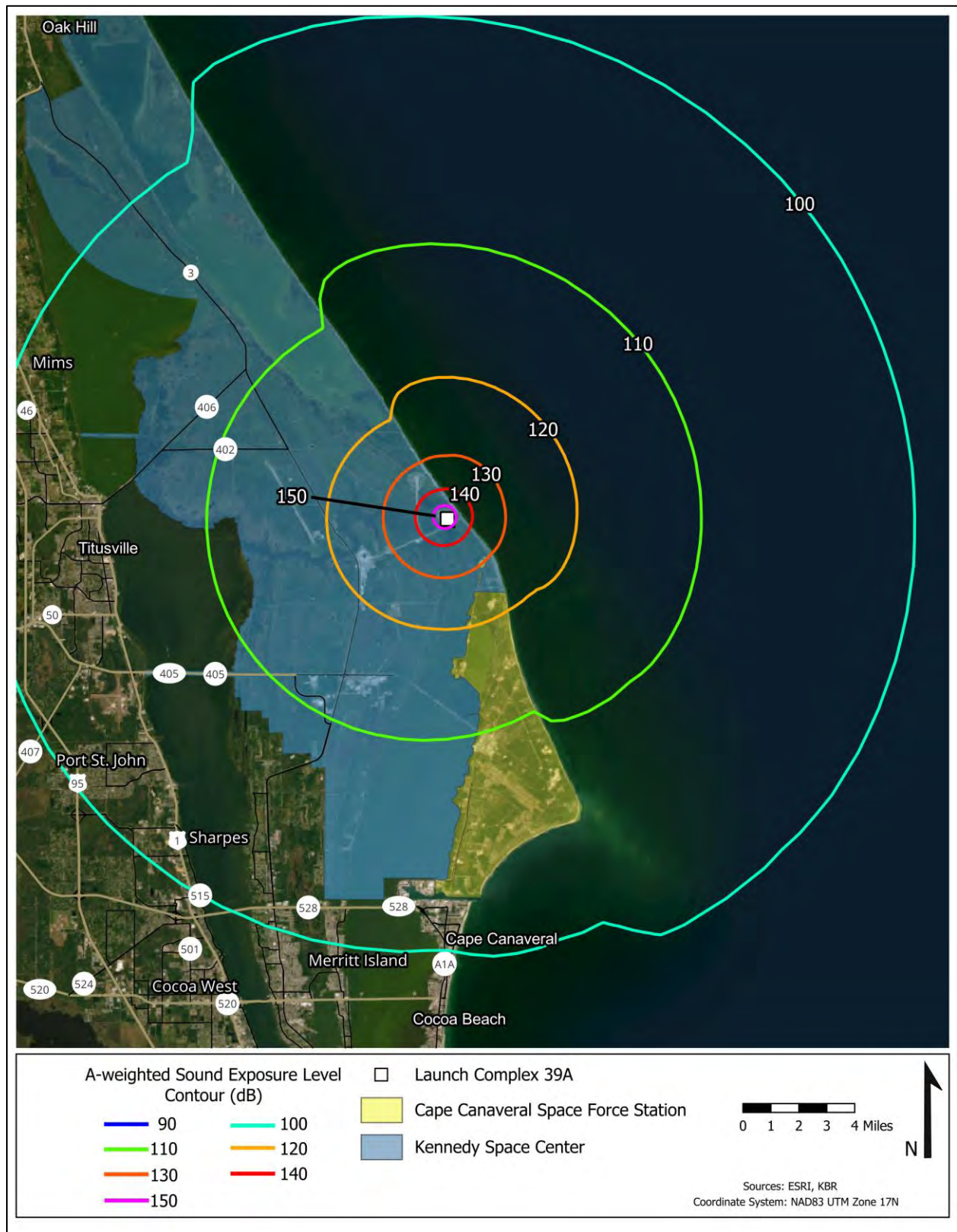
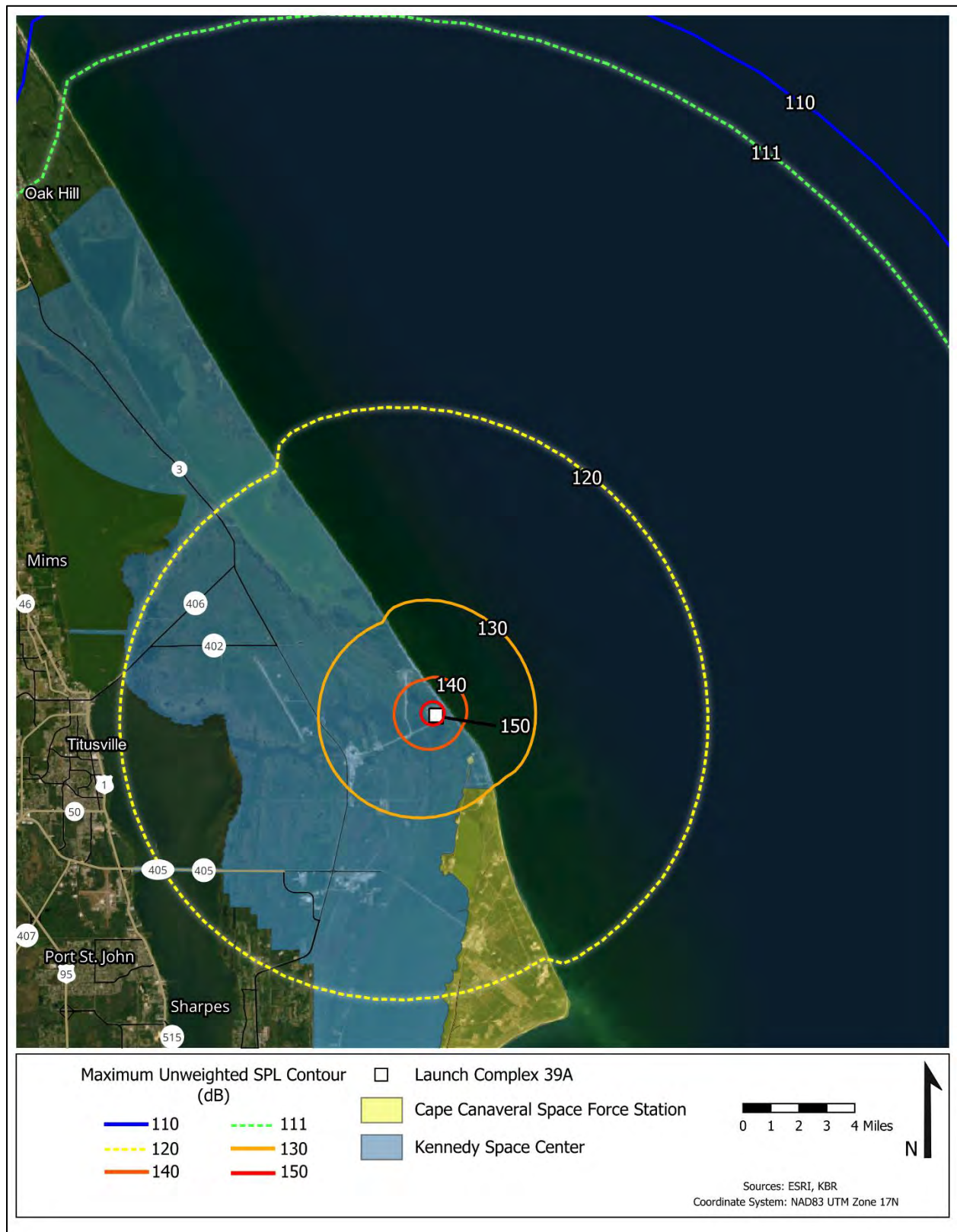


Figure 103. Starship Orbital Launch from LC-39A: Maximum A-Weighted Sound Levels: Winter Day



**Figure 104. Starship Orbital Launch from LC-39A: Sound Exposure Levels: Winter Day**





**Figure 105. Starship Orbital Launch from LC-39A: Maximum Unweighted Sound Levels: Winter Day**

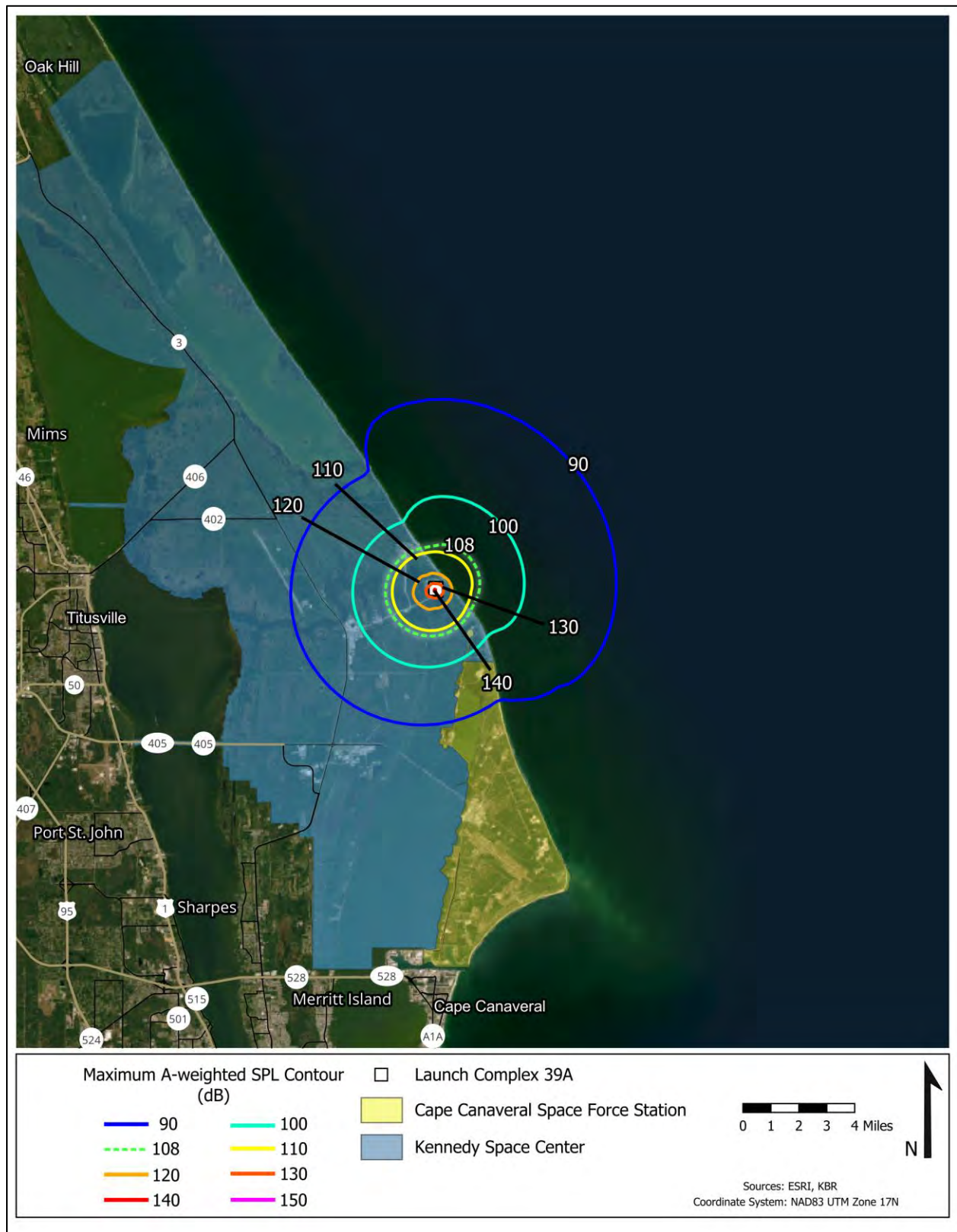
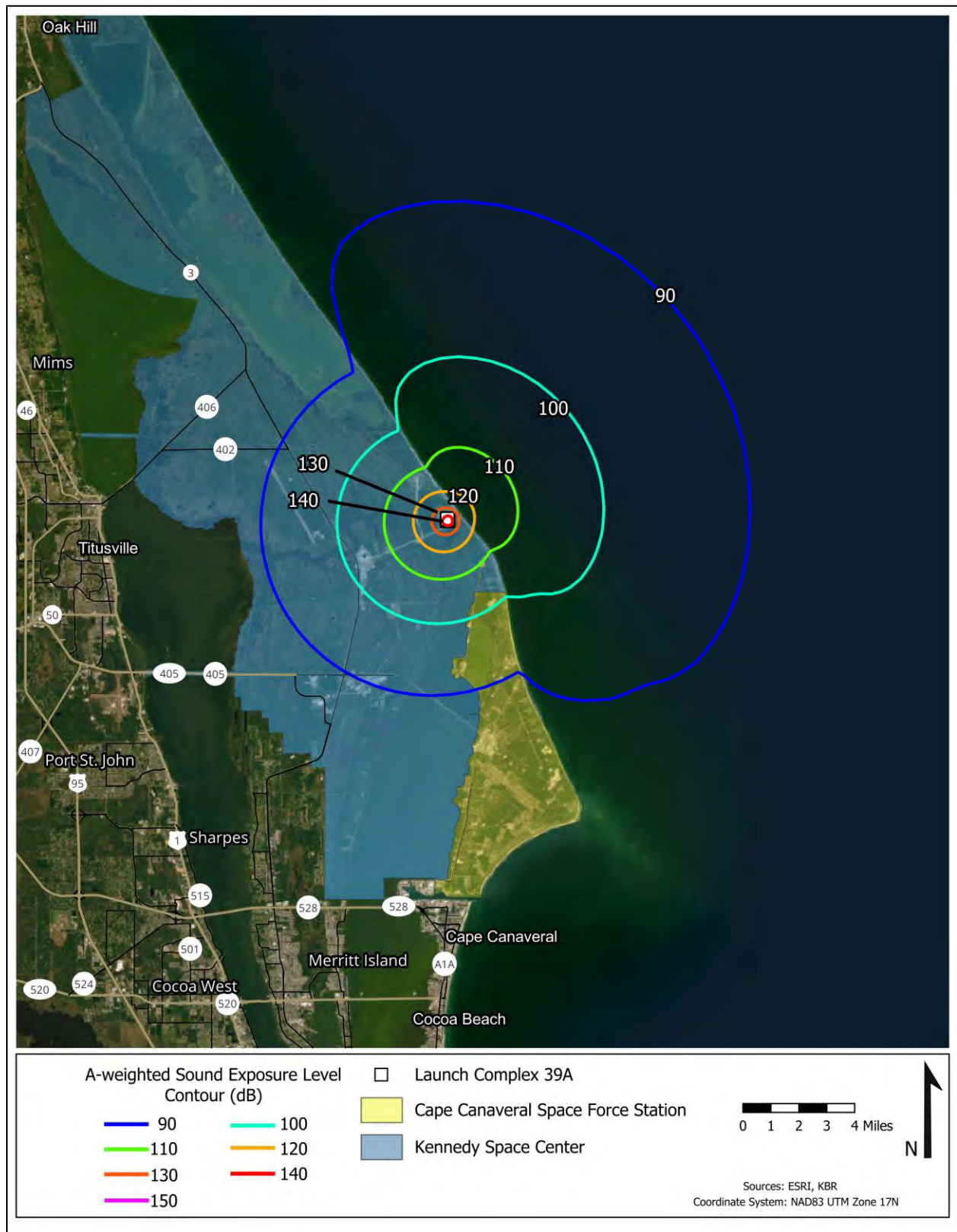


Figure 106. Starship Spacecraft Landing at LC-39A: Maximum A-Weighted Sound Levels: Winter Day





**Figure 107. Starship Spacecraft Landing at LC-39A: Sound Exposure Levels: Winter Day**

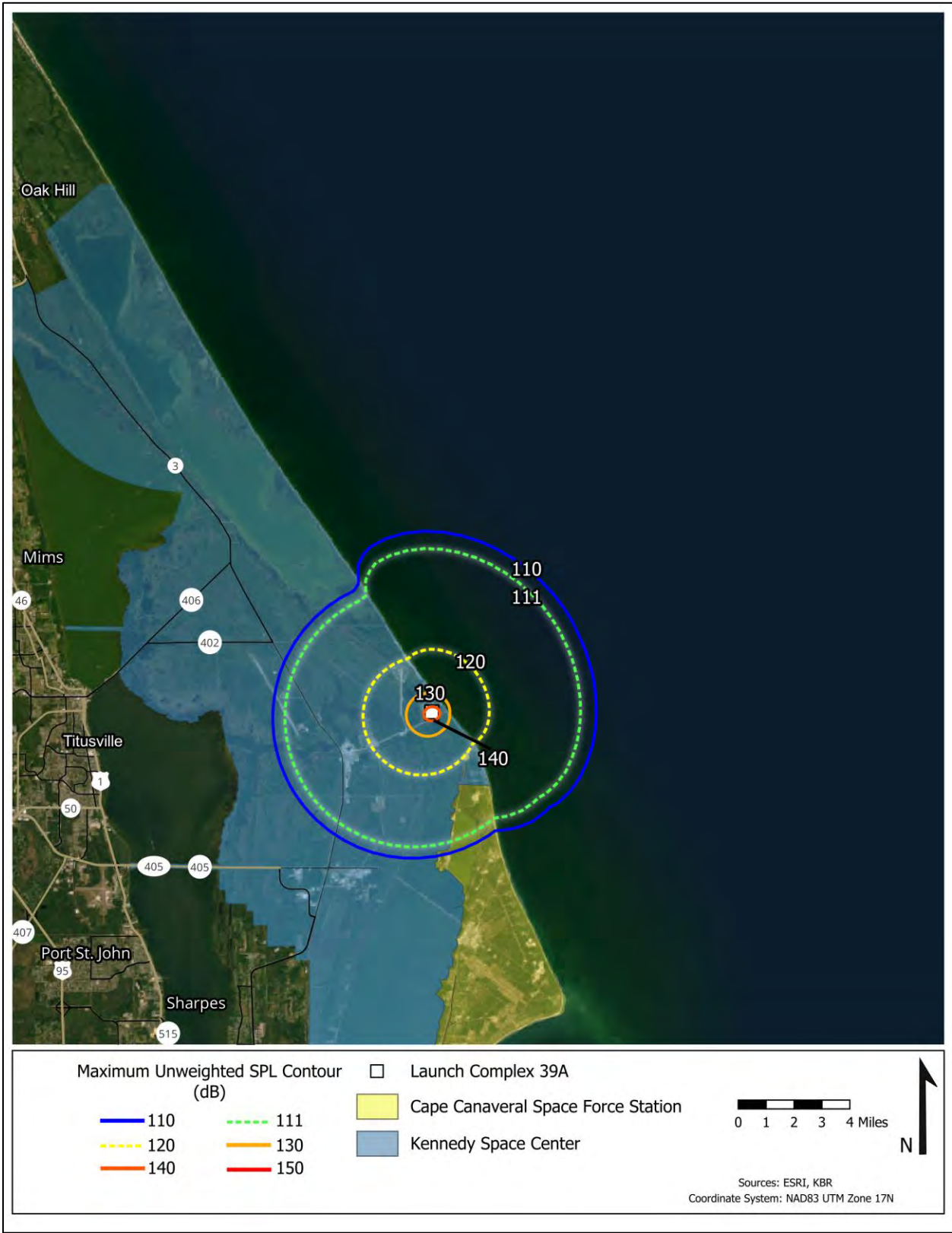


Figure 108. Starship Spacecraft Landing at LC-39A: Maximum Unweighted Sound Levels: Winter Day



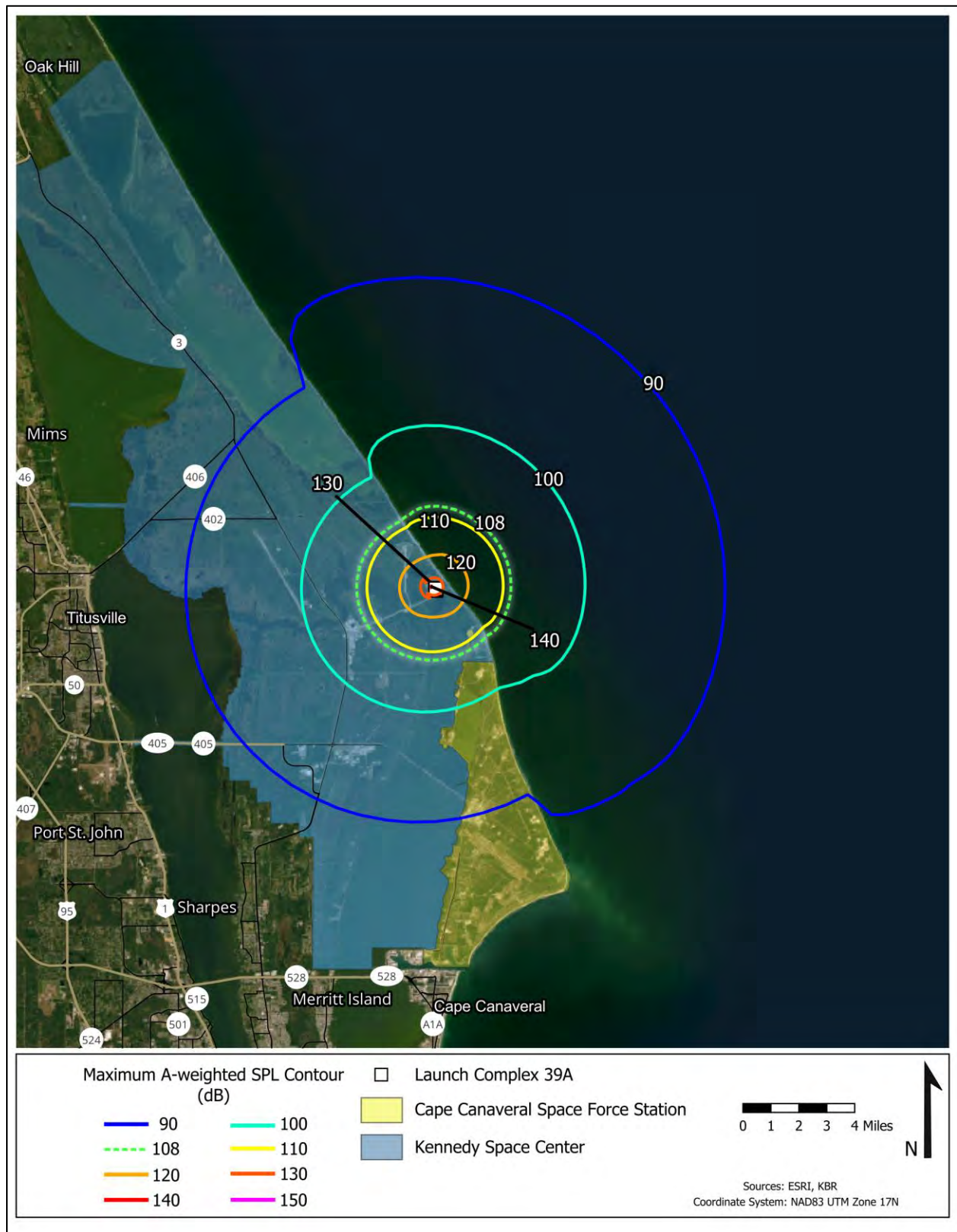


Figure 109. Super Heavy Landing at LC-39A (Nominal): Max A-Weighted Sound Levels: Winter Day

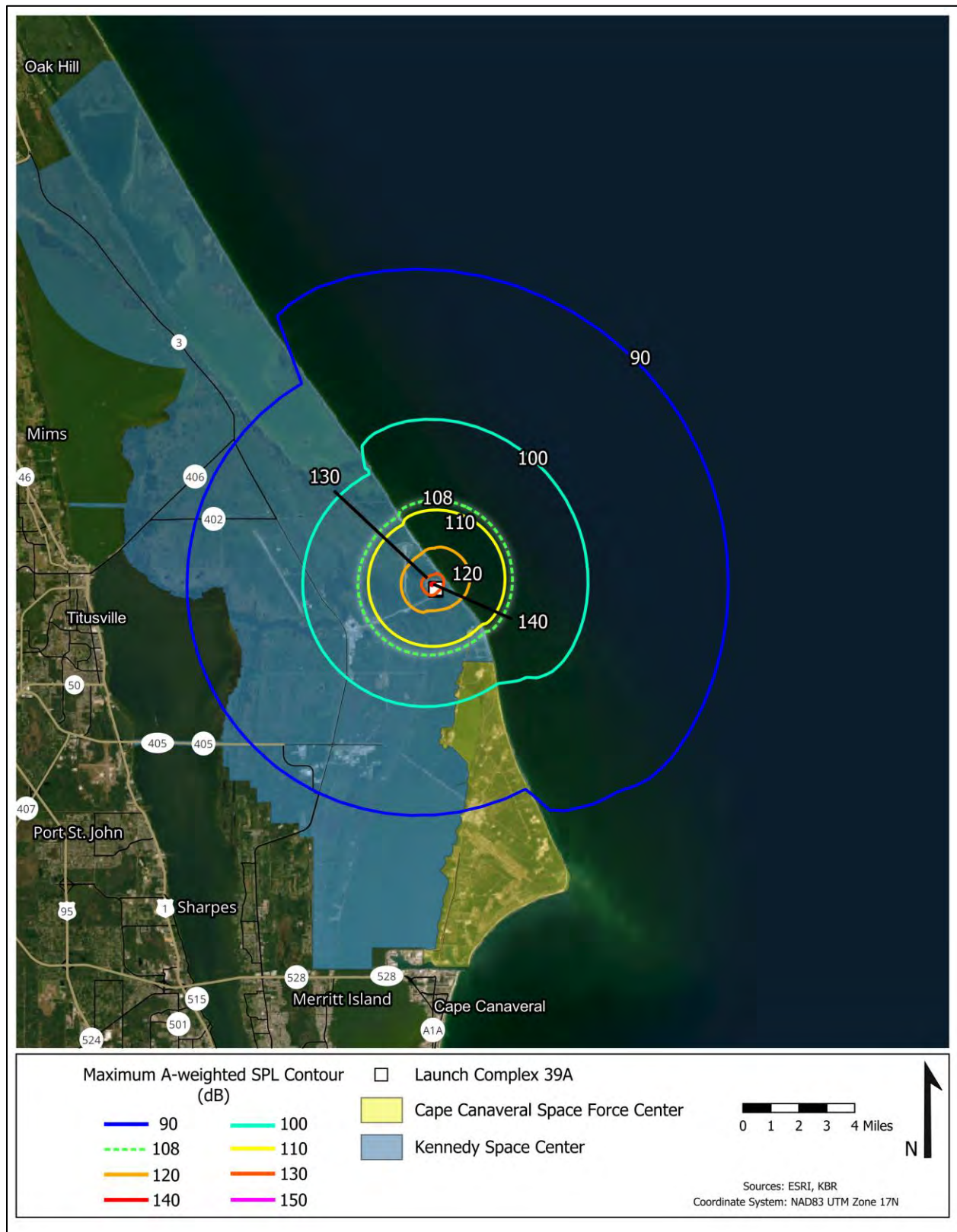


Figure 110. Super Heavy Landing at LC-39A (40-Degrees): Max A-Weighted Sound Levels: Winter Day



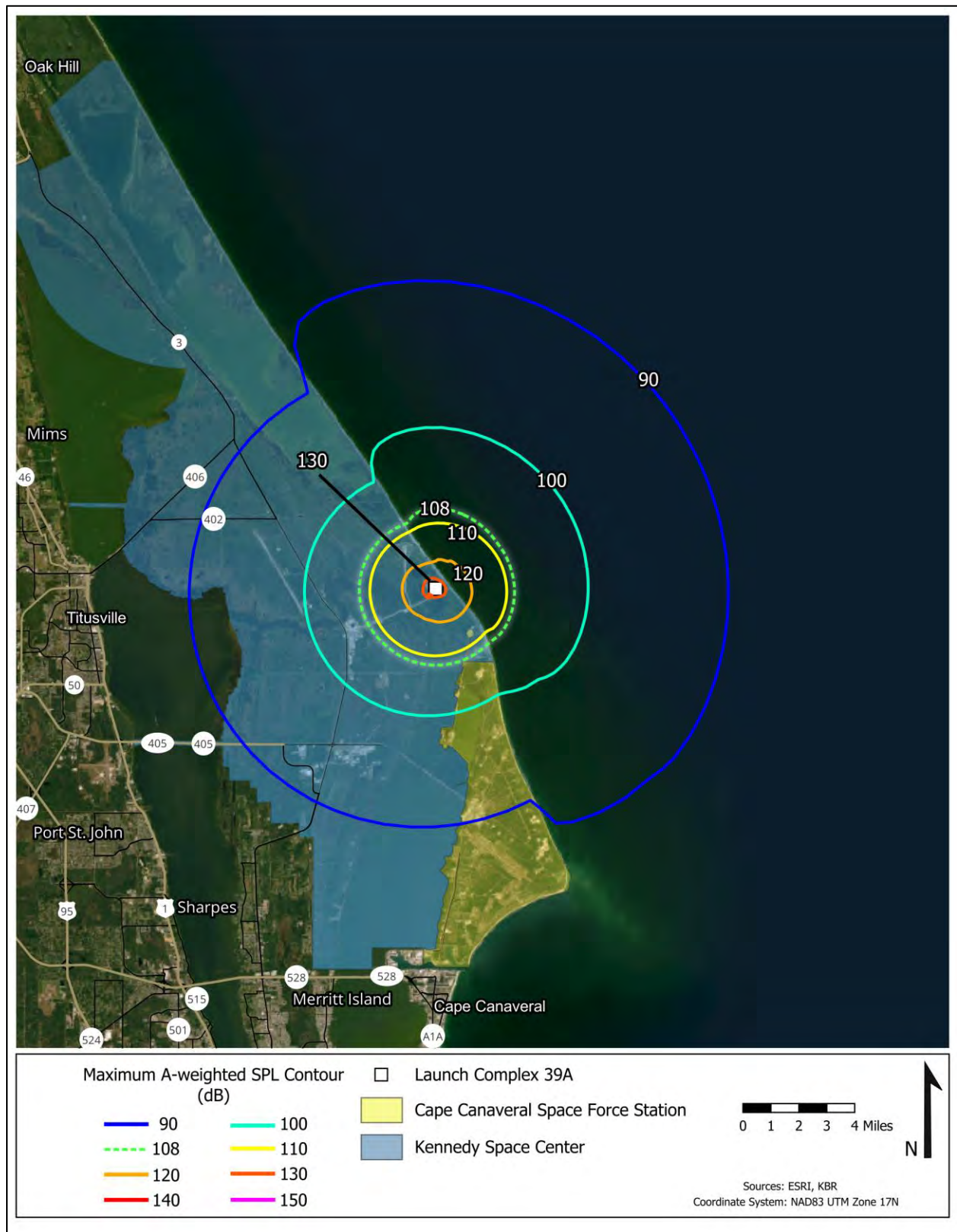


Figure 111. Super Heavy Landing at LC-39A (115-Degrees): Max A-Weighted Sound Levels: Winter Day

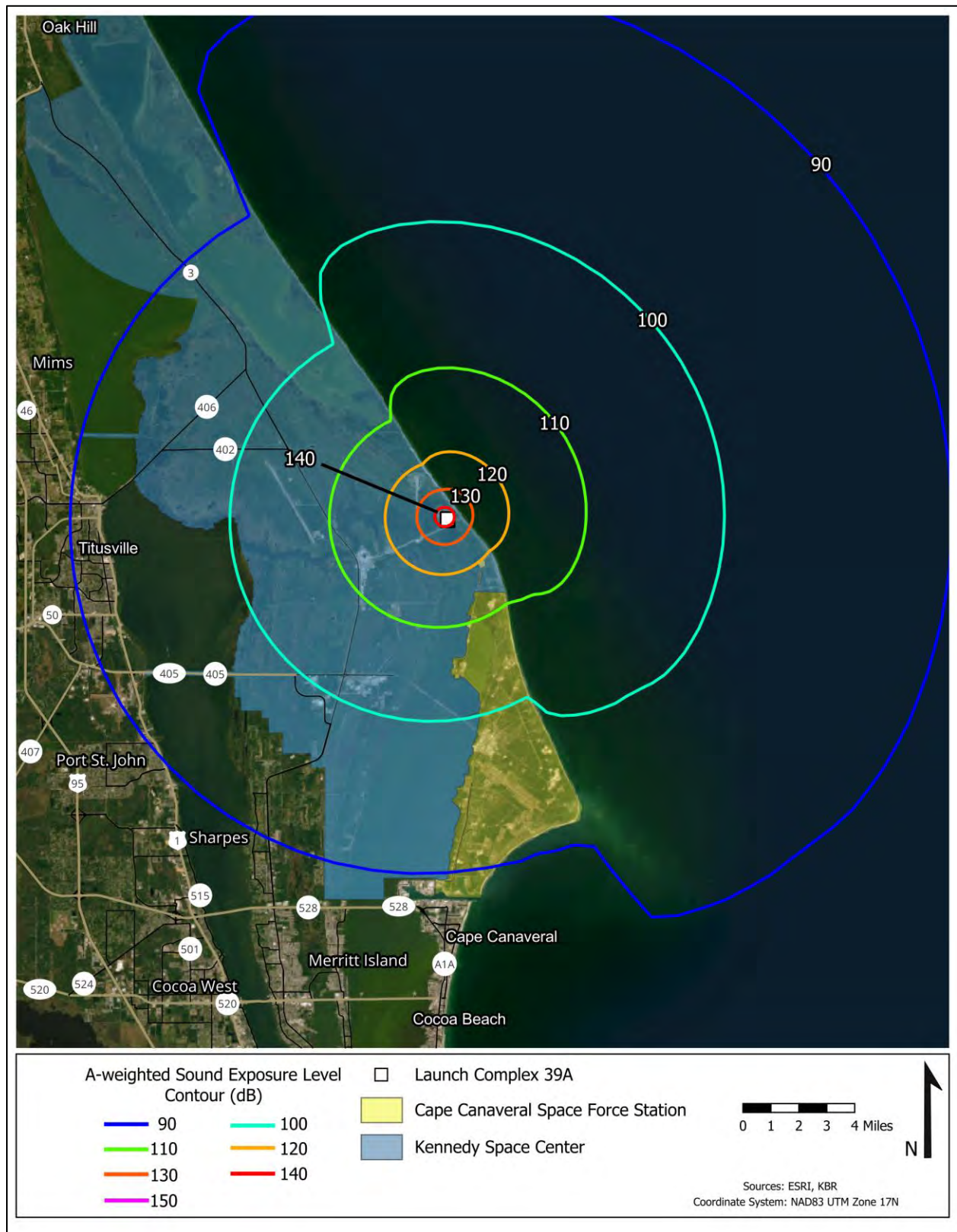


Figure 112. Super Heavy Landing at LC-39A (Nominal): Sound Exposure Levels: Winter Day



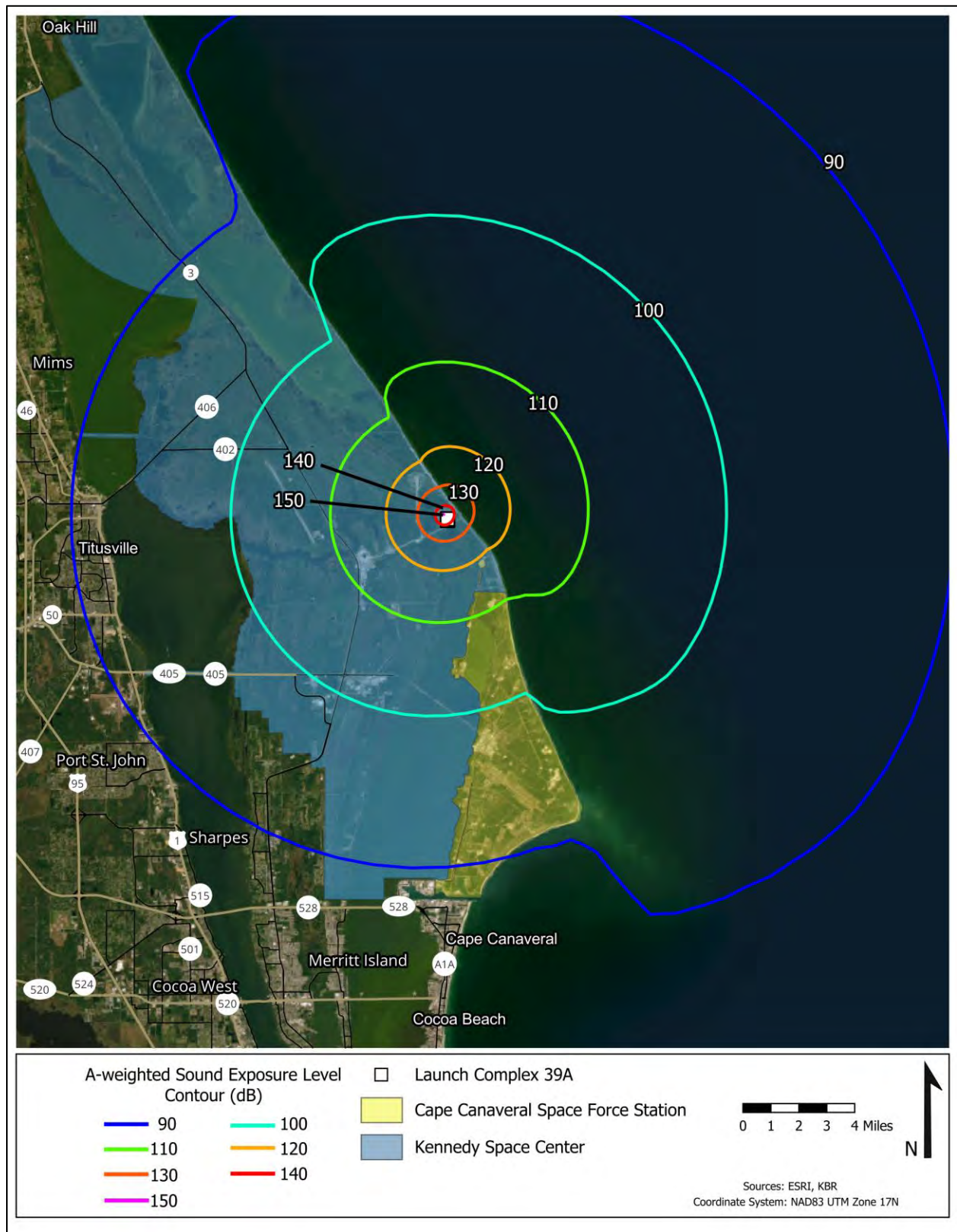
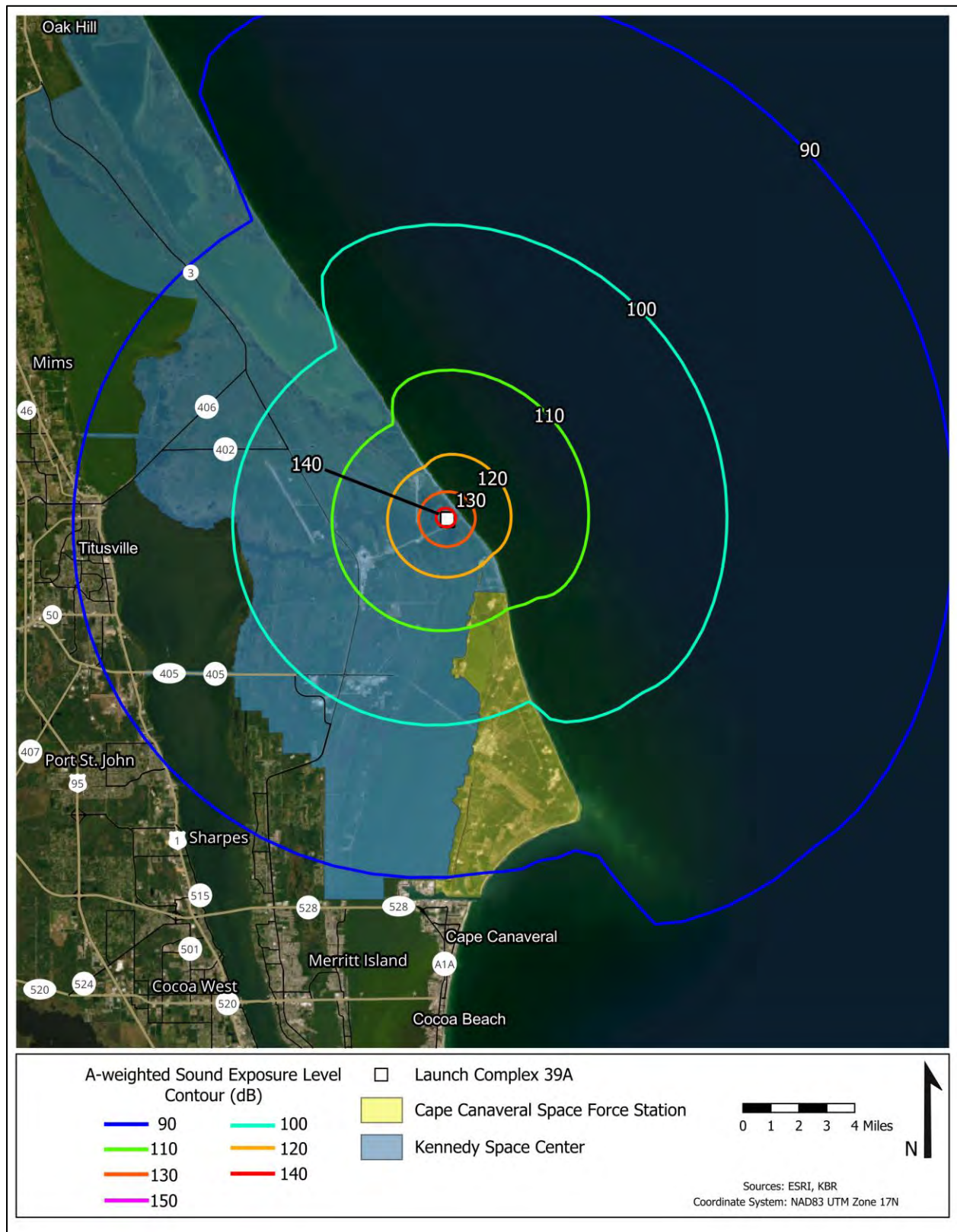


Figure 113. Super Heavy Landing at LC-39A (40-Degrees): Sound Exposure Levels: Winter Day



**Figure 114. Super Heavy Landing at LC-39A (115-Degrees): Sound Exposure Levels: Winter Day**



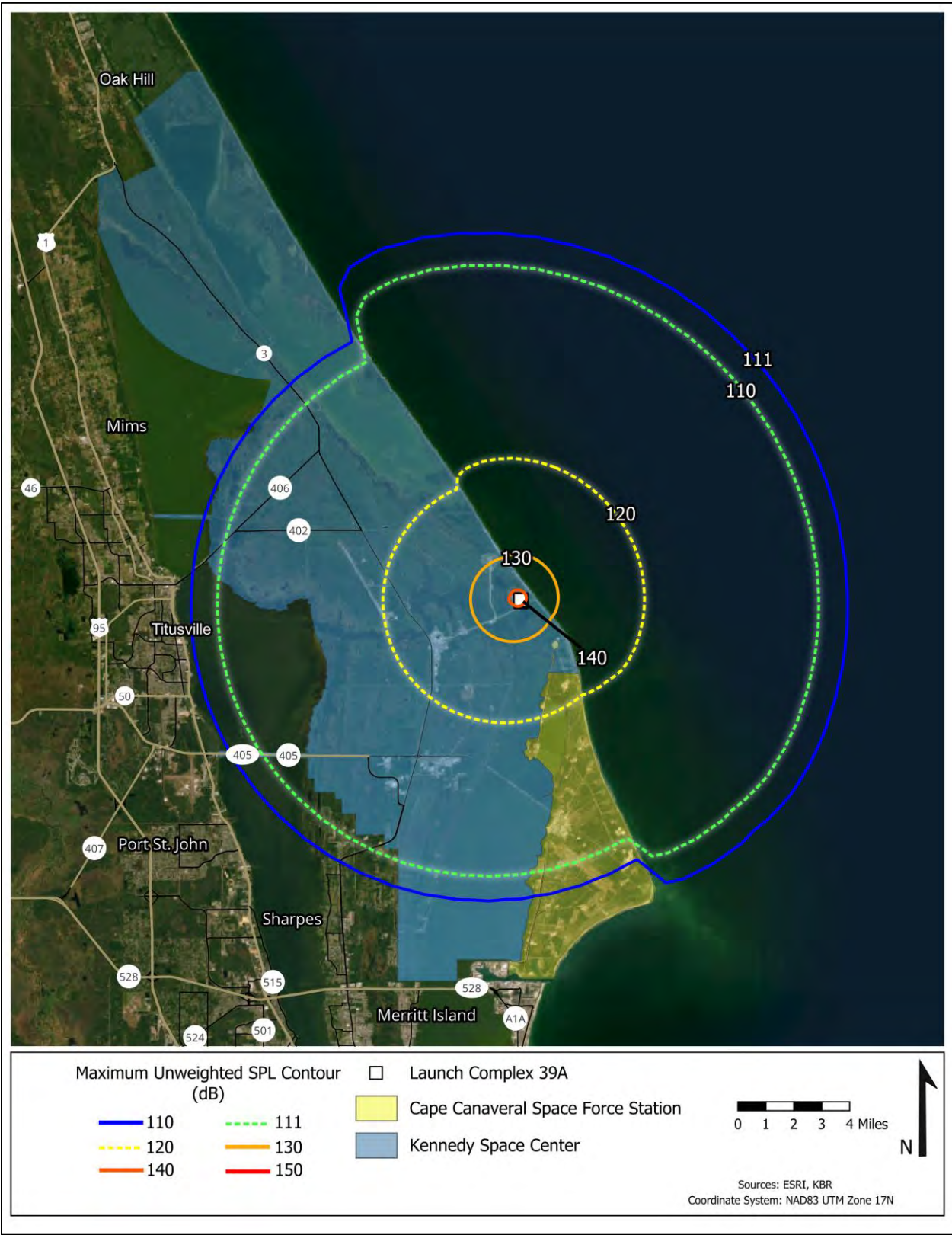


Figure 115. Super Heavy Landing at LC-39A (Nominal): Max Unweighted Sound Levels: Winter Day

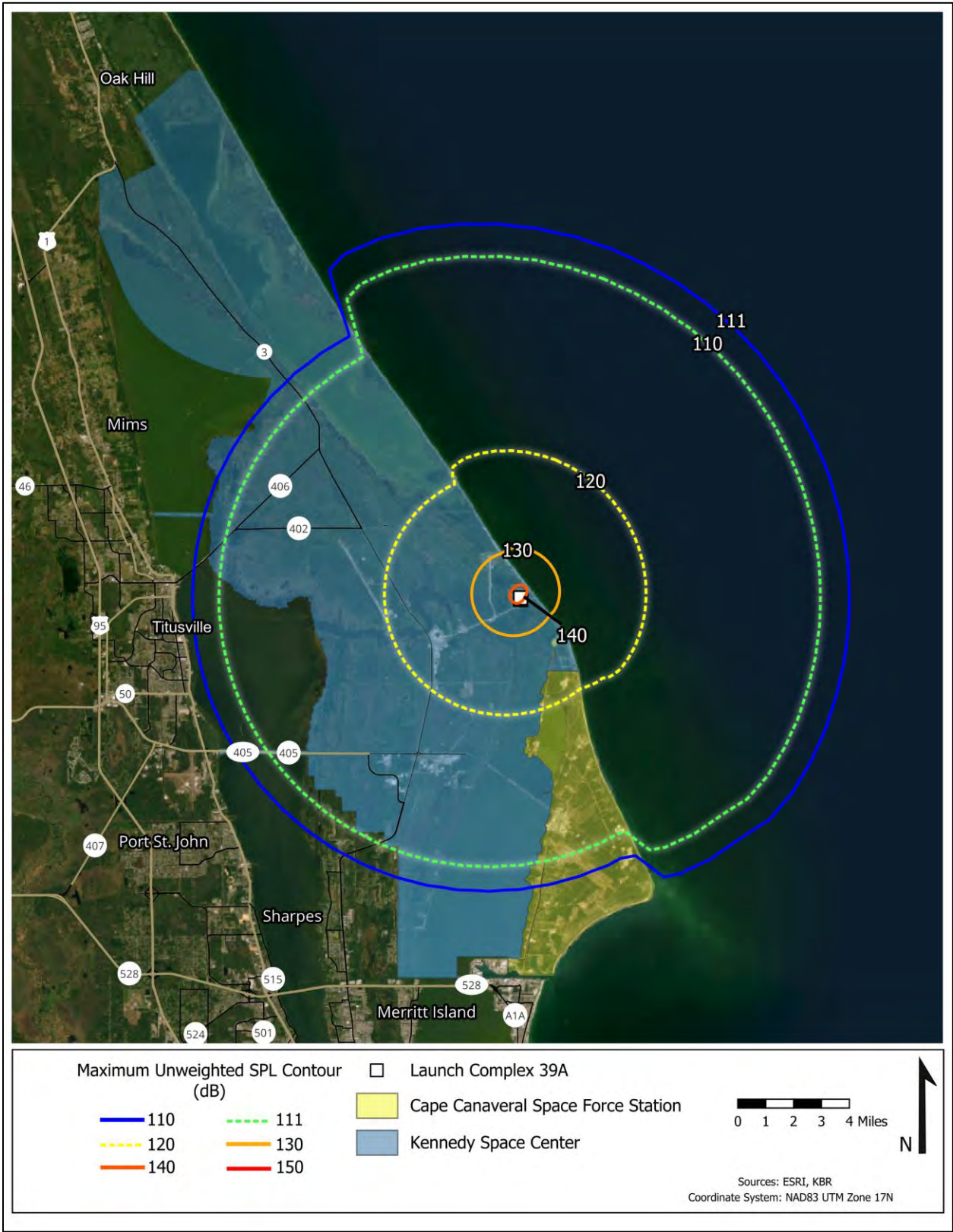


Figure 116. Super Heavy Landing at LC-39A (40-Degrees): Max Unweighted Sound Levels: Winter Day



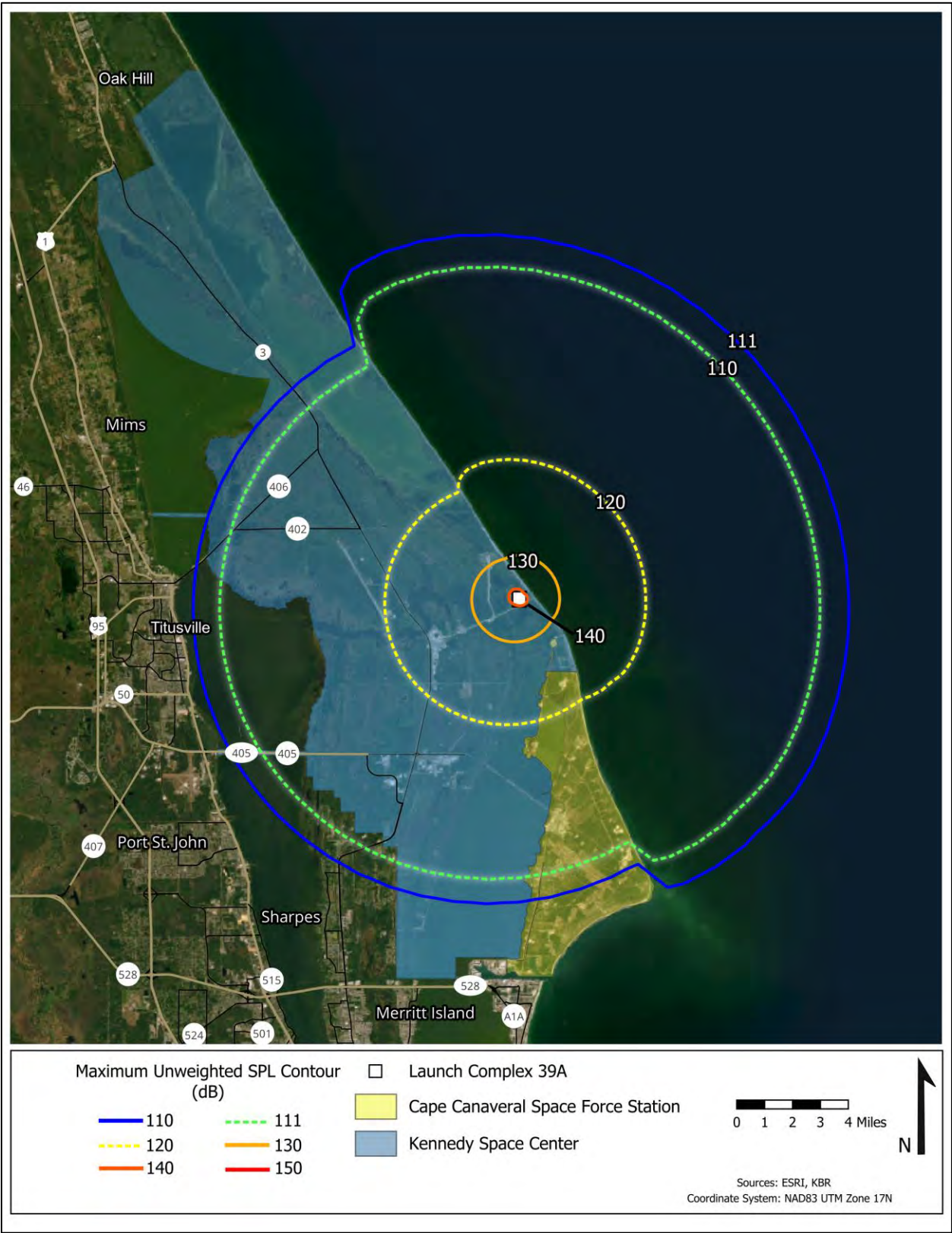


Figure 117. Super Heavy Landing at LC-39A (115-Degrees): Max Unweighted Sound Levels: Winter Day

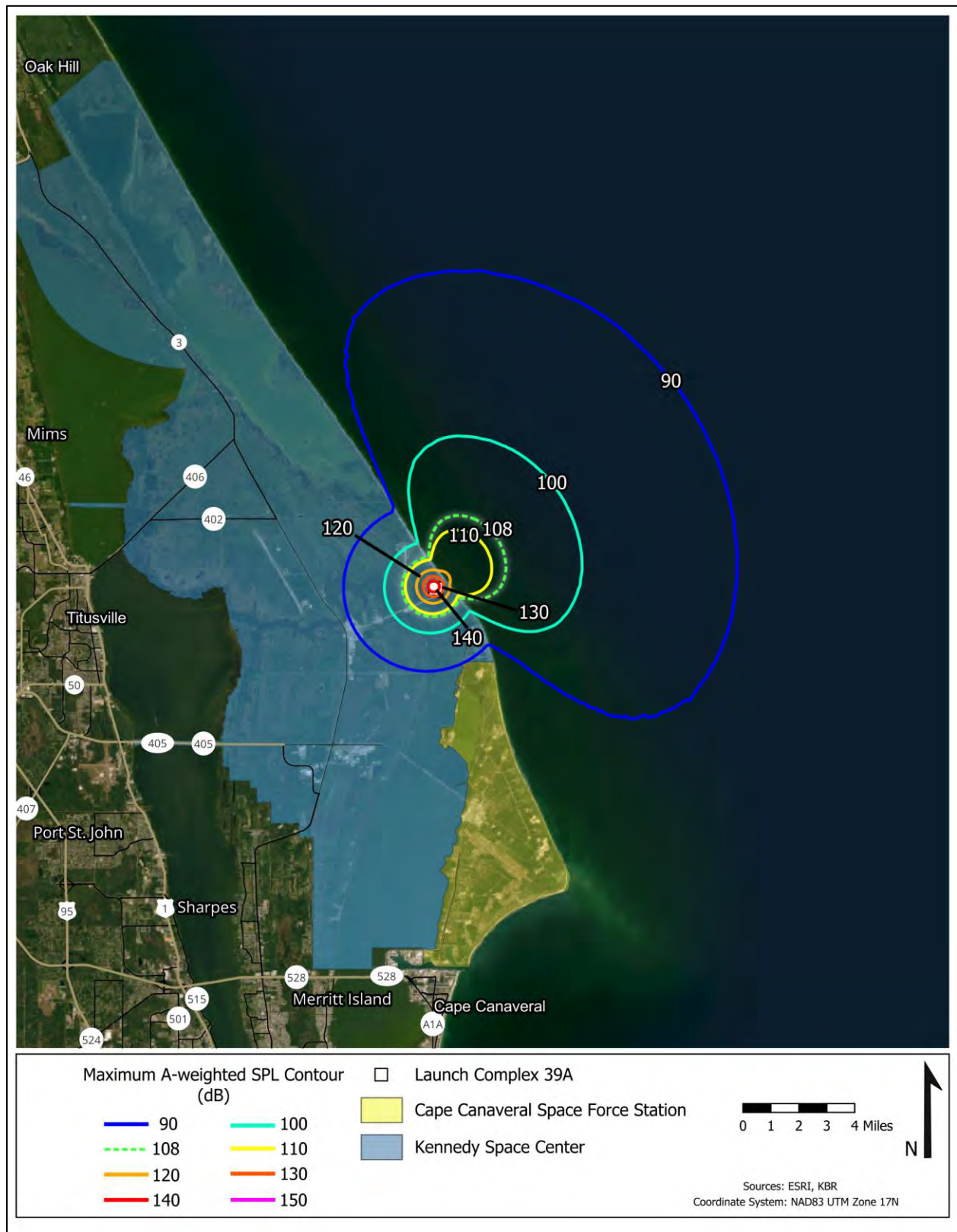


Figure 118. Starship Spacecraft Static Fire Test at LC-39A: Max A-Weighted Sound Levels: Winter Day



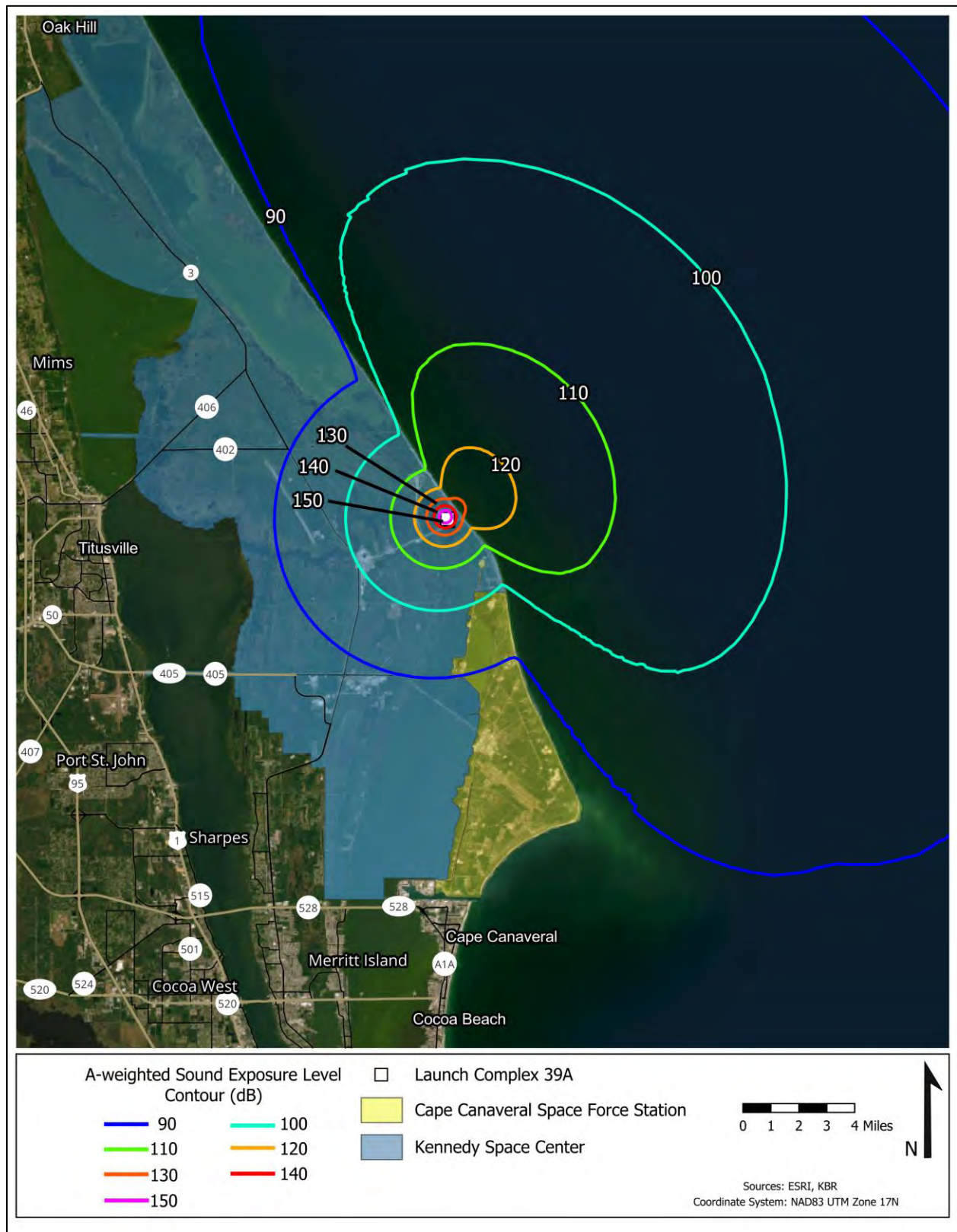


Figure 119. Starship Spacecraft Static Fire Test at LC-39A: Sound Exposure Levels: Winter Day

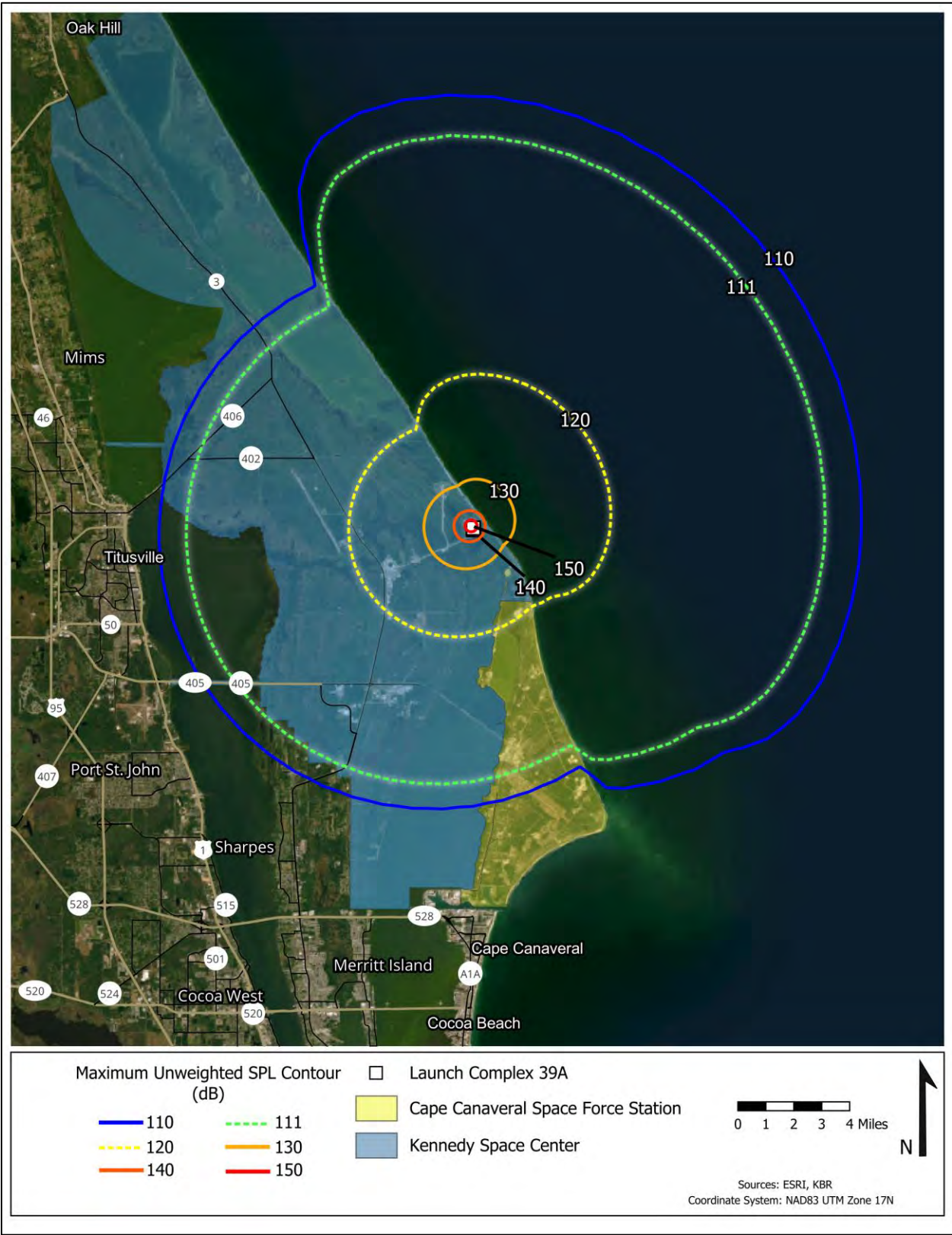


Figure 120. Starship Spacecraft Static Test at LC-39A: Max Unweighted Sound Levels: Winter Day



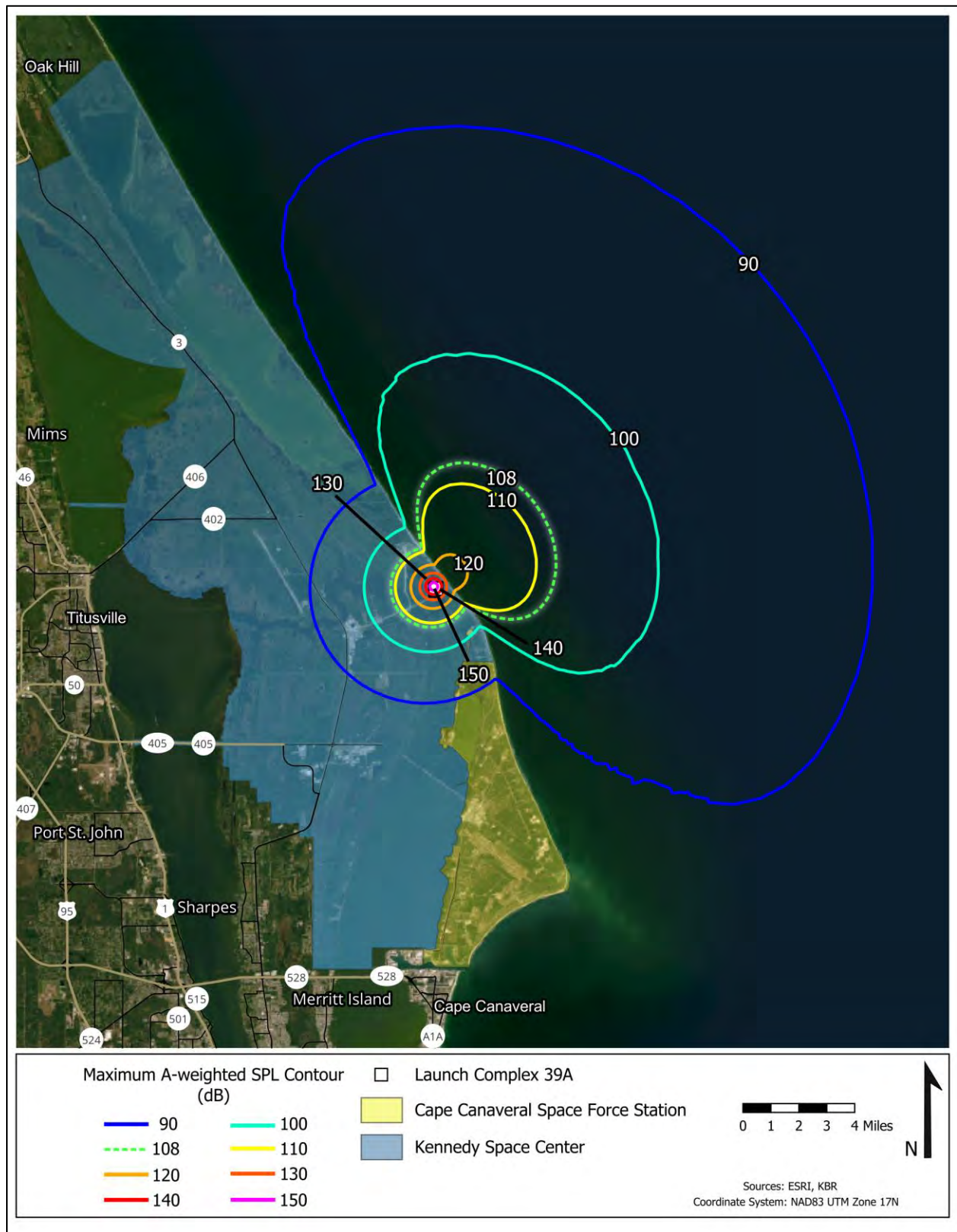
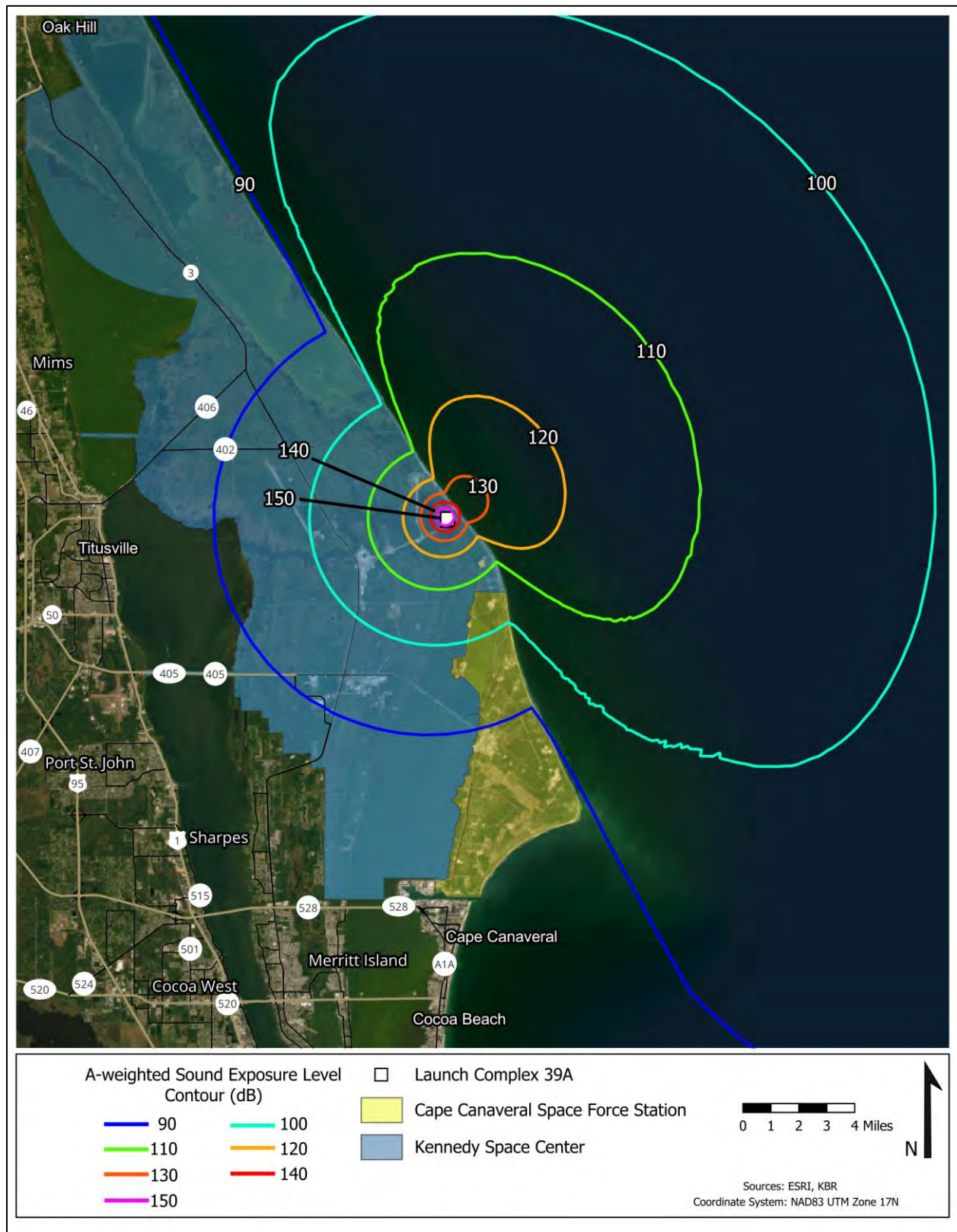


Figure 121. Super Heavy Static Fire Test at LC-39A: Maximum A-Weighted Sound Levels: Winter Day



**Figure 122. Super Heavy Static Fire Test at LC-39A: Sound Exposure Levels: Winter Day**



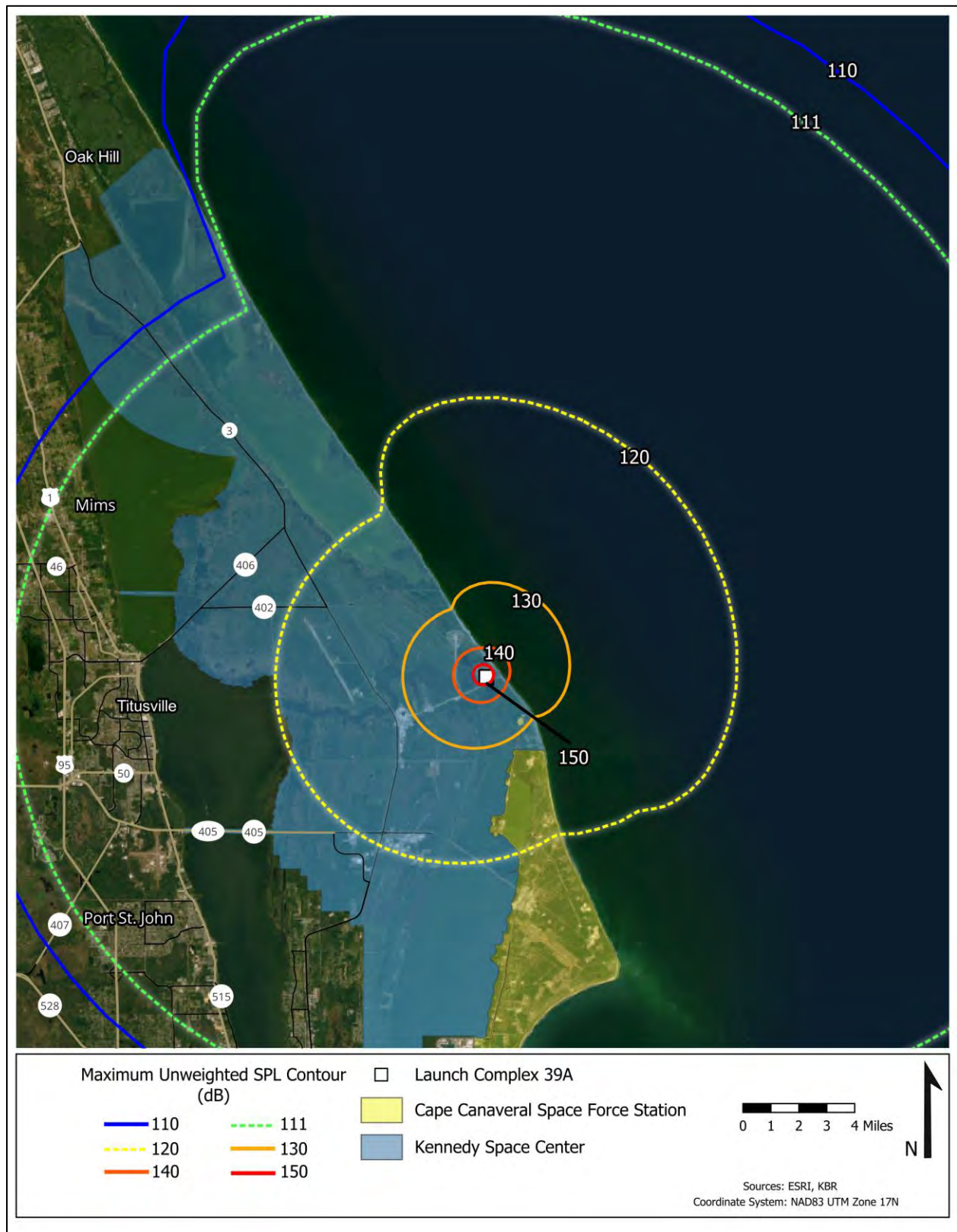


Figure 123. Super Booster Static Fire Test at LC-39A: Maximum Unweighted Sound Levels: Winter Day