Environmental Management and Remediation Plan

Ultra Music Festival

January 28, 2019

Cardno®

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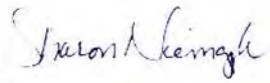

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Acronyms

BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
CATEX	Categorical Exclusion
CDWWTP	Central District Wastewater Treatment Plant
CFA	Core Foraging Areas
CO	Carbon Monoxide
COA	Certificate of Appropriateness
CWA	Clean Water Act
dB	Decibel Scale
dBA	A-weighted Decibel Scale
DDT	Dichlorodiphenyl trichloroethane
DERM	Department of Environmental Management
DOT	Department of Transportation
EA	Environmental Assessment
ECOS	Environmental Conservation Online System
EDM	Electronic dance music
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ERP	Environmental Resource Permit

ESA	Endangered Species Act
FAA	Federal Aviation Administration
FAC	Florida Administrative Code
FARs	Federal Avian Regulations
FDEP	Florida Department of Environmental Protection
FLUCFCS	Florida Land Use, Cover and Forms Classification System
FNAI	Florida Natural Areas Inventory
FONSI	Finding of No Significant Impact
FWC	Florida Fish and Wildlife Conservation Commission
FWRI	Fish and Wildlife Research Institute
GHG	Greenhouse Gas
GIS	Geographic Information System
HAPs	Hazardous Air Pollutants
HCP	Habitat Conservation Plan
HEPB	Historic and Environmental Preservation Board
HVKBP	Historic Virginia Key Beach Park
Hz	Hertz
IPaC	Information, Planning, and Conservation
IRC	Institute for Regional Conservation
ISO	International Standards Organization
ITP	Incidental Take Permit
Leq	Equivalent Sound Levels
MAST	Maritime and Science Technology
MBTA	Migratory Bird Treaty Act
mgd	Million Gallons per Day
MMPA	Marine Mammal Protection Act
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Registry of Historic Places
NSA	Noise Sensitive Area
NSC	Negro Service Council
Plan	Remediation Plan
PM	Particulate Matter
ROD	Record of Decision
RSMAS	Rosenstiel School of Marine and Atmospheric Science
SEFSC	Southeast Fisheries Science Center
SFWMD	South Florida Water Management District
SHPO	State Historic Preservation Office
SO_2	Sulfur Dioxide

T&E	Threatened and Endangered
TODs	Transit-Oriented Developments
UMEH	UM-RSMAS' Experimental Hatchery
UMFR	Ultra Music Festival Radio
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
VOCs	Volatile Organic Compounds

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1. Project Overview

1.1. History of Ultra Music Festival

The ULTRA brand in relation to live events was founded in 1997 in Miami by Executive Producer, President & CEO, Russell Faibisch, who began by producing electronic music events which led to the inaugural Ultra Music Festival® (UMF) in 1999 on the sands of Miami Beach. The internationally renowned Event, which has taken place every March since its inception, celebrated its twentieth anniversary on March 23-25, 2018 by bringing 165,000 music enthusiasts to the sold out waterfront event in the heart of the City of Miami.

Russell Faibisch was born to a family with deep roots in the City of Miami and the South Florida business community for nearly six decades. Russell Faibisch graduated from Hialeah-Miami Lakes Senior High School, and while attending Florida International University, became enthralled with the potential of the area's budding electronic music scene. Taking place on the final weekend of the legendary Winter Music Conference, the first Ultra Music Festival in 1999 was attended by approximately 10,000 people and was only a one-day event.

Over the past twenty years, thousands of the world's most iconic DJs, producers and live acts have mesmerized audiences with awe-inspiring sets at Ultra events across the globe (Figure 1.1-1). Each new global edition has been founded on the same successful recipe that has been perfected over twenty years in Miami, combining the most diverse electronic music talent with the most technologically advanced, large-scale event productions in the world. Ultra events are now held in nearly 30 countries and all six inhabited continents, with over 1 million attendees across all events yearly.

The ULTRA brands have also pioneered the live stream experience with 'ULTRA LIVE' (with over 1 billion live stream and recorded set views from Ultra Music Festival® in Miami since 2013) and the audio broadcasting platform 'UMF RADIO' (syndicated to FM Radio in over 62 countries and reaching more than 22 million listeners weekly). Also, UMF FILMS' collaboration with FINAL KID has seen some of the most visually breathtaking Event after movies in the music space, including a feature-length documentary exploring the explosion of dance music, entitled CAN U FEEL IT™, which was premiered on the red carpet at the Klipsch Amphitheater in Miami in 2012 and was exhibited in over 500 theaters across the United States.

Figure 1.1-1 Ultra Music Festival 2018 Event

In 2016, 2017 and 2018, Ultra Music Festival won the DJ Mag award for "World's Number 1 Event," which was voted on by over 500,000 fans worldwide. In 2008, Ultra was also given the DJ Award for "International Dance Music Event". In 2014, Russell Faibisch was ranked #6 on Rolling Stone's "Most Important People in EDM List". Later that year, Billboard named Faibisch and business partner Adam Russakoff on the "EDM Power Players - Executives List". In 2016, 2017 and 2018 both Russell Faibisch and Adam Russakoff were again named on Billboard's annual "Power List of DJs and Executives". In 2017, Magnetic Magazine named Russell Faibisch the "Industry Person of the Year". As evidenced by Ultra Music Festival's Social Media, the Event was a number one trending topic on Twitter between March 23 and 25, 2018 (Figure 1.1-2).

Figure 1.1-2 Social Media Platform

Beginning in 2019, Ultra Music Festival will be hosted in tandem at both the Miami Marine Stadium Flex Park and the Historic Virginia Key Beach Park (HVKBP). Due to the cultural and historic significance of HVKBP and given the unique environmental considerations associated with the area, Ultra Music Festival intends to take extraordinary great care in its production and remediation approaches. Additionally, the partnership will clear a path to accessing approximately $20 million that has been earmarked to build Miami-Dade County's first African American Museum.

1.2. Event Projected Attendance and Economic Impact to the City of Miami

Ultra Music Festival, a Miami based enterprise, whose corporate service center is based in the Miami area, is an integral part of the Miami business community and event economy. The original music Event began in 1999 as a one-day event with attendance of approximately 10,000 guests. In 2007 the music Event held its first two-day event at Miami's Bicentennial Park reaching an attendance of 50,000 guests. Just two years later the attendance continued to grow to 70,000 guests and was a record-setting event for the City of Miami as the largest number of ticket sales for a single music event. The event sold out for the first time in 2011 with over 100,000 guests. This record attendance at the time, propelled the Event to become a three-day Event to span an entire weekend.

The fourteenth year of Ultra Music Festival, in 2012, attendance topped yet another year at 155,000 guests and moved back to Bayfront Park. Early bird pre-sale tickets sold out within seconds. With exponential growth, Ultra Music Festival had an economic impact in the amount of $79 million. The economic impact of Ultra Music Festival, which was $177 million in 2018, has had a positive and direct financial impact on the City of Miami due to exponential increases in attendance year after year, adding high revenue to the City from tourist attendance, hotel stays, local business sales, and job creation as shown in Table 1.2 between the years of 2013 to 2018.

Ultra Music Festival's fifteenth year anniversary in 2013 marked a two-weekend event attended by 330,000 guests and which generated $223 Million in economic impact. In 2014, Ultra Music Festival returned to a three-day event. Despite its return to occurring over one full weekend, pre-sale tickets sold out in under five minutes showcasing 165,000 guests and yielding $97 Million in economic impact. As displayed in Table 1.2, the attendance at Ultra Music Festival at Bayfront Park had consistently hit 165,000 guests over the last five years. The 2018 Ultra Music Festival generated Ultra Music Festival's highest (i) economic impact to Miami-Dade County at $168 million, (ii) Florida sales tax revenue from ticket sales at $1.7 Million, (iii) job creation at 1,834 jobs, and (iv) labor income at $62 Million.

As of current, the Event is moving to Virginia Key and continuing as a three-day event the weekend of March 29, 30, and 31, 2019. The event will be produced at two locations, the Miami Marine Stadium and the HVKBP. Total maximum attendance is projected at 180,000 guests over the three days. Projected attendance at each of the event locations per day will be approximately 40,000 attendees at the Miami Marine Stadium and projected attendance of up to 20,000 attendees at the HVKBP.

Table 1.2 Economic Impact of Ultra Music Festival for the City of Miami

Year	Economic Impact (Millions)	Florida Sales Tax Revenue (Millions)	Job Creation (Jobs)	Labor Income (Millions)	Attendance
2018	$168 Million	$1,752, 313	1,834	$62 Million	165,000
2017	$148 Million	$1,432,832	1,556	$56 Million	165,000
2016	$147 Million	$1,455,734	1,539	$55 Million	165,000
2015	$133 Million	$1,351,270	1,402	$50 Million	165,000
2014	$97 Million	$1,544,390	1,289	$42 Million	165,000
2013*	$223 Million	$2,056,806	2,841	$96 Million	330,000

The Washington Economics Group
* 2013 reflects Ultra Music Festival attendance and economic impact based over two consecutive weekends in Miami-Dade County.

As Ultra Music Festival continues to grow, its community involvement and engagement efforts grow. Ultra Music Festival has supported community groups such as, but not limited to, the Overtown Music Festival, the Moore Park Learning Center, Badia Senior Center, Centro Mater, South Florida Foster and Adoptive Parent Association, the Our Charles Hadley Park Seniors Hat Brunch, and the Overtown community. Additionally, the Ultra Foundation is being created in support of giving back to communities based in the City of Miami and to those initiatives sharing Ultra Music Festival's philanthropic vision. The Ultra Foundation's mission is to "make a positive impact for children in need through the power of music and entertainment around the world." In 2018, the Ultra Foundation held its first annual charity event benefiting both the Kristi House and Centro Mater. The raised proceeds benefit children who are victims of abuse, disadvantaged, or trafficking and aim to assist with empowering and strengthening these children and families.

1.3. Revocable License Agreement with the City of Miami

On November 15, 2018, the City of Miami City Commission voted to authorize the execution of a Revocable License Agreement respecting the staging of the 3-day Event on Virginia Key. Through the execution of the Revocable License Agreement, the City authorized Event Entertainment Group, Inc.'s (Event Organizer) use of designated portions of Miami Marine Stadium and the HVKBP.

Section 2.14 of the Revocable License Agreement acknowledges the use of the designated properties for a period of thirty-five days to consist of event setup, preparations, and construction, the three-day Event, and event deconstruction. Event setup and preparations shall begin no earlier than Monday,

March 11, 2019 at 7:00 a.m., 18 days prior to the 2019 event. Deconstruction shall be complete no later than fourteen days after the conclusion of each event at 11:59 p.m. on Sunday, April 14, 2019.

The City of Miami has included environmental mandates in the Agreement requiring the delivery of an Environmental Management and Remediation Plan (Plan). As a requirement of the Agreement, the Event Organizer agreed to submit such a Plan to the City Manager for review and approval by the City of Miami sixty days prior to the Event. The Plan shall evaluate and outline preventative measures that will be undertaken to avoid damage to, or contamination of environmentally sensitive habitat, vegetation, or preserved areas. The City requires this Plan to identify remediation activities so that minimization measures will be implemented to avoid or minimize potential adverse impacts to sensitive areas, including wildlife.

1.4. Ecological Setting

Virginia Key is part of a chain of barrier islands that extends along the Florida coast from Miami south to Key West and is part of an evolving landscape. Virginia Key became its own island in the 1830s following a hurricane that separated Virginia Key from Miami Beach (Historic and Environmental Preservation Board Designation Report 2018). To the north of Virginia Key is Fisher Island, Key Biscayne is located to the south, Biscayne Bay and Miami to the west, and the Atlantic Ocean to the east (Figure 1.4).

Figure 1.4 Location Map

1.4.1. Virginia Key

Virginia Key is an approximately 1,000-acre barrier island located in Biscayne Bay. The island contains a variety of upland and wetland plant communities including seagrass beds and inter-tidal sand/mud flats, mangrove wetlands, beach dune communities and coastal maritime hammock. The City of Miami owns the north point of Virginia Key, and the City of Miami Parks and Recreation Department manages the park site for the City.

Biscayne Bay, Card Sound and Little Card Sound were formed 3,000 to 5,000 years ago as the sea level rose. These waterbodies are located between mainland Miami-Dade County and Monroe County, and the barrier islands that separate the bay from the Atlantic Ocean. Historically, Biscayne Bay received freshwater from various kinds of streams although the channelization of natural tributaries and creation of canals severely altered the location, timing and delivery of freshwater to the bay. These freshwater streams are still there or exist in a modified form, although almost none continue to flow naturally. Natural streams include Snake Creek (Oleta River lying downstream), Arch Creek (comprised of two creeks), Little River, the Miami River and Black Creek (FDEP 2018). Virginia Key is approximately 3 miles from mainland Miami and is accessible via the Rickenbacker Causeway.

Man-made interventions as well as natural forces have influenced the island's landscape. In 1902, a channel was created near Virginia Key to establish direct ocean access to the port of Miami, changing ocean currents that battered the island's Atlantic shore and leaving it less attractive for resort development. Since the island wasn't developed, it was used as a landfill and a deposit site for dredge spoils. A sewage treatment plant was built, and water channels were created as part of a mosquito control project, damaging most of the island's natural character, especially in the northern portion. In the 1950s and the 1970s, a series of groins were placed along the shore to stabilize the beach, but currents continued to erode its shore; consequently, unlike the surrounding islands, Virginia Key remained undeveloped and retained much of its natural mangrove forests. In addition to the mangroves, the island's Atlantic shore is fringed with a freshwater wetland, tropical marine hammock, coastal strand, and seagrass communities. These plant communities provide valuable habitat areas for wildlife, including several threatened and endangered species.

Several marine and estuarine natural communities can be found within the Biscayne Bay Aquatic Preserve, including seagrass beds, mangrove swamps, salt marshes, consolidated and unconsolidated substrates, sponge beds, algal beds, worm reefs and others. The rich fauna found in Biscayne Bay results from the diverse habitats found in the bay. Scientists have documented more than 500 species of fish and 800 species of invertebrates. These include several species of shark such as the bonnethead shark, nurse shark and bull shark. Biscayne Bay is also home to many bird species, such as herons, egrets and spoonbills, which may wade in the shallows, feeding on the fish and invertebrates.

Biscayne Bay is home to a number of listed species including the Florida manatee, wood stork, American crocodile and several species of sea turtles. Johnson's seagrass, the only listed marine plant, can also be found in the northern stretches of Biscayne Bay. South Florida is particularly vulnerable to invasive species because it is in a transitional zone between temperate and tropical climates. Non-native invasive species of the Biscayne Bay Aquatic Preserve include plants such as Australian pine, Brazilian pepper and wildlife such as the red lionfish and several mollusk species (Historic and Environmental Preservation Board Designation Report 2018).

The City of Miami Parks and Recreation Department is currently involved in the restoration and preservation of the 15-acre hammock area located on Virginia Key. This has involved the removal of invasive exotic vegetation and restoring native plants to the area. During this process, many important botanical species have been discovered including some that are classified as threatened or endangered such as Biscayne prickly-ash (*Zanthoxylum coriaceum*), Florida silver palm (*Coccothrinax argentata*), and Beachberry (*Scaevola plumieri*) (City of Miami Parks and Recreation 2018).

The island is occupied mainly by the HVKBP, Miami Seaquarium, Miami-Dade's Central District Wastewater Treatment Plant, the University of Miami Rosenstiel School of Marine and Atmospheric Science (RSMAS), and the Maritime and Science Technology (MAST) Academy. Other facilities include the former Miami Marine Stadium, the National Marine Fisheries Service (NMFS) Southeast Fisheries Science Center, and an office of the U.S. National Oceanic and Atmospheric Administration (NOAA) (Wikipedia 2018a).

The production of the Event includes the in-tandem staging of the Event at both Miami Marine Stadium and HVKBP.

1.4.2. Land use and Cover

The Florida Department of Transportation (DOT) Florida Land Use, Cover and Forms Classification System (FLUCFCS) was used to develop a map of the land use and cover that exists on Virginia Key. The island consists of a mixture of natural habitat (uplands and wetlands) and developed/urban areas. A FLUCCFS map based data obtained from the South Florida Water Management District (SFWMD) and the Virginia Key Master Plan, is presented as Figure 1.4.2.

Figure 1.4.2 Land Use

The Event will involve only developed areas of Virginia Key, including the existing Miami Marine Stadium and already disturbed, open land. Table 1.4.2 presents the land use and cover that exist on Virginia Key. Approximately 323 acres of the island consists of native habitat comprised of mangrove swamps, coastal scrub, swimming beach, hardwood-conifer mixed uplands, and mixed shrubs. Additionally, there are approximately 366 acres of developed/urban areas including educational facilities, commercial and services, communications, institutional, roads and highways, and a wastewater treatment plant. Disturbed land and nuisance/exotic vegetation cover (including Australian pine, melaleuca, and mangroves mixed with Australian pine) account for approximately 279 acres, and the remaining 43 acres are attributed to open land and lakes.

Table 1.4.2 Virginia Key – Florida Land Use, Cover and Forms Classification System

FLUCFCS Code	Description	Acres
1400	Commercial and Services	77.87
1700	Institutional	46.9
1710	Educational Facilities	10.79
1810	Swimming Beach	9.09
1900	Open Land	34.94
3220	Coastal Scrub	47.39
4240	Malaleuca	6.31
4340	Hardwood-Conifer Mixed	35.71
4370	Australian Pines	158.88
5200	Lakes	7.84
6120	Mangrove Swamps	213.12
6120/4370	Mangroves with Australian Pines	54.31
6170	Mixed Shrubs	17.19
7400	Disturbed Land	65.38
8140	Roads and Highways	31.61
8200	Communications	43.09
8340	Sewage and Treatment	155.44

1.4.3. Soils

According to the Natural Resources Conservation Service (NRCS) soil survey for Miami-Dade County, six soil types occur on Virginia Key. These are shown on Figure 1.4.3 (NRCS soils map) and presented in Table 1.4.3. The Event would occur primarily on urban land soil types.

Figure 1.4.3 NRCS Soils

Table 1.4.3 Virginia Key – NRCS Soils on Virginia Key

Soil Code	Description	Acres
15	Urban Land	269.49
39	Beaches	21.42
45	Canaveral Sand	38.92
48	Kesson Muck, tidal	139.64
9	Udorthents-Water Complex	525.26
99	Water	8.68

1.4.4. Existing Land Use

Currently the Island has two different patterns of land use, one along Rickenbacker Causeway and the other one in the main area of the Key (Virginia Key Master Plan 2010).

Along the causeway, Commercial and Institutional uses are predominant with the exception of Hobie Beach, categorized as a Park. Within Virginia Key, the majority of the land is considered Parks and includes the Natural Preserves as well as other recreational areas. Another land use component includes Communications, Utilities, Terminals, and Plants; and includes the Sewage Plant, Antennae, and North Point. The remainder is the vacant, government-owned land corresponding to the landfill and some other areas (Virginia Key Master Plan 2010). Today, Virginia Key also houses the HVKBP, Miami-Dade's Central District Wastewater Treatment Plant, University of Miami – RSMAS, the MAST Academy, Miami Marine Stadium, the NMFS Southeast Fisheries Science Center, NOAA, and recreational areas. Miami Seaquarium is the only large private enterprise on the island; other businesses include restaurants and concessions providing recreational equipment rental (Historic and Environmental Preservation Board Designation Report 2018).

1.4.4.1. Historic Virginia Key Beach Park

HVKBP is an 82.5-acre site located on the southeastern side of Virginia Key. The property belongs to the City of Miami and is maintained by the City of Miami Parks and Recreation Department. The responsibility of this property is shared in part with the Virginia Key Beach Park Trust who manages the historic portion of the beach front and oversees the preservation and future development of Virginia Key Beach. In addition to the beaches and environmental restoration projects, the Virginia Key Beach Park area also offers a 4.1-mile bike trail. Built through a collaborative effort with volunteers and City resources, the bike trail offers multi-level (from novice to advanced) riders an opportunity to bike among native vegetation and along the coastal shores (City of Miami Parks and Recreation 2018).

In 1982, the City of Miami closed Virginia Key Beach Park, citing the high cost of maintenance and operations. In June 1999, a diverse group of citizens called the Virginia Key Beach Park Civil Rights Task Force was established in response to plans of private development on the beach park.

Later that year, the Miami City Commission established the Virginia Key Beach Park Trust to oversee the development of the historic park property. The Trust has been working diligently to provide the community a location for family events, community meetings, corporate meetings, as well as a beachfront for swimming and water activities. In August 2002, the park was placed on the National Register of Historic Places. HVKBP reopened to the public in February 2008 with many of the amenities of the past, as well as some new venues as suggested by the community. The HVKBP is open to the public today; ecosystem restoration projects, interpretive signage and the construction of an interpretive/cultural center remain to be completed (Virginia Key Beach Park 2018a).

Several music and cultural events have taken place at the HVKBP in the past. Table 1.4.4 provides a list of 54 such events that have taken place at the HVKBP from 2014 through 2019. In addition, certain aspects of the events listed below did not undertake any specific mitigation efforts for environmental and traffic impacts and neither has the upcoming events (9-Mile Music Festival which is scheduled to occur at

the HVKBP on March 9, 2019 and the EGBE Orisa Traditional Arts & Cultural Festival which is scheduled to occur February 1 – 3, 2019).

Table 1.4.4 Events that have taken place at Historic Virginia Key Beach Park from 2014 – 2019

Dates	Event Name	Event Time	Total No. of Hours
1/24/2019-1/28/2019	Love Burn	10:00 AM – 12:00 PM	98
12/8/2018	RAKASTELLA	03:00 PM - 7:00 AM	16
11/17/2018	108 Experience 2018 Festival	10:30 AM - 9:30 PM	11
11/10/2018 -11/11/2018	HOUSE OF CREATIVES	11:00 AM - 02:00 AM	30
11/2 /2018 – 11/4/2018	BRT Weekend	08:00 AM - 06:00 PM	30
10/8/2018	BACCHANAL BEACH - All White Beachside Party	03:00 PM - 10:00 PM	7
10/5/2018	SOCAVIVOR – RISE MIAMI & SHINE NYC	11:00 AM - 07:00 PM	8
7/29/2018	BEACH BAWL	03:00 PM - 09:00 PM	6
3/22/2018 – 3/23/2018	Rapture Electronic Music Festivals	12:00 PM - 03:00 AM	15
3/10/2018	9 Mile Music Festival – 25th Year Anniversary	11:55 AM - 11:00 PM	11
3/3/2018	ARTSea Festival 2018	08:00 AM - 06:00 PM	10
2/22/2018 – 2/25/2018	Virginia Key Grassroots Music Festival 2018	08:00 AM - 06:00 PM	40
2/10/2018	1st Annual EGBE Festival	12:00 PM - 10:00 PM	10
2/2/2018 – 2/4/2018	Fractal Beach 2018	08:00 AM - 06:00 PM	30
1/26/2018 – 1/28/2018	Love Burn 2018	09:00 AM - 09:00 PM	36
12/9/2017 – 12/10/2017	OFF Weekend Music & Arts Festival 2017	12:00 PM	unknown
12/7/2017 – 12/11/2017	Rakastella by Innervisions & Life and Death 2017	2:00 PM - 4:00 AM	14
11/11/2017 – 11/12/2017	Where Are My Keys?- Art Basel Edition	08:00 AM - 06:00 PM	50
10/21/2017	House of Creatives Music Festival	11:00 AM - 02:00 AM	30
10/6/2017 – 10/7/2017	Wanderlust 108 Miami	07:30 AM - 03:30 PM	8
7/27/2017	Socavivor – Rise Miami Shine NYC	All of Day	~24
7/15/2017	Love Burn 2017	08:00 AM - 06:00 PM	10
7/3/2017	Beach Bawl	12:00 PM - 08:30 PM	8.5
7/3/2017	Electric Karnival	12:00 PM - 11:00 PM	11
5/21/2017	Various Artistes	unknown	unknown
4/30/2017	DJ Xclusive City and DJ Stakz concert	17:00	unknown
4/16/2017 – 4/17/2017	Day Dreamers Beach Party	12:00 PM - 11:55 AM	12
3/25/2017 – 3/26/2017	Where Are My Keys – Spring Edition Beach Party	02:00 PM - 02:00 AM	12
3/23/2017 – 3/24/2017	Electric Pickle Event	08:00 AM - 06:00 PM	10
3/11/2017	Rapture Electronic Festival	12:00 PM - 02:00 AM	14
2/26/2017	9 Mile Music Festival	12:00 PM - 11:55 PM	12
11/18/2016 to 11/20/2016	Giant Panda Guerilla Dub Squad	8:00 PM	unknown

Dates	Event Name	Event Time	Total No. of Hours
6/18/2016	Afrikinfest 2016	04:00 PM - 11:59 PM	24
3/12/2016	Reunion Music Fest 2016	unknown	unknown
3/11/2016	The Resolvers Concert	5:00 PM	unknown
2/27/2016 – 2/28/2016	Fractal Beach Fest 2016	08:00 AM - 06:00 PM	likely 10
2/20/2016	9 Mile Music Festival 2016	12:00 PM - 11:55 PM	likely 12
2/19/2016	Elastic Bond Concert	9:00 PM	unknown
2/19/2016	Scythian Concert	8:00 PM	unknown
2/18/2016	33 Years Concert	1:30 PM	unknown
2/18/2016	Bachaco Concert	8:00 PM	unknown
12/12/2015	Paleface Concert	unknown	unknown
12/12/2015	Bachaco Concert	2:00 PM	unknown
2/19/2015 – 2/22/2015	Maxi Priest Concert	unknown	unknown
2/22/2015	Virginia Key GrassRoots Festival 2015	08:00 AM - 06:00 PM	40
2/21/2015	Spam Allstars Concert	unknown	unknown
2/20/2015	Suenalo	4:00 PM	unknown
2/19/2015	Elastic Bond Concert	7:00 PM	unknown
2/12/2015 – 2/15/2015	Suenalo	9:00 PM	unknown
2/20/2014 – 2/23/2014	The Love Burn 2015	6:30 PM	likely 36
2/21/2014	Virginia Key GrassRoots Festival of Music, Art & Dance 2014	08:00 AM - 06:00 PM	likely ~40
2/20/2014	Elastic Bond Concert	6:30 PM	unknown
2/20/2014 - 2/21/2014	Elastic Bond Concert	9:45 PM	unknown

Sources: Songkick: https://www.songkick.com/venues/1587513-historic-virginia-key-beach-park/gigography and HCKBP: https://virginiakeybeachpark.net/projects/

1.4.4.2. Miami Seaquarium

The Miami Seaquarium is a 38-acre marine life entertainment park that is home to several species of marine and aquatic life. The park is located on the southern portion of Virginia Key, just off the Rickenbacker Causeway. The Seaquarium opened its doors in 1955 and offers a variety of unique interactive and educational experiences, including sea turtles, dolphin and manatee exhibits as well as learning about ongoing conservation efforts (Miami Seaquarium 2018). Miami Seaquarium is the only large private enterprise on the island (Historic and Environmental Preservation Board Designation Report 2018).

1.4.4.3. Miami-Dade's Central District Wastewater Treatment Plant

The Central District Wastewater Treatment Plant (CDWWTP) is approximately 135 acres and is located at the northern end of Virginia Key. Access to the plant is via Arthur Lamb Jr. Road and Sewage Plant Road. The plant is engaged in wastewater treatment activities and is publicly owned. The first treatment facilities at the Virginia Key site became operational in 1956 with a capacity of 47 million gallons per day (mgd). Since that time numerous additions and modifications to the plant have been made, including the change from aeration to oxygenation in the original plant. The facility consists of two parallel wastewater treatment trains, Plant No. 1 and Plant No. 2. Plant 1 is rated at 60 mgd annual average daily flow and Plant 2 is rated for 83 mgd annual average daily flow. The total facility is rated at 143 mgd annual average daily flow (Google 2018).

1.4.4.4. The University of Miami Rosenstiel School of Marine and Atmospheric Science

The RSMAS is an academic and research institution for the study of oceanography and the atmospheric sciences within the University of Miami. The school utilizes scientific research on the oceans, atmosphere, geology, biota, and the human dimension to gain further knowledge of the planet and oceans, while training the next generation of scientists. The location of the 16-acre campus on Virginia Key was formally established in 1945 (RSMAS 2018).

1.4.4.5. MAST Academy

The Maritime and Science Technology (MAST) Academy is a magnet school under the governance of Miami-Dade County Public Schools (Wikipedia 2018b). Established in September 1991, MAST Academy is the only maritime and science technology magnet high school in the Miami-Dade County Public School system. The school graduated its 25th senior class in 2018. The school is staffed by a principal, two assistant principals, one lead teacher, and 84 full and part-time faculty members of whom approximately 84 percent have a master's degree or higher. The senior class of 2019 consists of 243 seniors. MAST has 1,505 students in grades 6-12. Students graduate with a full range of honors, AP, Cambridge (AICE), and Dual Enrollment courses. The school includes two large classroom buildings, a pool, boathouse, docks, fitness center, and a media center with over 22,000 print and non-print items. Students have immediate access to technology throughout the school (MAST Academy 2018).

1.4.4.6. Miami Marine Stadium

The Miami Marine Stadium consists of 240 acres including land and water and a 6,566-seat stadium that was completed in 1963 and is located on the southwestern portion of Virginia Key, off Vero Street. It was the first stadium purpose-built for powerboat racing in the U.S. and was listed on the National Register of Historic Places in 2018. The site was condemned in 1992, after Hurricane Andrew; however, since that time, the group Friends of Miami Marine Stadium has sought to revitalize the stadium and has succeeded in bringing large-scale live productions, among other events, to the arena (Wikipedia 2018c). The Miami Marine Stadium has been the home of the Miami Boat Show since 2015. In addition, the most recent music event to have taken place at the Miami Marine Stadium was the Tequila Bay Country Music Festival, which was an all-day event that took place in September 2017.

Several private and public events are also scheduled to take place at this location, including the upcoming Progressive Miami Boat Show scheduled to take place from February 14 through 18, 2019; the Swim Miami 2019 event in May 2019; and the South Florida Seafood Festival scheduled for October 2019 (Eventful 2019). A regatta is also proposed to take place at the stadium in 2020.

1.4.4.7. U.S. National Oceanic and Atmospheric Administration National Marine Fisheries Service Southeast Fisheries Science Center

The Southeast Fisheries Science Center (SEFSC) is located in the southern portion of Virginia Key and conducts multi-disciplinary research programs to provide management information to support national and regional programs of NOAA's NMFS. The SEFSC is responsible for scientific research on living marine resources that occupy marine and estuarine habits of the continental southeastern United States, as well as Puerto Rico and the U.S. Virgin Islands. The SEFSC is one of the six national marine fisheries science centers responsible for federal marine fishery research programs. The SEFSC, headquartered in Miami, FL, is organized with divisions and labs across the southeast region of the U.S., including the Beaufort, NC Lab, the Galveston, TX and Lafayette, LA Labs, the Miami, FL Lab, the Panama City, FL Lab, and the Pascagoula, MS and Stennis, MS Labs (NOAA 2018).

1.4.4.8. Natural Areas

In addition to the developed areas of Virginia Key, there is also approximately 650 acres of natural/undeveloped land. The island contains a variety of upland and wetland plant communities including seagrass beds and inter-tidal sand/mud flats, mangrove wetlands, beach dune communities, and coastal maritime hammock. Virginia Key provides habitat for a number of endangered/threatened plant and animal species (Section 3.5). Virginia Key and all of the barrier islands along South Florida have historically provided prime turtle nesting habitat due to the prevalence of sandy beach habitat. However, due to coastal

development and light pollution, limited historic sea turtle habitat remains in South Florida. Invasive non-native plants, such as Australian pine have colonized landward swaths of beach where turtles historically nested, thereby limiting the width of beach available for nesting females to lay their eggs (The Nature Conservancy 2014).

1.4.5. Human Use

1.4.5.1. Recreation/Tourism/Entertainment

The HVKBP belongs to the City of Miami and is maintained by the City of Miami Parks and Recreation Department; the responsibility is shared in part with the Virginia Key Beach Park Trust who manages the historic portion of the beach front and oversees the preservation and future development of Virginia Key Beach. The Virginia Key Beach Park Trust is also responsible for the operation and management of the HVKBP, including the scheduling and coordination of onsite productions. The HVKBP area also offers a 4.1-mile bike trail. Built through a collaborative effort with volunteers and City resources, the bike trail offers novice through advanced riders an opportunity to bike among native vegetation and along the coastal shores (City of Miami, Parks and Recreation 2018).

A shared pedestrian/bicycle path is provided on the west side of Rickenbacker Causeway. The pedestrian/bicycle path runs the entire length of the island alongside the causeway and extends into Miami and Crandon Park Boulevard on either end of the island. Pedestrian shelters and benches are provided along the path for refuge. At the signalized intersections on Rickenbacker Causeway, other pedestrian features are provided including marked crosswalks, pushbuttons, and pedestrian signal indicators. There are currently only two pedestrian crossings across Rickenbacker Causeway. The existing pedestrian crossings are located across the north leg of the MAST Academy Drive and Rickenbacker Causeway intersection and across the south leg of the Virginia Beach Drive and Rickenbacker Causeway intersection. Where the shared bike/pedestrian facility crosses the driveways, regulatory signs are provided either for the non-vehicular traffic or for the vehicles conflicting with the facility (Virginia Key Master Plan 2010).

Beach front cabins are reportedly available for daily rentals and onsite charcoal barbecue pits are also available for use by beach goers. (Virginia Key Beach Park 2018a).

As stated, the Miami Seaquarium offers year-round opportunities for locals and tourists to enjoy unique interactive and educational experiences, including sea turtles, dolphin and manatee exhibits as well as learning about ongoing conservation efforts. In addition, the Miami Marine Stadium and several areas of the park offer opportunities for entertainment and hosts several music and art events throughout the year. Other businesses include restaurants and concessions providing recreational equipment rental.

1.4.5.2. Education/Research

The Miami Seaquarium, MAST, RSMAS, and NMFS facilities located on Virginia Key undertake continued research and marine and oceanic investigations to gain further knowledge and insight into the abundant aquatic life the surrounding Biscayne Bay Aquatic Preserve and Atlantic Ocean. Their location on Virginia Key is advantageous to these educational and scientific research facilities.

1.4.5.3. Sewage and Wastewater Treatment

The CDWWTP consists of two parallel wastewater treatment trains and is rated at 143 mgd annual average daily flow.

1.5. Applicable Environmental Regulations

Approximately 19.4 acres at Miami Marine Stadium and 21.4 acres at HVKBP of previously developed uplands will be used during the Event for temporary stages and similar and/or related structures, and infrastructures to administer offices, security and first responder hubs, food and merchandise vending and non-profit organization activations constructed onsite. In addition, an existing marginal dock along the seawall of the waterway basin of the Miami Marine Stadium will also be used. The dock will have strictly controlled access and will accommodate water taxis for drop-offs and pick-ups for regular Event patrons. In addition, up to 49 boats will be allowed to dock at this location. Because of the nature of the Event and

the temporary construction elements that will be required for the Event, potential impacts to wildlife and threatened and endangered species are comprehensively considered and appropriate mitigation measures are provided. The following sections discuss the Local, Federal, and State environmental regulations that may be applicable, as well as Local, State, and Federal permits that were considered but determined not to be required or applicable to the construction, production and deconstruction of the Event.

1.5.1. Local

The Miami-Dade County Department of Environmental Resources Management (DERM) is responsible for the enforcement of Chapter 24 and 11C of the Miami-Dade County Municipal Code which includes the enforcement and compliance of federal and state delegated programs, including, but not limited to air quality, water and soils, natural and biological environmental resource permitting and protection, tree preservation and protection, and the environmentally endangered lands program (Miami-Dade Government 2018a).

1.5.1.1. Coastal Construction within Miami-Dade County

Permits by the applicable agencies (including DERM) have already been issued to the National Marine Manufacturer's Association for the construction, use, and deconstruction of a temporary marginal dock within the Miami Marine Stadium basin for the 2019 Miami International Boat Show, which will be held at the Miami Marine Stadium from February 14 – 18, 2019. This temporary dock is now in place but permits for deconstruction are scheduled to expire on or about March 15, 2019. However, because the producers of the Event intend to use this dock, revised permits have been submitted to the applicable agencies by the Event Organizer to extend the use/deconstruction of the dock up to and including through the end of the Event Organizer's use period.

1.5.1.2. Natural Forest Community Permit

Natural Forest Community protection and preservation helps ensure that these habitats and their associated rare plants, animals and geologic features remain part of Miami-Dade County's natural heritage for the benefit and enjoyment of present and future generations. In Miami-Dade County, any activity that results in the removal or damage to any vegetation in a designated Natural Forest Community, including impacts to any tree, shrub, or groundcover plant, requires a permit (Miami-Dade Government 2018b). As no Natural Forest Community is proposed for alteration, no permit is required.

1.5.1.3. Air Operating Permit

A Miami-Dade County Air Operating Permit is required for any air pollution source subsequent to construction or modification of the facility, and after demonstrating compliance with the terms and conditions of the county air construction permit. Depending on the type of facility and the amount of air emissions expected to be generated, the State of Florida may require a facility permit. Any facility with the potential to emit the following air pollutants may require a County operating permit:

- Particulate Matter (PM)
- Sulfur Dioxide (SO_2)
- Nitrogen Oxides (NOx)
- Carbon Monoxide (CO)
- Volatile organic compounds (VOCs)
- Lead
- Hazardous Air pollutants (HAPs)

The category of permit (Class A, B or C) is dependent upon the volumes and types of emissions (before controls) as follows: C Source (less than 25 tons/year); B Source (equal to 25 tons/year but less

than 100 tons/year); and A Source (equal or more than 100 tons/year). Some industry types or operations require Class A or B county air construction permits even if emissions are below the thresholds (Miami-Dade Government, 2018c).

As has been the case for the approximately 53 previous and similar public events, including music events, held on Virginia Key (Virginia Key Beach Park 2018b), no emissions triggering Local or State Air Operating Permit requirements are anticipated.

In addition, according to the HVKBP special events application and as part of the Revocable License Agreement, the Event Organizer is responsible for obtaining all required local permits. Issuance of permission for the Event will be granted after all due consideration to safety, traffic, needs of residents, business, and religious institutions in the area is given. Some of the required local permits and services that will be needed for the Event include:

1. Police special events permit
2. Fire assembly and Fireworks permits
3. Traffic control and security
4. Fire inspectors and rescue units
5. Alcohol Special Sales License – Liquor, Beer and wine permit
6. Permits that apply to mechanical, electrical, water, cleaning crews, solid waste, and light towers in necessary areas

1.5.1.4. Lighting Regulations for Marine Turtle Protection – Key Biscayne

The regulations cited below are specific to Key Biscayne and not applicable to Virginia Key. Furthermore, as detailed in Section 3.5, no impacts to sea turtles are anticipated as the Event is scheduled prior to their nesting season.

Article VI. Lighting Regulations for Marine Turtle Protection, Section 8-401, aims at reducing the impacts of artificial coastal lighting on threatened and endangered sea turtles that nest on the beaches of Key Biscayne by restricting artificial lighting and other activities that disorient turtle hatchlings, causing them to crawl toward land rather than toward the ocean. This article is intended to provide overall improvements in nesting habitat degraded by light pollution and increase successful nesting activity and production of hatchlings. The restrictions and constraints of this article shall be effective within the incorporated areas of Key Biscayne and apply to any artificial lighting that has potential to adversely impact sea turtles within Village of Key Biscayne limits. According to Section 8-403, the following activities involving direct illumination of portions of the beach are prohibited on the beach at nighttime during the nesting season for the protection of nesting marine turtle females, nests and hatchlings:

- The operation of all motorized vehicles, except emergency and law enforcement, or beach maintenance vehicles or those permitted on the beach for marine turtle's conservation and/or research.
- The building of campfires or bonfires.
- Fireworks displays, except those that have Village special event permits and, if applicable, a Florida Department of Environmental Protection (FDEP) permit; however, nothing in this article shall prohibit the Village's offshore annual July 4th fireworks display.
- Special events pursuant to subsections 17-4(12) and 30-102(c) of the Village Code unless allowed first by permit issued by the FDEP.

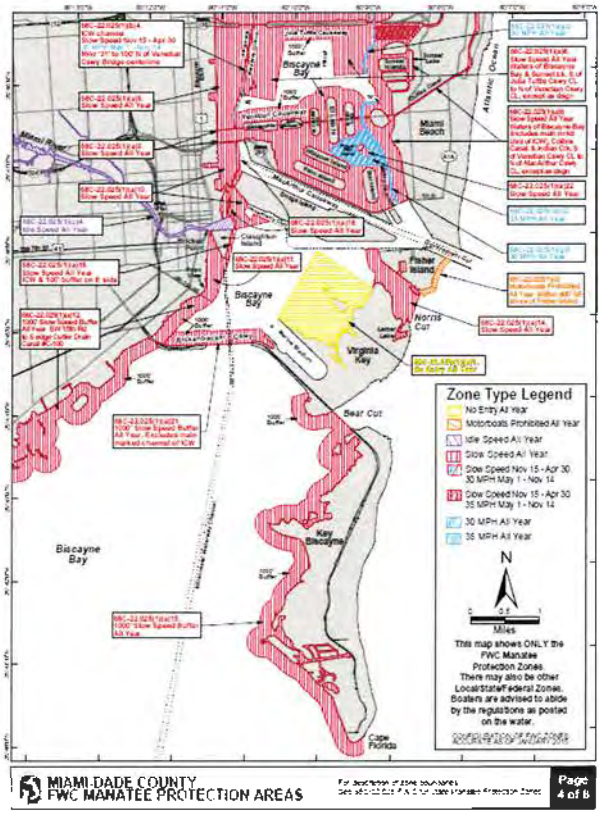
1.5.1.5. Miami-Dade County Manatee Protection Plan and Protection Areas

In October 1989, the Florida Governor and Cabinet directed 13 key counties to develop manatee protection plans. This directive was eventually required by Florida Statute in 2002. Manatee protection

plans must include guidelines for the siting of new or expanded marine facilities to help reduce the risk of impacts from vessel traffic -- as well as address other human-related causes of manatee death, habitat protection, education and law enforcement.

The following guidelines or objectives have been established for the Miami-Dade Manatee Protection Plan, approved in 1995: reduce the number of manatee mortalities and injuries, including but not limited to those which are human-related, particularly flood gate and boat-related causes; protect manatee habitat (the Marine Mammal Protection Act aims to maintain the health and stability of the marine ecosystem) and upgrade where possible; minimize manatee harassment; increase public awareness of the need to protect manatees and their environment; and monitor the status of manatee populations and their habitats. According to the Miami-Dade plan, no Essential Manatee Habitat is located within the waters of the basin of the Miami Marine Stadium, but Essential Manatee Habitat is located around the northwest side of Virginia Key associated with the submerged lands around the Bill Sadowski Critical Wildlife Area (Metropolitan Dade County 1995). Local governments further establish manatee protection zones through the adoption of a local ordinance. These zones must be approved by FWC before they can take effect, as required by 379.2431(2)(p),FS. For Miami-Dade, designated protection zones can be found in 68C-22.025 F.A.C and are depicted on Figure 1.5.1.5-1 below. The submerged areas around the northwest side of Virginia Key associated with the Bill Sadowksi Critical Wildlife Area is designated "No Entry All Year". The northern side of Virginia Key associated with Norris Cut is designated as "Slow Speed All Year". The waters of the basin of the Miami Marine Stadium is not included in any designated manatee protection areas, although the area just north of Rickenbacker Causeway is designated "Slow Speed All Year" (FWC 2015).

Per the Miami-Dade plan, events occurring in the Miami Marine Stadium should require manatee observers on boats positioned near the entrance to the stadium. Conservation measures specific to manatees are discussed in Section 3.5.10.1 below.



Figures 1.5.1.5 Miami-Dade County Manatee Protection Areas

1.5.2. State

1.5.2.1. State Regulation on Threatened and Endangered Species

Regulation of Florida state-listed species is defined under Chapter 68A-27 Florida Administrative Code (F.A.C.), Rules Relating to Endangered or Threatened Species. The goal of these rules is to "effectively reduce the risk of extinction through the use of a science-informed process that is objective and quantifiable, that accurately identifies endangered and threatened species that are in need of special actions to prevent further imperilment, that identifies a framework for developing management strategies and interventions to reduce threats causing imperilment, and that will prevent species from being threatened to such an extent that they become regulated and managed under the Federal Endangered Species Act (ESA) of 1973, as amended, 16 U.S.C. §1531 et seq."

No "take" of Florida state-listed species as defined under Chapter 68A-27 F.A.C. is anticipated to occur as a result of the Event.

1.5.2.2. Preservation of Native Flora of Florida Act

Initiated in 1984, the Preservation of Native Flora of Florida Act (Sections 581.011 and 581.185(2), Florida Statutes and Chapter 5B-40.001, F.A.C.) defines plant species in Florida that are endangered or are commercially exploited, thus averting damage to native plant populations. Agency permits for work on public land or permission from the landowner on private lands are required to willfully harvest, collect, pick, remove, injure, or destroy plants listed in this Act, and a permit is required to sell commercially exploited plants.

No such harvest removal, disturbance or destruction of endangered plants listed in this Act as a result of the Event are proposed or anticipated.

1.5.2.3. Marine Turtle Protection Acts

All sea turtles in Florida are listed as either endangered or threatened species. They are protected under the ESA and Florida's Marine Turtle Protection Act (379.2431, Florida Statutes). Florida Statutes restrict the take, possession, disturbance, mutilation, destruction, selling, transference, molestation, and harassment of marine turtles, nests or eggs. Protection is also afforded to marine turtle habitat. A specific authorization from Florida Fish and Wildlife Conservation Commission (FWC) staff is required to conduct scientific, conservation, or educational activities that directly involve marine turtles in or collected from Florida, their nests, hatchlings or parts thereof, regardless of applicant's possession of any federal permit under the Florida Marine Turtle Permit Rule (Chapter 68E-1, F.A.C. The FDEP and the FWC dually review permits for coastal construction under the Beaches and Coastal Systems Rule (Chapter 62B, F.A.C.) that affect marine turtles. The FWC issues permits for activities involving marine turtles in Florida under authority granted to the state through a Cooperative Agreement with the U.S. Fish and Wildlife Service (USFWS) under Section 6 of the Endangered Species Act (ESA). All activities relating to marine turtles must be authorized under subsection 379.2431(1), Florida Statutes.

No activities triggering a State or Federal permit for any species of sea turtle as a result of the use of HVKBP by the Event Organizer is anticipated to occur, nor are there any plans for coastal construction under the Beaches and Coastal Systems Rule that would affect marine turtles and their habitat, including their nests and/or hatchlings and/or parts thereof.

1.5.2.4. Florida Manatee Sanctuary Act

Florida manatees were first protected through Florida State Law in 1893. Manatees are protected by the Florida Manatee Sanctuary Act (§379.2431(2), Florida Statutes). The Florida Manatee Sanctuary Act establishes restrictions to protect manatees from harmful collisions with motorboats and from harassment; to protect manatee habitat, such as seagrass beds, from destruction by boats or other human activity; and to provide limited safe havens where manatees can rest, feed, reproduce, give birth or nurse undisturbed by human activity. Regulations on motorboat speed and operation occur in areas where manatees are frequently sighted and the best available scientific information, as well as other available, relevant, and reliable information supports the conclusion that manatees inhabit such areas on a regular or periodic basis.

No manatee sanctuaries, as defined in this Act, are present in the immediate vicinity of Virginia Key.

1.5.2.5. State Wetland and Waterbody Permitting

The South Florida Water Management District (SFWMD) oversees State regulatory programs that assist in the management and protection of regional water resources (SFWMD 2018). An Environmental Resource Permit (ERP) is required for development or construction activities to prevent flooding, protect the water quality of Florida's lakes and streams from storm water pollution, and protect wetlands and other surface waters. The SFWMD regulates residential and commercial developments, roadway construction and agriculture; while the FDEP oversees power plants, ports, wastewater treatment plants and single-family home projects. This type of permit is needed for:

- Dredging and filling in wetlands or surface waters
- Constructing flood protection facilities
- Providing storm water containment and treatment
- Site grading
- Building dams or reservoirs
- Other activities affecting state waters

No wetland habitats will be impacted by the Event and no alterations to the natural habitats or communities that occur onsite are intended. Permit applications for the extended use of the existing marginal dock have been submitted to the DERM, FDEP, and U.S. Army Corps of Engineers (USACE).

1.5.3. Federal

1.5.3.1. Endangered Species Act

The Endangered Species Act (ESA) of 1973, as amended, (16 United States Code [USC] A-1535-1543, P.L. 93-205) protects federally listed threatened and endangered (T&E) species. The ESA states that T&E plant and animal species are of aesthetic, ecological, educational, historic, and scientific value to the United States and protection of these species and their habitats is required. The ESA protects fish, wildlife, plants, and invertebrates that are federally listed as T&E. A federally listed endangered species is one that is in danger of extinction throughout all or a significant portion of its range. A federally listed threatened species is likely to become endangered in the foreseeable future throughout all or a significant portion of its range. Protection is also afforded under the ESA to "Critical Habitat", which the USFWS defines as specific areas both within and outside the geographic area occupied by a species on which are found those physical and biological features essential to its conservation.

Section 9 of the ESA and Federal regulation pursuant to Section 4(d) of the Act prohibit the take of endangered and threatened species, respectively, without special exemption. Take is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture or collect, or to attempt to engage in any such conduct. Harm is further defined by the USFWS to include significant habitat modification or degradation that results in death or injury to listed species by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering. Harass is defined by the USFWS as intentional or negligent actions that create the likelihood of injury to listed species by annoying them to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding, or sheltering. Incidental take is defined as take that is incidental to, and not the purpose of, the carrying out of an otherwise lawful activity.

Pursuant to Section 11(a) and (b) of the Act, any person who knowingly violates this Section 9 of the Act or any permit, certificate, or regulation related to Section 9, may be subject to civil penalties of up to $25,000 for each violation or criminal penalties up to $50,000 and/or imprisonment of up to one year.

To be in compliance with Section 9, individuals and State and local agencies proposing an action that is expected to result in the take of federally listed species are encouraged to apply for an Incidental Take Permit (ITP) under Section 10(a)(1)(B) of the Act or to undergo formal consultation with the USFWS

under Section 7 of the Act if another federal agency (the Action Agency) authorizes the activity. Such permits are issued by the USFWS when take is not the intention of and is incidental to otherwise legal activities. An application for an ITP must be accompanied by a habitat conservation plan (HCP). The regulatory standard under Section 10(a)(1)(B) of the Act is that the effects of authorized incidental take must be minimized and mitigated to the maximum extent practicable. Under Section 10(a)(1)(B) of the Act, a proposed project also must not appreciably reduce the likelihood of the survival and recovery of the species in the wild, and adequate funding for a plan to minimize and mitigate impacts must be ensured.

Section 7 of the Act requires Federal agencies to ensure that their actions, including issuing permits, do not jeopardize the continued existence of listed species or destroy or adversely modify listed species' Critical Habitat. "Jeopardize the continued existence of..." pursuant to 50 CFR 402.2, means to engage in an action that reasonably would be expected, directly or indirectly, to reduce appreciably the likelihood of both the survival and recovery of a listed species in the wild by reducing the reproduction, numbers, or distribution of that species. Thus, when a federal permit is required the Action Agency will consult with the Services to ensure that the permitted action does not result in such impacts. Issuance of an ITP under Section 10(a)(1)(B) of the Act by the USFWS is a Federal action subject to Section 7 of the Act. As a Federal agency issuing a discretionary permit, the USFWS is required to consult with itself (i.e., conduct an internal consultation). Delivery of the HCP and a Section 10(a)(1)(B) permit application initiates the Section 7 consultation process within the USFWS.

The requirements of Section 7 and Section 10 substantially overlap. Elements unique to Section 7 include analyses of impacts on designated Critical Habitat, analyses of impacts on listed plant species, if any, and analyses of indirect and cumulative impacts on listed species. Cumulative effects are effects of future State, tribal, local or private actions that are reasonably certain to occur in the action area, pursuant to Section 7(a)(2) of the Act, above the existing baseline. The action area is defined by the influence of direct and indirect impacts of covered activities. The action area may or may not be solely contained within the HCP boundary. The conclusions of the Service and incidental take statement are set forth in a Biological Opinion, which will have conditions that are implemented in the ITP.

As discussed in detail in Section 3.5 below, several species listed as endangered or threatened under the ESA are either known or may occur on or in the immediate vicinity of Virginia Key. This section also discusses in detail actions proposed by the Event Organizer to avoid or minimize the potential for take of any ESA-listed species to the extent that authorization under Sections 7 or 10 of the ESA is not reasonably required.

1.5.3.2. National Environmental Policy Act

The National Environmental Policy Act (NEPA) requires that federal agencies analyze the environmental impacts of their actions and includes public participation in the planning and implementation of their actions. The process begins when a federal agency develops a proposal to take a major federal action. These actions are defined at 40 CFR 1508.18. The environmental review under NEPA can involve three different levels of analysis (EPA 2018).

1.5.3.2.1. Categorical Exclusion

A federal action may be "categorically excluded" (CATEX) from a detailed environmental analysis if the federal action does not, "individually or cumulatively have a significant effect on the human environment" (40 CFR 1508.4). The reason for the exclusion is generally detailed in NEPA procedures adopted by each federal agency.

1.5.3.2.2. Environmental Assessment /Finding of No Significant Impact

A federal agency can determine that a CATEX does not apply to a proposed action. The federal agency may then prepare an Environmental Assessment (EA). The EA determines whether or not a federal action has the potential to cause "significant" environmental effects. The Council on Environmental Quality (CEQ) has promulgated NEPA regulations to determine when an EA is sufficient or an EIS must be prepared. In turn, each federal agency has adopted its own NEPA procedures for the preparation of EAs. Generally, the EA includes a brief discussion of:

- The need for the proposal

- Alternatives (when there is an unresolved conflict concerning alternative uses of available resources)
- The environmental impacts of the proposed action and alternatives
- A listing of agencies and persons consulted.

Based on the EA, the following actions can occur:

- If the agency determines that the action will not have significant environmental impacts, the agency will issue a Finding of No Significant Impact (FONSI). A FONSI is a document that presents the reasons why the agency has concluded that there are no significant environmental impacts projected to occur upon implementation of the action.
- If the EA determines that the environmental impacts of a proposed Federal action will be significant, an Environmental Impact Statement is prepared.

1.5.3.2.3. Environmental Impact Statement

Federal agencies prepare an Environmental Impact Statement (EIS) if a proposed major federal action is determined to significantly affect the quality of the human environment. The regulatory requirements for an EIS are more detailed and rigorous than the requirements for an EA. Below is summary of the EIS Process:

- An agency publishes a Notice of Intent in the Federal Register. The Notice of Intent informs the public of the upcoming environmental analysis and describes how the public can become involved in the EIS preparation.
- This Notice of Intent starts the scoping process, which is the period in which the federal agency and the public collaborate to define the range of issues and possible alternatives to be addressed in the EIS.
- A draft EIS is published for public review and comment for a minimum of 45 days.
- Upon close of the comment period, agencies consider all substantive comments and, if necessary, conduct further analyses.
- A final EIS is then published, which provides responses to substantive comments.

Publication of the final EIS begins the minimum 30-day "wait period," in which certain agencies are required to wait 30 days before making a final decision on a proposed action. For example, EPA publishes a Notice of Availability in the Federal Register, announcing the availability of both draft and final EISs to the public. Find EISs with open comments or wait periods. The EIS process ends with the issuance of the Record of Decision (ROD). The ROD explains the agency's decision, describes the alternatives the agency considered, and discusses the agency's plans for mitigation and monitoring, if necessary.

The NEPA process helps federal agencies make informed decisions with respect to the environmental consequences of their actions and ensures that measures to protect, restore and enhance the environment are included, as necessary, as a component of their actions.

As has been the case for all other events staged on Virginia Key, the Event Organizer will not require a federal permit triggering NEPA regulations.

1.5.3.3. National Historic Preservation Act

All Federal agencies are required to examine the cultural impacts of their actions in compliance with Section 106 of the National Historic Preservation Act (NHPA). This may require consultation with the State Historic Preservation Office (SHPO) and appropriate American Indian tribes to confirm that a federal action does not result in the destruction of National Historical Resources. The steps in the process to comply with Section 106, outlined in the implementing regulations at Title 36 CFR Part 800, include consultations, identification of historic properties, assessment of effects, and resolution of adverse effects.

A summary of findings based on a desktop review are presented in Section 3.9. Use of the site by previous events held at the HVKBP and Miami Marine Stadium have not required Section 106 consultation. In addition, the Event Organizer will restrict public access to many of the historic structures that have been identified onsite.

1.5.3.4. Clean Water Act

The Clean Water Act (CWA) (33 U.S.C. §1251 et seq.) (1972) establishes the basic structure for regulating discharges of pollutants into the waters of the United States and regulating quality standards for surface waters. Under the CWA, the Environmental Protection Agency (EPA) has implemented pollution control programs such as setting wastewater standards for industry. EPA has also developed national water quality criteria recommendations for pollutants in surface waters. The CWA made it unlawful to discharge any pollutant from a point source into navigable waters, unless a permit was obtained. EPA's National Pollutant Discharge Elimination System (NPDES) permit program controls discharges. Point sources are discrete conveyances such as pipes or man-made ditches. Individual homes that are connected to a municipal system, use a septic system, or do not have a surface discharge, do not need an NPDES permit. However, industrial, municipal, and other facilities must obtain permits if their discharges go directly to surface waters.

The USACE regulates work and structures that are located in, under or over navigable waters of the United States under Section 10 of the Rivers and Harbors Act of 1899, the discharge of dredged or fill material into waters of the United States under Section 404 of the CWA, and the transportation of dredged material for the purpose of disposal in the ocean (regulated by the Corps under Section 103 of the Marine Protection, Research and Sanctuaries Act). "Waters of the United States" are navigable waters, tributaries to navigable waters, wetlands adjacent to those waters, and/or isolated wetlands that have a demonstrated interstate commerce connection.

There are three major types of CWA permits that the USACE can issue. Individual permits are generally more complex in nature and must involve notification of the public and commenting agencies. Nationwide Permits and Letters of Permission are simpler permits issued through an abbreviated processing procedure without an individual public notice, but include coordination with federal and state fish and wildlife agencies and a public interest evaluation.

As previously stated, the Event Organizer has submitted the required Nationwide permit application for the extended use and deconstruction of the existing marginal dock to the USACE.

1.5.3.5. Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703–711) is the federal statute that protects nearly all native birds, their eggs, and nests. Specifically, the statute makes it unlawful "to take, possess, import, export, transport, sell, purchase, barter, or offer for sale, purchase, or barter, any migratory bird, or the parts, nests, or eggs of such a bird except under the terms of a valid permit issued pursuant to federal regulations." As a result of a recent opinion from the Department of Interior Solicitor's Office (M-Opinion) and associated policy documents (Memorandum "The Migratory Bird Treaty Act Does Not Prohibit Incidental Take" from Principal Deputy Solicitor DOI to Secretary DOI; December 22, 2017) (DOI 2018), the USFWS concluded that the take of migratory birds resulting from an otherwise lawful activity (i.e., incidental take) is not prohibited when the underlying purpose of that activity is not to take birds. MBTA's prohibitions on take apply when the purpose of an action is to intentionally take migratory birds, their eggs, or their nests.

No take of migratory birds is anticipated from the Event and no MBTA permit will be required for this Event.

1.5.3.6. Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668) provides for the protection of the bald eagle and golden eagle "by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit. "Take" includes pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb."

As discussed in Section 3.5.2 below, bald eagles do not currently nest on Virginia Key and no BGEPA permit is required.

1.5.3.7. Marine Mammal Protection Act

Federally threatened and endangered marine mammal species are protected by the ESA; additionally, all marine mammals (both ESA-listed and unlisted species) are protected under the Marine Mammal Protection Act of 1972, as amended (16 U.S.C. § 1361 et seq.). The Marine Mammal Protection Act (MMPA) was enacted on October 21, 1972. The MMPA established a national policy to prevent marine mammal species and population stocks from declining beyond the point where they ceased to be significant functioning elements of the ecosystems of which they are a part.

Three federal entities share responsibility for implementing the MMPA;

- NOAA Fisheries—responsible for the protection of whales, dolphins, porpoises, seals, and sea lions.
- U.S. Fish and Wildlife Service—responsible for the protection of walrus, manatees, sea otters, and polar bears.
- Marine Mammal Commission—provides independent, science-based oversight of domestic and international policies and actions of federal agencies addressing human impacts on marine mammals and their ecosystems.

The MMPA protects all marine mammals, including cetaceans (whales, dolphins, and porpoises), pinnipeds (seals and sea lions), sirenians (manatees and dugongs), sea otters, and polar bears within the waters of the United States. The MMPA makes it illegal to "take" marine mammals without a permit. This means people may not harass, feed, hunt, capture, collect, or kill any marine mammal or part of a marine mammal. The Act also formalized the marine mammal health and stranding response program to improve the response of stranding and unusual mortality events.

No take of manatees or other marine mammals is anticipated and appropriate mitigation measures to address the potential impacts of boating to manatees are discussed in Section 3.5.10.1 below.

2. Description of the Proposed Action

2.1. Ultra Music Festival

Ultra Music Festival is an award winning, 18 and over, internationally renowned music event, based in Miami, Florida, and established in 1999. Over the course of twenty years, the Ultra Music Festival Event has occurred at three different locations within the Greater Miami area (Miami Beach, Bayfront Park, Bicentennial Park) and is now planned for Virginia Key. On November 15, 2018, the City of Miami Commission approved a resolution to enter into a Revocable License Agreement with the Event Organizer, to produce the annual Ultra Music Festival at Virginia Key between two locations: Miami Marine Stadium and HVKBP. Tickets for this event are sold as a three-day pass only with the above referenced agreement capping attendance during the event to 60,000 guests per day for a total maximum attendance of 180,000 attendees over the three-day weekend.

2.1.1. 2019 Event Schedule

The Event has moved to Virginia Key and will be produced as a three-day event the weekend of March 29, 30, and 31, 2019. Pursuant to Section 2.6 of the Revocable License Agreement with the City of Miami and the Event Organizer, the hours of operation for the Event will be 2:00 p.m. to 2:00 a.m. on Friday, March 29th, Saturday, March 30th and Sunday, March 31st.

2.1.2. Miami Marine Stadium

The Event will use portions of the Miami Marine Stadium area for a total of 35 days from the commencement of construction on March 11, 2019 to the completion of deconstruction on April 14, 2019.

The main stage production will be constructed at the site premises of the Miami Marine Stadium located at 3501, 3801, and 3861 Rickenbacker Causeway, Miami, Florida 33149. The site premises for the Event does not include the use of the actual stadium known as the Ralph Middleton Munroe Miami Marine Stadium as outlined in Section 5.4 of the Revocable License Agreement. The stadium is a historically significant stadium that was designed by Hilario Candela and built in 1963 but is currently closed and in the process of being restored.

The site borders Rickenbacker Causeway to the south, the City of Miami Marina to the west, Biscayne Bay private waterway basin to the north, and the MAST Academy to the east.

The security of the site will be managed and controlled by construction of fencing and event-based structures at regulated access points. The Event entrance and exit will be stationed at the western side of the property just off the Rickenbacker Causeway. There will be a 3-point security check and entry consisting of: 1) identification check-point, 2) bag and pat down check-point, and 3) ticketing scan. A total of four stage structures will be constructed on this property. Guests will enter the site in an easterly direction between two structured stage areas named 1) WW and 2) Live. A third stage named the Main stage will be an open-air structure and gathering site at the eastern most end of the property with a VIP access area adjacent to the Main stage and waterway basin to the north. A fourth stage named UMF Radio will be positioned in the center of the property adjacent to the swale abutting Rickenbacker Causeway. A temporary controlled ingress and egress access area will be constructed for pedestrian exit and entrance to the HVKBP area and will be positioned between the Live stage and the UMF Radio stage. An existing marginal dock along the seawall of the waterway basin will afford strictly controlled access monitored by the City of Miami Marine Patrol for boaters that have authorized VIP access, VIP vessels, and one mega yacht for access by artists (a maximum of 49 total boats). The marginal dock will accommodate water taxi shuttles for drop-offs and pick-ups of regular Event patrons.

2.1.3. Historic Virginia Key Beach Park

The remaining three stages will be constructed on the HVKBP, 4020 Virginia Beach Drive, Miami, Florida 33149. The HVKBP is both a historic and culturally significant area that has been designated as a local landmark and is found recorded in the National Registry of Historic Places (NRHP). The HVKBP is

managed and operated by the Virginia Key Beach Park Trust and is a limited agency and instrumentality of the City of Miami.

This site borders Rickenbacker Causeway and the University of Miami - RSMAS to the southwest, Arthur Lamb Jr Road and the Miami-Dade CDWWTP to the north east with Key Biscayne to the south.

Event patrons shall be required to first pass through the aforementioned three-point security check and then traverse over a mile distance within a tightly controlled, gated and fenced path that runs from the Miami Marine Stadium parallel to Rickenbacker Causeway south and veering east along Virginia Beach Drive to its terminus at a police check/guard house. Entry to the remaining Ultra stages requires an additional wrist band check and scan at this check-point.

The first stage, Resistance Reflector, is scheduled to be located slightly to the north east of the guard house, while the second stage named the Arrival stage is located to the southwest of the guard house. Both stages are located within existing open grassy field areas. Access to the third and final stage, Resistance Carl Cox, will follow an existing walking path that will be fenced along both sides to ensure Event goers remain within designated areas and to protect surrounding sensitive habitats. The final stage, Resistance Carl Cox, is located approximately a half mile north east of the guard house area. The security of the site will be managed and controlled by construction of fencing and event-based structures for regulated access points. All access to the coastal habitats, identified sensitive habitats, and items identified in Exhibits D-1, D-2 and D-3 of the Revocable License Agreement will be prohibited by event fencing. Event fencing will be used to create a physical barrier that completely surrounds all of the production's stages in HVKBP prohibiting all access to the coast for event attendees and preventing all access from the coast to the Event.

2.1.4. Transportation and Pedestrian Access

Pursuant to Section 4.15 of the Revocable License Agreement, a Maintenance of Traffic (MOT) Plan has been developed and submitted to the City of Miami. The Event Organizer submitted a preliminary MOT plan to the City of Miami on December 20, 2018 and an updated MOT plan to the City of Miami on January 9, 2019. The Event Organizer is working with RoadSafe Traffic engineers, as well as coordinating with the Miami-Dade Police Department, City of Miami Police Department, and Miami-Dade DOT and Public Works on the development of the MOT plan.

As part of the Event, the Event Organizer is not providing any parking for Event patrons on the Rickenbacker Causeway, with limited exceptions for handicapped Event patrons, VIP Event patrons, staff, and artists. To facilitate Event patrons' transportation to the Event, the Event Organizer will be providing free bus transportation, which will be picking up Event patrons from three different bus locations:

(i) American Airlines Arena;

(ii) Vizcaya Metrorail Station; and

(iii) Resorts World International (old Miami Herald building).

The Event Organizer is in the process of securing a fourth location on Miami Beach. In addition, the Event Organizer will be providing water taxi service from a location in and/or near downtown Miami, as well as coordinating ride share and private vehicle drop-off locations on the Rickenbacker Causeway. The Event Organizer's MOT plan will be an evolving plan, which will be subject to modification based on stakeholders' concerns as well as Event day modifications.

Additionally, the Event Organizer has partnered with Uber, Hello Florida and the Miami-Dade County transit for transit and ride sharing options along with Island Queen Cruises and Tours to provide water taxi services with pick up locations at either Watson Island or Bayside.

In order to ensure the safety of Event patrons and others and to limit traffic congestion, a number of existing traffic features will have to be either relocated or temporarily closed, as detailed in the MOT Plan (Figure 2.1.4). The left turn lane located on Rickenbacker Causeway turning into the Miami Marine Stadium Event location will be relocated to the intersection of Arthur Lamb Road and Rickenbacker Causeway. Additional police units will be located at this intersection to enforce traffic and safety regulations. The Event Organizer will create bus only lanes for loading and unloading of Event patrons located along the north east

side of Rickenbacker Causeway and will install pedestrian event fencing that will run from the main entrance to the guard house located on Virginia Beach Drive. Additional police units will be located along Rickenbacker Causeway and at the entrance to the MAST Academy.

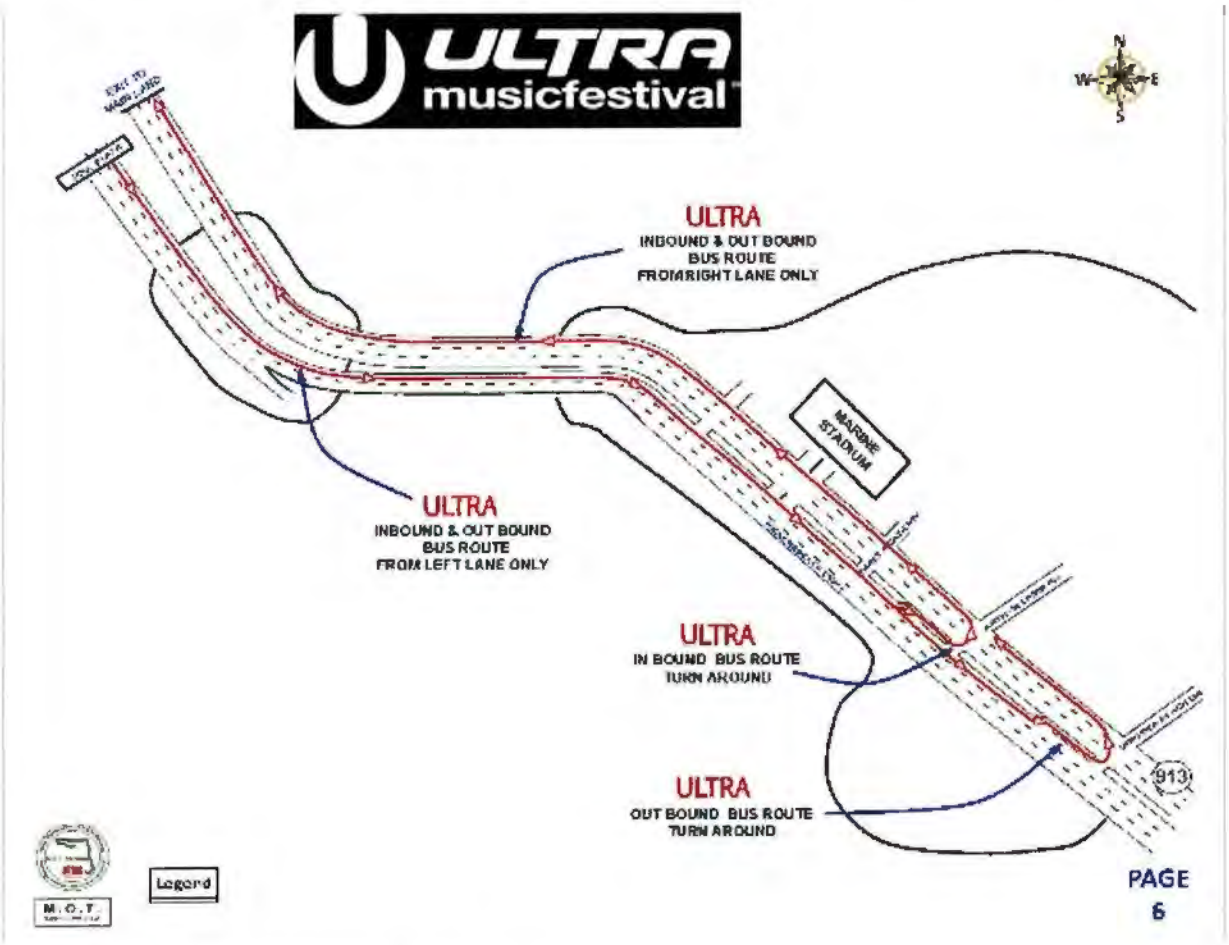


Figure 2.1.4 MOT – Proposed Lane Closures

2.1.5. Food and Alcoholic Beverage

Food and beverage services will be available at both Miami Marine Stadium and HVKBP. The Event Organizer will make available at both Miami Marine Stadium and HVKBP garbage collection and recycling. The use of plastic straws and polystyrene products will be strictly forbidden by the Event Organizer.

Alcoholic beverages are to be strictly controlled using alcohol wrist-banding staff to ensure consumers of alcohol are of the appropriate legal drinking age. Additional restrictions related to alcoholic beverage distribution are included within Sections 4.8 of the Revocable License Agreement.

2.1.6. Construction and Deconstruction

Section 2.14 of the Revocable License Agreement acknowledges the use of the designated properties for a period of thirty-five days to consist of event setup, preparations, and construction, the three-day Event, and event deconstruction. Event setup and preparations shall begin no earlier than Monday, March 11, 2019 at 7:00 a.m., eighteen days prior to each Event. Deconstruction shall be complete no later than fourteen days after the conclusion of each event at 11:59 p.m. on Sunday, April 14, 2019. Construction activities will limit environmental impacts by avoiding sensitive habitats with construction activities occurring away from sensitive habitats. Onsite best management practices will continue to be employed to limit

erosion or storm water runoff during construction activities. Where possible construction activities will work from existing parking/production grounds to the coastal boundaries. For example, fencing along coastal habitats will be placed from the inland not coastal side to avoid potential habitat or species impacts.

2.1.7. General Conservation Measures

The Event Organizer is committed to ensuring that the HVKBP is left in accordance with baseline conditions prior to the Event. The Event Organizer has implemented the following conservation measures toward achieving that goal:

- Environmentally sensitive areas will be completely restricted from attendees.
- No beach access.
- No access to HVKBP historic buildings elements, and sensitive areas.
- Access to coastal dune areas restricted.
- No access to mangrove wetlands.
- No access to the natural pond and surrounding protected vegetation.
- No access to USACE 1135 restoration area.
- Banning the use of polystyrene, plastic straws, consumer plastic bags (HVKBP only), balloons, confetti, and streamers.
- Banning most single-use plastics including cups, food packaging, and cutlery.
- All beverages will be provided in aluminum cans or paper cups.
- Expanded water refill station program to reduce plastic water bottle use.
- Adopting a "Leave no Trace" policy for event patrons and training all staff and cleaning crews accordingly.
- Creating a plan to eliminate or minimize liquid waste or food waste spillage or run-off.

2.1.7.1. Fencing

Fencing is intended to protect Event patrons and existing sensitive habitats outlined in the Revocable License Agreement. A combination of fencing structure types (e.g., concrete race track fencing, steel barrier fencing, French barricades, or chain link fence) will create a safe pedestrian walkway, protect Event patrons near the entrance to the Miami Marine Stadium and HVKBP, prohibit access to sensitive habitats, and be used in areas requiring additional security. See Figures 2.1.7.1-1 through 2.1.7.1-4 for examples of the proposed fencing types. Please refer to the proposed Site Fencing Plan provided (Figure 2.1.7.1-5).

Figure 2.1.7.1-1 8-Foot Panel Fencing
Photo Source: https://www.rentnational.com/temporary-fence/panel-fencing

Figure 2.1.7.1-2 Event Fencing
Photo Source: http://www.johnnyonthespot.com/products-services/temporary-fencing/

Figure 2.1.7.1-3 Race Track Fencing
Photo Source: https://www.kingcats-fence.com/sectors/sports-and-leisure/racing-tracks/

Figure 2.1.7.1-4 Bridge Feet Metal Barricade
Photo Source: https://www.crowdcontrolstore.com/eq-manufacturing-heavy-duty-steel-barricade-8-ft

Figure 2.1.7.1-5 Site Fencing Plan

2.1.7.2. *Event Structures and Pedestrian Rally Points to Avoid Disturbance/Designated Use Areas*

Structures and enclosures are proposed at select stages at both the Miami Marine Stadium and HVKBP that will act as attendee rally points to prevent disturbance and are intended to ensure attendees remain within designated areas.

The Worldwide Stage and the Live Stage which will be located at the Miami Marine Stadium and two of the three stages located at the HVKBP will be covered stages as shown in Figures 2.1.7.2-1 and 2.1.7.2-2. The design of these structures will further reduce noise and light effects to the surrounding biological environment and residential communities.

Figure 2.1.7.2-1 Ultra Stage Structure

Figure 2.1.7.2-2 Ultra Stage Structure

2.1.7.3. Control of Access

The Event Organizer will tightly control access as stipulated in Section 4.2 of the Revocable License Agreement with attendees receiving a wrist band for entry to the Event. As previously discussed in Section 2.1.7.1, fencing intended to control access of attendees and to prevent unauthorized entry.

2.1.7.4. Signage

All advertising for the Event must be in accordance with Section 11 of the Revocable License Agreement and be approved by City Manager prior to installation. All signage must also comply with sign regulations of the City of Miami Code and Zoning Ordinance and the Miami-Dade County Sign Code.

2.1.7.5. Security/Authorized Personnel

The Event Organizer is working with public safety stakeholders such as the City of Miami Police Department, City of Miami Fire Department, and Miami-Dade Police Department on the development of an incident action plan for the Event. In addition, multiple private security companies will be integrated into the Event's security operation and incident action plan. Responsible parties include the City of Miami Police Department for law enforcement at the Event site, the Miami-Dade Police Department for law enforcement of traffic on the Rickenbacker Causeway, and the City of Miami Fire Department for providing fire safety and emergency medical care. Coordination with the Federal Bureau of Investigation (FBI), U.S. Department of Homeland Security, Southeast Florida Fusion Center, U.S. Coast Guard, Federal Aviation Administration, as well as with local first responders has been ongoing and will continue throughout the Event.

The Event Organizer is committed to forging and maintaining strong local partnerships with the above-mentioned stakeholders and the Village of Key Biscayne Police Department to ensure the safety of both Event patrons and the overall community. The Event Organizer is committed to providing a safe event for participants and will provide all necessary perimeter Event security as required by Section 13 of the Revocable License Agreement.

Additionally, the Event Organizer requires Event patrons to obtain a specialized wrist band as a ticket for entry, be 18 or over, have a 21 or over wrist band to purchase alcohol, and prohibits bags other than clear bags and hydration packs, with a maximum size of 13"x17", to prevent prohibited items into the Event. Entry into the Event utilizes a 3-point security check and entry consisting of: 1) 18 and over identification check-point, 2) bag and pat down check-point, and 3) ticketing scan.

2.1.7.6. Clean-up

Pursuant to Section 5 of the Revocable License Agreement, the Event Organizer is responsible for all required clean-up following the Event for public use immediately after the use period with all restoration completed no later than June 1, 2019.

2.1.7.7. Memorandum of Understanding with Local Environmental Organizations

The Event Organizer is committed to environmental stewardship and promoting sustainable practices within our events and has consulted local community organizations for input to that end. The Event Organizer has entered in to a Memorandum of Understanding with Volunteer Cleanup, Surfrider Foundation, and Debris Free Oceans in which it undertakes the following initiatives:

- No beach access to Event patrons.
- No polystyrene products or plastic straws.
- No balloons.
- Education and awareness programs available at the Event, including waste bins for recycling, landfill, and compost.
- Completion of site restoration obligations prior to the beginning of sea turtle nesting season.
- Adopting a "leave no trace" policy for Event patrons.
- Developing a mass transit plan to mitigate transportation impacts.

- Partnering with other organizations to facilitate waste reduction and cleanup efforts.
- Developing a waste reduction plan with the long-term goal of eliminating single-use plastics and expanding the existing water refill program.
- Developing a plan to minimize or eliminate liquid waste, food spillage or runoff.
- Developing a plan to identify environmentally friendly solutions for pyrotechnics.
- Forming an impartial Environmental Advisory Board that will be comprised of environmental consultants, environmentalists, and environmental groups to minimize and mitigate the environmental impacts of the Event.
- Requiring each vendor to the same pledge or to provide a comparable program.

Please refer to Section 4.2 Sustainability Management for a more detailed look at the Event Organizer's goals and sustainability planning.

3. Affected Environment Analysis

3.1. Ecological Resources

3.2. Ecological Characterization of Virginia Key

3.2.1. Location and Development

Virginia Key is a ±1000-acre barrier island in Miami, Florida, in Biscayne Bay, south of Brickell Avenue and north of Key Biscayne. The island is mainly occupied by the HVKBP, Miami Seaquarium, Miami-Dade's CDWWTP, and the RSAMS. Other facilities include the former Miami Marine Stadium, the National Marine Fisheries Service Southeast Fisheries Science Center (NMFS-SEFSC), an office of the U.S. NOAA, a Federal Aviation Administration (FAA) facility, and a marina. It is a highly developed island with a variety of public activities currently being conducted on a year-round basis. The island is also undergoing active vegetative and beach restoration funded by numerous County, State, Federal, and Private organizations.

3.2.2. Geomorphology

Historically, Virginia Key was the southern end of a barrier island that extended from the New River inlet in Fort Lauderdale to just north of Key Biscayne. At the beginning of the 19th century, there was no inlet through the barrier island between the New River Inlet and Bear Cut, at the northern end of Key Biscayne. Hurricanes in 1835 and 1838 opened a new inlet, Narrows Cut (now known as Norris Cut), separating Virginia Key from what is now Fisher Island at the south end of Miami Beach. This differentiates Virginia Key from the islands occurring south of it in Biscayne Bay that were not formed from a coastal barrier island complex, but from dead Pleistocene coral reefs (Tabb 1963). This distinction is both topographically and ecologically important because it determines the type of fauna and flora that exist on Virginia Key, its nearshore waters, and the adjacent mainland shoreline.

3.2.3. Ecology

Virginia Key contains four South Florida ecosystem types: coastal/hardwood hammocks, beach/dune, wetlands, and submerged aquatic resources (City of Miami 2010). Virginia Key provides potential habitat for threatened and endangered plant and animal species as discussed in Section 3.5, the Affected Environment Analysis.

3.2.4. Coastal/Hardwood Hammock

The upland coastal ecosystem is represented on Virginia Key by tropical coastal hardwood hammocks. Currently, there are ±18 acres of coastal hammocks on Virginia Key (The Nature Conservancy 2014) that are characterized by evergreen, broad-leaved forests composed predominately of trees common to the Bahamas and Greater Antilles. The canopy is typically 29–39 feet (9–12 meters) tall with gumbo limbo, pigeon plum, wild tamarind, willow bustic, Jamaica dogwood, mastic, and strangler fig as common trees. The subcanopy contains white stopper, Spanish stopper, crabwood, torchwood, wild coffee, and marlberry. Hammocks are typically abundant with epiphytic plants, including orchids, bromeliads, and ferns. A mature hammock has a relatively open understory. As the elevation slopes toward sea level, halophytic (salt-tolerant) plants such as buttonwoods become more dominant. The hardwood hammocks on Virginia Key serve a dual purpose, as they are used by park staff and the public for environmental education to impart an understanding of the coastal/island terrestrial ecology of South Florida, and they provide habitat for native wildlife, especially, resident and migrating birds. The park managers have installed a trail and interpretative signage system to assist visitors during their visits to the park to view wildlife and to understand the park's flora and fauna. As in most terrestrial environments, invasive plant species are always a threat to the native plant communities. The hardwood hammocks found on Virginia Key are no exception to this rule. Before and after Hurricane Andrew, three of the most prevalent South Florida vegetative invasive species -- Brazilian Pepper (*Schinus terebinthifolius*), leatherleaf (*Colubrina asiatica*),

and Australian pine (*Casuarina equisetifolia*) -- were found in the hammock and eliminated suitable habitat for butterflies and songbirds (Wright 2007).

The coastal hardwood hammock community of Virginia Key is home to the state endangered Biscayne prickly-ash *(Zanthoxylum coriaceum)*. It is currently being propagated offsite and being monitored within the hammock community (Wright 2007).

3.2.5. Beach/Dune

Virginia Key contains ±16 acres of beach and dune communities predominantly made of native sand and "Canaveral sand" (City of Miami 2010). The beaches of Virginia Key provide areas for recreational resources. They also serve as ecological habitat for shorebirds and have historically provided loggerhead sea turtle (*Caretta caretta*) nesting habitat. However, behind the low native dune system invasive non-native plants, such as Australian pine, have colonized landward swaths of beach where sea turtles historically nested, thereby limiting the width of beach available for nesting females.

A newly documented population of the plant, beach star (*Cyperus pedunculatus*), was discovered in the beach/dune community on Virginia Key and has been undergoing reintroduction along with beach clustervine (*Jacquemontia reclinata*) since 2002 (Wright 2007).

3.2.6. Wetlands

Wetlands are an important component of the marine ecosystem along the coast of the mainland and the fringes of Virginia Key. Wetlands provide natural filtration of waters as they enter the park, provide habitat for a variety of species, and form the base of the aquatic food chain for South Florida. Historically, the mainland coast of southern Florida was predominantly wetlands. Changes in land use and modifications to natural drainage patterns have dramatically reduced the amount of wetlands in the region, and today the three National Park System units (Biscayne, Big Cypress, and Everglades) contain some of the last wetland areas in South Florida (National Park Service 2015).

The shoreline surrounding the Bill Sadowski Critical Wildlife Area and the wetlands adjacent to it and the County landfill and sewage treatment plant contain more than 300 acres of predominately mangrove forests and are the dominant vegetative community on Virginia Key (The Nature Conservancy 2014). This coastal mangrove community provides important nursery areas for many marine species and is a combination of buttonwood and red, white, and black mangroves. Red mangrove roots offer vital protection for larval and immature stages of a host of species, and to the shoreline from waves and boat wakes. The mangroves also provide roosting and nesting sites for birds such as herons, egrets, and songbirds. The mangroves also provide habitat for the endangered American crocodile. Virginia Key has an isolated freshwater wetland located behind the Dade Marine Institute, Gladstone Campus. This wetland area is extremely important as it represents the only open source of freshwater on the island to birds and other species.

3.2.7. Submerged Aquatic Communities

Off shore and south of Virginia Key there exists a mosaic of submerged aquatic communities, including seagrasses, hardbottom, barebottom, and coral reef. The combination of these communities makes the area ecologically rich and biologically diverse. Seagrass beds provide shelter from predators, breeding and nursery areas for many fish, and forage for other species such as the manatee. The beds also absorb nutrients from coastal and estuarine systems, stabilize substrates, and minimize the effects of wave action (National Park Service 2015).

Seagrass species most likely to be encountered in the shallow water areas off the beaches of Virginia Key are: turtle grass (*Thalassia tesudinum*), manatee grass (*Syringodium* spp.), and shoal grass (*Halodule* spp.). Growth and distribution of these seagrasses are controlled by light attenuation, photoperiod, temperature, salinity, and sediment type. These communities can be found in monocultures, mixed grass species, or in association with several species of algae. These habitat types comprise the major benthic plant communities in the bay and are productive (Thorhaug 1976). Seagrass are a primary food source for manatees (*Trichechus manatus)*. The roots of these plants stabilize sediments and their leaves create resistance to water currents, promote water clarity, trap suspended sediments, and providing

habitat for a variety of benthic organisms. A number of species of fish, shrimp, crabs, worms, clams, snails, lobster, and echinoderms inhabit these areas (Milano 1983).

Barebottom communities occur closer to shore to Virginia Key in areas where sediment depth, sediment quality, or water quality will not support the growth of seagrasses or corals. Organisms that live in these areas include worms, mollusks, tunicates, nematodes, crabs, shrimp, amphipods, clams, snails, and sea cucumbers (Milano 1983).

Coral communities occur in waters typically 10- to 20-feet in depth east of Virginia Key along the edge of the Florida Current (Milano 1983). The coral communities can generally be broken into two types: the patch reef and the reef tract. Patch reefs typically are living masses of coral rising directly from the bottom. The patch reefs range in size from individual coral heads to masses more than 150 feet across. The coral heads tend to have nearly perpendicular sides and rise to within 2 to 3 feet of the water's surface. The bottom around the reefs is usually flat and covered with seagrass. The reef tract, or outer reef, is generally offshore in deeper waters and consists primarily of dead coral rubble. Live coral lie mostly on the seaward side of the reef adjacent to deeper water and the Florida current.

3.2.8. Ecological Risks and Mitigation

This section outlines the possible risks posed by the venues and the Event patrons and the potential impacts of their activities on the ecology of Virginia Key.

3.2.8.1. Risks to Coastal Hammock Communities

Fire/Wildfire

The coastal hammocks on Virginia Key are composed mostly of broad-leaved evergreen trees and shrubs with an open understory resistant to human and natural fire events. As the Event patrons will be restricted from access to the coastal hammock communities by fencing and this community is naturally resistant to fires, the potential for wildfires is judged to be extremely low. Fireworks will be used during the Event at certain stage areas at the Miami Marine Stadium site in a controlled environment at the stage and will not be used in areas adjacent to coastal hammock communities. Extensive City of Miami law enforcement and fire rescue staff are partners in the Event and will be onsite at all times.

Mitigation of Fire/Wildfire Impacts to Coastal Hammock Communities

City of Miami law enforcement, fire rescue staff and firefighting personnel have been engaged and are partners in the Event and will be onsite at all times. An emergency management plan and procedures has been developed and special security and emergency preparedness is a requirement of the License Agreement pursuant to condition number 13.

Soil Compaction

Event patrons will have limited use of one existing walking trail that traverses between the open field at the south end of the property and connects to the open field on the north side of the HVKBP Visitor's Center. Event patrons will be restricted from using all other trails and the beach at the HVKBP. No new or additional soil compaction in these communities is anticipated.

Mitigation of Soil Compaction Impacts

In accordance with the restrictions and limited use of one walking trail at HVKBP, during and after the Event, a survey of the pathway will be conducted for review of soil compaction, trash, or vandalism and will be restored as necessary to pre-Event baseline conditions.

3.2.8.2. Risks to Beach/Dune Communities

Fire/Wildfire

As the Event patrons will be restricted from access to the beach/dune communities and the habitat is mostly bare sand, the potential for wildfires is judged to be extremely low.

3.2.8.3. Risks to Submerged Aquatic Communities

Aside from the Miami Marine Stadium basin usage for water taxi arrivals and departures and limited docking opportunities, the Event may draw spectators by boat to the inshore waters around Virginia Key during the three-day Event. However, the Event Organizer cannot reasonably control the actions of the general public. The Event Organizer will construct fencing to restrict access to the Event area from the water and beach at both the Miami Marine Stadium and HVKBP, restricting unauthorized access to the Event and deterring attempts to swim or enter the Event site.

Risks to Wetland Communities

As previously discussed, nearly all activity associated with the Event will occur in upland habitats associated with the Miami Marine Stadium and HVKBP. The Event Organizer intends to restrict pedestrian access from sensitive areas including mud flats and wetlands, mangroves, and the Bill Sadowski Critical Wildlife Area using fencing and security personnel during the entire Event. Additionally, the Event Organizer may elect to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided.

3.3. Affected Environment

Based on onsite plans provided by the Event Organizer, the environment of Virginia Key may be potentially affected/impacted by the Event during either the pre-Event construction, Event production, and demobilization. All native habitats on Virginia Key (Coastal Hardwood Hammocks, Beach/Dunes, and Wetlands) are scheduled to be fenced off (see Figure 2.1.7.1-5) to prevent direct access from Event patrons and will be patrolled by security personnel to prevent trespass. Security and firefighting personnel also will ensure that fireworks are properly contained and controlled within designated stage areas. It is possible that submerged aquatic communities could be adversely affected if boaters wander out of a marked channel and into seagrass beds or strike a patch coral. However, the Event Organizer can only control site access to Event patrons and not to visiting boaters who have public access to the adjacent waterways. FWC marine patrol officers will be on duty to regulate such activities of the general public. Finally, pre-Event construction, clean-up, and demobilization activities will be closely supervised and monitored by qualified professionals.

3.4. Summary

Virginia Key is representative of a South Florida tropical coastal ecosystem. It provides habitat for a number of listed species just outside a highly urbanized environment. Virginia Key offers unparalleled habitat for resident and migrating birds. The energy flow through this environment has two main sources of input: (1) tropical hammocks and (2) mangrove wetlands. The terrestrial tropical hammocks provide habitat for a new state endangered plant species. They also have a typical South Florida food web dominated by mixed hardwoods with an understory of small palms and mixed grasses. This ecosystem type offers excellent habitat for migrating songbirds and some resident bird species and small mammals. The mangrove wetlands provide the bulk of the primary productivity to the surrounding marine ecosystem, the Biscayne Bay Estuary, as detritus (Odum 1970). Mangroves provide habitat for resident coastal bird species such as brown pelicans and reddish egrets. The island and its surrounding waters that are dominated by seagrasses and some patch corals provide essential habitat resources provide habitat for recreational and commercially important finfish and shellfish.

3.5. Biological Resources

3.5.1. Affected Environment Threatened and Endangered Species

A tiered approach to identify species of concern that could potentially occur within or near the Event site on Virginia Key was implemented based on the best information available from agency databases, aerial and ground surveys for species, and habitat.

3.5.2. Initial Species of Concern

Complete agency lists of species that are known or believed to occur within Miami-Dade County were developed (Table 3.5). This comprehensive list was compiled from the following sources:

- U.S. Fish and Wildlife Service (USFWS) Environmental Conservation Online System (ECOS) website: https://ecos.fws.gov/ecp/ (accessed November 2018);
- USFWS Information, Planning, and Conservation System (IPaC) website: http://ecos.fws.gov/ipac/ (accessed December 2018);
- USFWS, North Florida Ecological Services Office, North Florida Federally Listed Species website: https://www.fws.gov/northflorida/Species-Accounts/North_Florida_Fed_TE_Species_Info.htm (accessed December 2018);
- USFWS, South Florida Ecological Services Office, South Florida Listed Species website: https://www.fws.gov/verobeach/ (accessed December 2018);
- FWC, Florida's Imperiled Species website: https://myfwc.com/wildlifehabitats/wildlife/ (accessed December 2018); and
- Florida Natural Areas Inventory (FNAI), Searchable Tracking List by County website: http://www.fnai.org/trackinglist.cfm (accessed November 2018).

3.5.3. Data Records

All known records of tracked elements (e.g., federal and/or state rare, threatened, or endangered species, natural communities, and designated waterbodies) from the FNAI within a 1-mile radius of the Event were compiled. Data agreements prohibit distribution of these records, including Event of maps or figures showing the exact location of these features. Also obtained was a Resource List from the USFWS through IPaC, which provided a list of species or other resources known or expected to be in the general area of interest for the Event under the jurisdiction of the agency.

3.5.4. Other Agency Sources

Further referenced were Geographic Information System (GIS) files from federal and state agency sources. Designated Critical Habitat shapefiles were obtained from USFWS Critical Habitat Portal, FWS Critical Habitat for Threatened & Endangered Species website: http://ecos.fws.gov/crithab/ (USFWS 2018a; accessed December 2018). Habitat, known species locations, and other records were obtained from the FWC, Fish and Wildlife Research Institute (FWRI), website: https://myfwc.com/research/ (accessed December 2018), in addition to Consultation Area shapefiles as provided by the USFWS. Cardno reviewed the FWC Bald Eagle Nest Locator online database: https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx (FWC 2018e; accessed November 2018), and the USFWS Wood Stork colonies and Core Foraging Area database: https://www.fws.gov/northflorida/WoodStorks/wood-storks.htm (USFWS 2018d; accessed December 2018).

3.5.5. Literature Review and Additional References

Scientists reviewed available literature including but not limited to field guides, species checklists, peer-review publications, unpublished academic sources, and other data collected near the site of the Event to obtain site-specific data as available including past permits or plans for other productions on Virginia Key, the Key Biscayne's Citizen Scientist Project website: www.keyscience.org/cs-lab/explore/waterways/exploring-the-waterways/ (Key Biscayne Community Foundation 2017; accessed December 2018), the Cornell Lab of Ornithology eBird website: https://ebird.org/explore (eBird 2018; accessed December 2018) and the Floristic Inventory by the Institute for Regional Conservation (IRC): https://regionalconservation.org/ircs/database/plants (IRC 2016; accessed December 2018).

3.5.6. Refined Species List

Following a review and analysis of available sources as referenced above, the initial species of concern list was refined to identify those most likely to occur within or near the Event site to assist with survey planning and further analysis on potential implications or adverse effects from the Event. This refined list includes 1 listed species of mammal, 11 listed species of birds, 17 migratory bird species considered to be Birds of Conservation Concern (BCC), 5 listed species of reptiles, 9 listed species of plants, and 4 species of seagrass considered possible or likely to occur. Please note that for any species of interest from the initial list where occurrence in or near the site of the Event was deemed unlikely (Table 3.5), such species are not discussed further as the Event is not reasonably expected to have an effect.

3.5.7. Biological Surveys

3.5.7.1. Aerial Survey

Experienced biologists completed an aerial due diligence survey of Virginia Key by helicopter on Sunday, December 2, 2018. The survey team consisted of a pilot operating a Robinson R-44 Raven and two biologists, one positioned on each side of the aircraft. Flight operations observed all applicable Federal Avian Regulations (FARs). The pilot maintained an appropriate distance during the survey to avoid disturbance to wildlife. The purpose of the evaluation was to determine the occurrence and relative abundance of those species listed as Endangered, Threatened, or of Special Concern by the USFWS under 50 CFR Part 17, protected by the MBTA, BGEPA, or listed by the FWC under Chapter 68A-27 F.A.C. near the site of the Event. Special consideration was made for those species likely to occur in similar habitats to those found on or near the site of the Event and for which the survey window was appropriate for recording nesting or presence, including but not limited to, the bald eagle (*Haliaeetus leucocephalus*).

3.5.7.2. Results

Figure 3.5.7.2 provides an overview of Virginia Key, noting the general area of interest for the Event and results from this survey effort. In summary, biologists canvassed the area intensively, including suitable mangrove and forested habitats, but no bald eagle nests were found and no individuals were observed. Overall, observed bird activity was high with multiple species of wading birds, shorebirds, and osprey (*Pandion haliaetus*) foraging and loafing; however, no shorebird nests or wading bird colonies were observed. One brown pelican (*Pelecanus occidentalis*) colony was located on a small mangrove island approximately 1 mile northwest of the Event site. Approximately 50 individuals were present and heavy whitewash was apparent, but no nests were visible at the time of survey. West Indian manatees (19 individuals) were observed throughout inshore and near offshore waters around Virginia Key. One sea turtle was observed swimming in the Atlantic Ocean off the beach, but the species is unknown because the individual dove down out of view prior to identification. No sea turtle nests or crawls were visible on the beaches, and nesting season does not begin until spring months (i.e., May). Seagrasses are known to occur around Virginia Key and contiguous or patchy seagrasses were apparent from the air. As the aerial survey was completed on a weekend with ideal weather conditions, documented human use was high (i.e., large number of people in cars, boats, jet skis, swimming, kayaking, paddle boarding, fishing, mountain biking, and beach going).

Figure 3.5.7.2 Aerial Survey

3.5.8. Pedestrian Survey

Biologists completed a subsequent pedestrian due diligence survey on Thursday, December 6 and Friday, December 7, 2018. Biologists completed this review as a follow-up to the aerial survey that occurred on December 2, 2018 in order to document the presence or absence by listed species and further identify otherwise sensitive areas. Special consideration was made for those species likely to occur in similar habitats to those found on or near the site of the Event and for which the survey window was appropriate for recording nesting or presence.

3.5.8.1. Results

Figure 3.5.8.1 provides an overview of Virginia Key, noting the general area of interest for the Event and results from this survey. In summary, one reddish egret (*Egretta rufescens*) was observed foraging on the shoreline. The survey occurred during the breeding window for the species in south Florida, but no colonies or active breeding sites were observed. One possible American crocodile (*Crocodylus acutus*) retreated into the water upon approach, and crocodile signage was noted around this wetland of observation. No gopher tortoise (*Gopher polyphemus*) burrows were observed. Lastly, biologists documented setup occurring for the Rakastella music event at HVKBP at the time of pedestrian survey.

Sensitive areas were identified in and around the Event site, including historic structures, landscape/planted vegetation or of otherwise importance to HVKBP (e.g., sandcastle structure), patchy seagrass beds in the basin near the Miami Marine Stadium, habitat restoration and conservation areas including coastal hammock habitat where listed species of plants occur, crocodile areas and wetlands, mangrove wetlands and beach dunes. Numerous mitigation measures will be implemented to avoid sensitive areas and to reduce the overall impacts of the Event, as described below.

Figure 3.5.8.1 Pedestrian Survey

3.5.9. Species Discussion and Conservation Measures

A discussion follows for each of those identified species considered possible or likely occur, and any of those species documented to occur (as a result of biological surveys or literature review), in habitats within or near the site of the Event. The discussion provides the current status of the species, occurrence within or near the Event site, and any specific conservation measures implemented by the Event Organizer as necessary to avoid or minimize potential adverse impacts from the Event and to demonstrate regulatory compliance.

3.5.10. Mammals

3.5.10.1. West Indian Manatee

The West Indian manatee (manatee) (*Trichechus manatus*) is listed as federally threatened by the USFWS under the ESA. Manatees are further protected by the federal MMPA. At the state level, manatees are protected by the Florida Manatee Sanctuary Act [§379.2431(2)]. Critical Habitat has been designated by the USFWS, which includes Biscayne Bay and the shallow areas around Virginia Key where dense seagrass beds are present and preferred by the species for foraging. The Miami Marine Stadium basin is also within the USFWS-designated Critical Habitat extent for the manatee. The main threat to the manatee is collisions with watercraft. Other threats include habitat loss, harassment and human disturbances, red tide, trash or other debris and pollution.

As summarized above, 19 manatees were recorded in the inshore and near offshore waters around Virginia Key as a result of aerial surveys. Manatees are known to feed on the extensive seagrass meadows located immediately south of the Port of Miami. Other feeding locations are found throughout Biscayne Bay. Manatees move from feeding locations in Biscayne Bay into the Miami River and the Little River throughout the year (FWC 2018g).

As previously discussed, nearly all activity associated with the Event will occur in upland habitats associated with the Miami Marine Stadium and HVKBP. Conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and some would benefit manatees. However, the Event Organizer is planning the temporary use of an existing marginal floating dock in the area of the Miami Marine Stadium to allow for pick-up and drop-off of people at the Miami Marine Stadium by water taxis. Additionally, up to 49 boats will be permitted to dock at this location as part of a VIP access to the Event. The installation and use of such a dock would be subject to environmental regulatory approvals which could include, but not limited to, additional conservation measures to be provided by the Event Organizer below.

- The Event Organizer will contract with an existing licensed water taxi company in Miami. Water taxi services will provide experienced operators that will transport people using established routes that do not expose manatees to activity different than that already occurring and tolerated. Furthermore, operators will adhere to "Idle Speed/No Wake Zones" where necessary and required. Seagrass areas will be avoided;
- The Event Organizer has contracted City of Miami Marine Patrol boats to patrol and monitor the entrance to the Miami Marine Stadium entrance to the basin and the basin. The Marine Patrol boats will be monitoring for boats traveling at unauthorized speeds and for vessels entering the basin that are not authorized to use the Event temporary docking facility by verification of the vessel displaying a special access permit or decal issued by the Event Organizer. Security personnel would restrict access to the marginal floating dock site to allow only authorized people and vessels. Access to open water will otherwise be restricted throughout the Event site through fencing and security detail;
- The Event Organizer shall require all construction vessel operators and the VIP boat users of the temporary docking facility to have watched the FWC manatee training video, An Introduction to Manatees (https://www.youtube.com/watch?v=Xs7zLRtZVOQ). The Event Organizer will require the VIP boat users to sign a Waiver of Acknowledgement that they have watched the video and seagrass and manatee education materials prior to receiving their special access permit or decal;
- The Event Organizer further agrees to post manatee educational signage typical of those FWC-approved designs including "Caution: Boaters (2009)" and "Caution: Shut Down (2009)" at the

marginal floating dock site to bring awareness and inform attendees that the area is sensitive and subject to federal laws for which violations may be prosecuted (FWC 2018j);

- During the Event, waste receptacles will be available at the floating dock and any marine debris unintentionally generated by the Event will be removed from the water immediately in accordance with the trash and recycle plan;
- A qualified marine mammal observer will be present at the floating dock during the three-day Event and use of the dock. If at any time a manatee or any other protected wildlife species should be observed in the water in the immediate Event area, boat traffic will be halted and the animal will be allowed to leave the area on its own accord; and
- The Event Organizer or their representatives will immediately report any death, injuries, or collisions with manatees to the FWC Wildlife Alert Hotline at 888-404-FWCC (3922) and will report by email within 24 hours to ImperiledSpecies@myfwc.com.

Aside from the Miami Marine Stadium basin usage for water taxi arrivals and departures and limited docking opportunities, the Event may draw spectators by boat to the inshore waters around Virginia Key during the three-day Event. In order to dissuade spectators from attempting to improperly enter the event, the Event Organizer will construct land-side fencing to restrict access to the Event area from the water and beach, restrict unauthorized access to the Event by providing City of Miami Marine Patrol boats to patrol the entrance to the basin and restrict unauthorized vessels and mooring, and deter attempts to swim or enter the Event site.

Routine boat usage is documented to be very high around Virginia Key with Bear Cut (located on the south side of Virginia Key) and Norris Cut (located on the north side of Virginia Key) serving as entry points for personal boats ranging from sailboats to power boats. Furthermore, according to information provided by the Key Biscayne's Citizen Scientist Project, a popular pastime is dropping anchor and interacting with other boaters on the shallow sandbars located on the Bayside of the Key. Sightseeing on the inlets of the Key is another popular recreational use of the Island's waterways. Boats anchoring either alone or rafting with other boats are also a common sight in the Key's waterways, often with boaters lounging in the water (Key Biscayne Community Foundation 2017). This corroborates observations made during the aerial survey. When documented, human use was high in and around the waters of Virginia Key. As a result of this level of existing activity, there would be no way to confirm that the Event specifically attracted any vessels to the waters surrounding Virginia Key and, aside from the location near the Miami Marine Stadium, the Event Organizer would have no way to acquire direct and reliable knowledge of incidents that occurred outside of their Event site by members of the general public. The Event Organizer has contracted City of Miami Marine Patrol boats to patrol and monitor the entrance to the Miami Marine Stadium entrance to the basin and the basin. The Marine Patrol boats will be monitoring for boats traveling at unauthorized speeds and for vessels entering the basin that are not authorized to use the Event temporary docking facility by verification of the vessel displaying a special access permit or decal issued by the Event Organizer. Security personnel would restrict access to the marginal floating dock site to allow only authorized people and vessels. As a result of temporary noise and light associated with the three-day Event, some individuals may leave the immediate area. However, these individuals can retreat to similar adjacent habitats if temporarily disturbed or displaced and should not miss foraging or loafing opportunities during this brief period.

Considering the proposed activity and conservation measures provided by the Event Organizer as discussed in the analysis above, it is reasonably expected that the Event will not adversely affect the manatee and/or their habitat.

3.5.11. Birds

3.5.11.1. Listed Shorebirds and Seabirds (Least Tern, Black Skimmer, Red Knot, America Oystercatcher, and Piping Plover)

Listed species of shorebirds and seabirds with the potential to occur near the Event site include the least tern (*Sternula antillarum*), black skimmer (*Rynchops niger*), red knot (*Calidris canutus rufa*), American

oystercatcher (*Haematopus palliates*), and piping plover (*Charadrius melodus*). The red knot and piping plover are federally listed by the USFWS as threatened under the ESA. Critical Habitat has been designated by the USFWS for the piping plover, but the extent of this habitat does not include Virginia Key. The least tern, black skimmer, and American oystercatcher are listed as threatened by the state of Florida under Chapter 68A-27 F.A.C. Critical Habitat is not designated for any of the state-listed species of shorebirds or seabirds with potential to occur. Threats to these birds include habitat loss and degradation, exposure to predators, human disturbances and recreation, and domesticated animals.

As summarized in Table 3-5, the red knot and piping plover are known to overwinter in the general area, the least tern and American oystercatcher have a breeding window that could overlap with the Event schedule (March and April), but the black skimmer breeds later (starting in May).

- Least tern - Nest in very shallow depressions on broad expanses of bare sand, which camouflage the eggs; or more commonly in South Florida, on top of flat building roofs (FWC 2018h). They lay from mid-April in south Florida;
- American oystercatcher – Nesting begins in March and can extend through August. FWC data do not include the Miami area or Biscayne Bay in the species' known distribution. In Florida, nests are known and often protected using fencing to buffer against disturbance. Documented nests are monitored regularly during the breeding season to determine productivity (FWC 2018a); and
- Black skimmer – Breeding occurs in summer months; colonies can include up to several hundred pairs of birds. Because of their high degree of sensitivity to human disturbances and recreational use of beaches, most black skimmer colonies in Florida would fail without some level of management. As a result, all documented colonies are known and managed to a certain degree (FWC 2018c). No such colonies are known to occur on Virginia Key.

No listed species of shorebirds were documented as a result of aerial or pedestrian surveys occurring on Virginia Key in the month of December. According to the shorebird colony location shapefiles provided by the FWC, the closest known colony (least tern) is located approximately 2 miles south of Virginia Key on Key Biscayne. A further review of breeding data as provided through the FWC Florida Shorebird Database online tool shows that least tern are known to nest on Key Biscayne around Crandon Park, but last records show inactive status (2014) and abandoned status (2012). Key Biscayne has two additional roof top colonies recorded, but those were categorized as inactive in 2014 and 2016, respectively. Virginia Key has no recorded nest sites or colonies for any species documented in the FWC online tool.

As previously discussed, at this time, nearly all activity associated with the Event will occur in upland and previously disturbed habitats associated with the Miami Marine Stadium and HVKBP. Conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would benefit birds. The Event Organizer intends to restrict pedestrian access to sensitive areas including the shoreline and beach dune areas with fencing and posting signage noting "Environmentally Sensitive Area/No Trespassing". This fencing will also deter unauthorized attendees from attempting to access the Event from the water and trampling the beach habitats. Other restricted sensitive areas include mud flats and wetlands, mangroves, and the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

Although listed species of shorebirds and seabirds are not known to nest on Virginia Key, occurrence is possible near the site of the Event by non-breeding individuals foraging, loafing, or flying throughout the general area. Considering that pedestrian access to sensitive habitats species will be restricted, direct impacts to individuals are not expected during the three-day Event. Additionally, considering the level of existing tolerated human activity, birds are unlikely to be disturbed by boats and pedestrians and vehicles in the area during the Event and during setup and breakdown. As a result of the temporary increase in noise and light associated with the three-day Event, some individuals may leave the immediate area. However, these individuals can retreat to similar adjacent habitats if temporarily disturbed or displaced and should not miss foraging or loafing opportunities.

In the absence of other current, site-specific scientific and commercial data indicating the presence of nesting shorebird colonies within or immediately adjacent to the Event site, considering that sensitive areas will be restricted, and individuals can retreat into similar suitable habitats, the Event should not adversely affect listed species of shorebirds and seabirds.

3.5.11.2. Wading Birds (Roseate Spoonbill, Wood Stork, Tricolored Heron, Reddish Egret, Little Blue Heron)

Listed species of wading birds with the potential to occur near the Event site include the wood stork (*Mycteria americana*), roseate spoonbill (*Platalea ajaja*), tricolored heron (*Egretta tricolor*), reddish egret (*Egretta rufescens*), and the little blue heron (*Egretta caerulea*). The wood stork is federally listed by the USFWS as threatened under the ESA. Core Foraging Areas (CFA) have been identified by the USFWS to include the 18.6-mile buffer around known wood stork colonies, but none of these include Virginia Key. The roseate spoonbill, tricolored heron, reddish egret, and little blue heron are listed as threatened by the state of Florida under Chapter 68A-27 F.A.C. Critical Habitat is not designated for any of the state-listed species of wading birds with potential to occur. Threats to these birds include habitat loss and degradation, exposure to predators, human disturbances and recreation, domesticated animals, and pollution.

As summarized in Table 3.5, the wood stork, tricolored heron, reddish egret, and little blue heron have a breeding window that could overlap with the Event schedule (i.e., March and April), but roseate spoonbill nesting is completed by March. The federally listed wood stork nests in colonies that are used year after year and most if not all locations are known. After a review of the USFWS wood stork colony dataset, there are no wood stork colonies known within 18.6 miles of Virginia Key (USFWS 2018d). Accordingly, no designated wood stork CFA is present. According to FWC, breeding dates for state-listed wading birds for South Florida are as follows (FWC 2018i):

- Roseate spoonbill: Breeding November – February (survey window December 1- February 28);
- Tricolored heron: Breeding February - August (survey window March 1 – June 31);
- Reddish egret: Breeding October – May (survey window December 1 – March 31); and
- Little Blue heron: Breeding February - August (survey window March 1 – June 31).

One individual reddish egret was observed foraging on the shoreline during the pedestrian review in December of 2018. Although the survey was conducted during the breeding season for the species, no nests were observed. In south Florida, the reddish egret is known to nest primarily in Florida Bay and the Florida Keys and nesting on Virginia Key is unknown and unlikely. Furthermore, no roseate spoonbill nests were recorded and the species is primarily known to occur further south in the County in Florida Bay. No little blue herons were observed. According to the wading bird colony shapefiles provided by the FWC (1999), the closest known colony (Atlas No. 620318) is located approximately 6 miles north of Virginia Key on a small island associated with the Biscayne Aquatic Preserve.

As previously discussed, nearly all activity associated with the Event will occur in upland and previously disturbed habitats associated with the Miami Marine Stadium and HVKBP. General conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would also benefit bird species. The Event Organizer intends to restrict pedestrian access to sensitive areas including the natural wetlands and mud flats with fencing and post signage noting "Environmentally Sensitive Area/No Trespassing". Other restricted sensitive areas include the beach and dunes, mangroves, and the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

Although listed species of colonial nesting wading birds are not known to nest on or near Virginia Key, occurrence is possible near the site of the Event by non-breeding individuals foraging, loafing, or flying throughout the general area. Considering that pedestrian access to sensitive habitats species will be restricted, direct impacts to individuals are not expected during the three-day Event. Additionally, considering the level of existing tolerated human activity, birds are unlikely to be disturbed by boats and

pedestrians and vehicles in the area during the Event and during setup and breakdown. As a result of the temporary increase in noise and light associated with the three-day Event, some individuals may leave the immediate area. However, these individuals can retreat to similar adjacent habitats if temporarily disturbed and should not miss foraging or loafing opportunities.

In the absence of other current, site-specific scientific and commercial data indicating the presence of nesting wading bird colonies within or immediately adjacent to the Event site, considering that sensitive areas will be restricted, and individuals can retreat into similar suitable habitats, the Event as proposed should not adversely affect any listed species of wading birds.

3.5.11.3. White-crowned Pigeon

The white-crowned pigeon (*Patagioenas leucocephala*) is listed as threatened by the state of Florida under Chapter 68A-27 F.A.C. Critical Habitat is not designated. Threats to the species include loss of habitat (primarily mangrove islands and tropical hardwood hammocks), human related disturbances, predation, collisions, storms and hurricanes (FWC 2017b).

In Florida, the white-crowned pigeon is limited to the southern portion of the peninsula and the Florida Keys. Although the white-crowned pigeon is not known to breed as far north as Virginia Key, the extreme extent of the species foraging distribution includes Virginia Key (FWC 2017b). The species primarily uses tropical hardwood hammocks for feeding on fruits and sheltering.

White-crowned pigeon are conspicuous and flight line surveys are an effective approach to identify nesting pairs or colonies. No nests or colonies were observed as a result of our aerial survey, but the survey was conducted in the non-breeding season (e.g., breeding occurs May - September) and nesting is unlikely considering the documented nesting distribution. Furthermore, no individuals were recorded foraging on Virginia Key during the pedestrian survey. While it is unlikely that the species regularly occurs, it is possible that individuals may visit the area and observations have been recorded on Virginia Key (eBird 2018). General conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would also benefit bird species. The Event Organizer intends to restrict pedestrian access to sensitive areas including the native forested uplands with fencing and will post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. Other restricted sensitive areas include mangroves and the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

In the absence of other current, site-specific scientific and commercial data indicating the presence of the nesting white-crowned pigeon within or immediately adjacent to the Event site, considering that sensitive areas will be restricted, and individuals can retreat into similar suitable habitats if disturbed, the Event should not adversely affect the white-crowned pigeon.

3.5.12. Migratory Birds of Conservation Concern

A total of 17 species of migratory BCC could possibly occur or are likely to occur within or near the Event site (Table 3.5). Table 3.5 focuses on BCC species, which are "species, subspecies, and populations of all migratory nongame birds that, without additional conservation actions, are likely to become candidates for listing under the ESA..." (USFWS). These species are afforded protection under the federal MBTA.

3.5.12.1. Breeding

As summarized in Table 3.5, 7 of the 17 identified species that possibly occur or are likely to occur in the area of the Event are documented to have a breeding window that overlaps with the months of the Event. Two of these species, the bald eagle and the brown pelican, were documented within or near the site of the Event and are further discussed below.

3.5.12.2. Bald Eagle

The bald eagle is afforded protection under the federal BGEPA and in Florida under state rule (68A-16.002, F.A.C.). The bald eagle is not considered to be a BCC species. The bald eagle population has recovered greatly since the 1960s and 1970s, in large part because of removal of dichlorodiphenyl trichloroethane (DDT) from the environment and the previous protections afforded by the ESA. The recovery was so successful that the species was removed from federal listing in 2007. Bald eagles have since rebounded and reestablished breeding territories throughout the U.S., with Florida having some of the highest nesting densities in the lower 48 states (FWC 2018b).

In Florida, bald eagles nest from October 1 – May 15. Bald eagles generally nest near areas with an adequate food supply including, but not limited to, coastlines, rivers, large lakes, streams, and marshes. Bald eagles exhibit high nest fidelity and use the same nesting territory each year and the territory is defended by both members of the pair. A territory may range in size from 0.6-1.2 square miles depending on habitat suitability and prey density (Buehler 2000). Each year, upon returning to the nest, the eagles will add additional nest material including sticks, branches, and moss. Bald eagles primarily consume fish but are opportunistic feeders, often feeding or scavenging on a wide variety of prey including waterfowl, turtles, rabbits, snakes, small mammals and carrion.

FWC has compiled a database of known nests throughout Florida. A review of the FWC Bald Eagle Nest Locator online database results in identification of the closest documented nest site (DA001) located approximately 2.5 miles from HVKBP off the eastern coast of the key. It was last known active in 1987 and last surveyed in 2010. The next closest nest (DA006) is recorded approximately 10 miles west near Tropical Park. Reports of visiting bald eagles have been made on Virginia Key (FWC 2018e, eBird 2018).

Experienced biologists conducted an aerial survey by helicopter in December of 2018 to locate bald eagles and their nest sites around Virginia Key. The survey team canvassed suitable nesting habitats intensively including natural uplands, Australian pine forests, and nearby mangrove habitats, but no bald eagles were observed and no bald eagle nests were located. The survey was conducted in peak breeding season and it is reasonable to assume that the lack of observations indicate that bald eagles do not nest near the Event site or anywhere else on Virginia Key.

It is possible that individuals may visit the area and sporadic observations have been recorded on Virginia Key. These observations likely represent a non-breeding individual moving throughout the area and not maintaining a territory. General conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would also benefit bird species. The Event Organizer intends to restrict pedestrian access to sensitive areas including the native forested uplands with fencing and will post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. Other restricted sensitive areas include mangroves and the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

In the absence of other current, site-specific scientific and commercial data indicating the presence of the nesting bald eagles within or immediately adjacent to the Event site, considering that sensitive areas will be restricted, and individuals can retreat into similar suitable habitats if disturbed, the Event should not adversely affect the bald eagle.

3.5.12.3. Brown Pelican

The brown pelican is afforded protection under the federal MBTA but is not considered to be a BCC species. As of January 2017, the species was removed from the Florida state list. Brown pelican populations suffered a severe decline during the 1960s and 1970s due to the effects of DDT. The population has since rebounded. Current threats include habitat degradation, sea level rise, pollution, and the destruction of coastal wetlands (FWC 2018d).

The brown pelican is a seabird, spending most of its time on or near the ocean. This species feeds on fish that they scoop up near the water's surface. The brown pelican breeds in large colonies of several hundred pairs. These colonies can be found in trees or bushes usually on estuarine islands, mostly in

mangroves. Breeding months differ by location but occurs between winter and spring in south Florida (Shields 2014).

Experienced biologists conducted an aerial survey by helicopter in December of 2018. One colony of brown pelicans (approximately 50 individuals) were observed on a small mangrove island on the northwest coast of Virginia Key. This location is approximately 1 mile north of the Miami Marine Stadium. Heavy whitewash was apparent but no nests were observed at the time of survey.

In Florida, brown pelicans are actively nesting in March and April during times associated with the Event and brown pelicans may flush from a nest when disturbed. Disturbance of a breeding colony could result in greatly reduced reproductive success. Rodgers and Smith (1995) evaluated setback distances to protect nesting colonies from human disturbance for 15 bird species in Florida, including the brown pelican. The study evaluated human disturbances as a result of humans walking, canoeing, and motor boating near colonies and determined that an overall 100-meter buffer was appropriate in most cases to avoid disruption to nesting wading bird colonies. Their study further found that brown pelicans were relatively tolerant of human activity, likely a result of their long association with and habituation to human related disturbances in coastal areas in Florida (Rodgers and Smith 1995).

General conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would also benefit bird species. The Event Organizer intends to restrict pedestrian access to sensitive areas including the mangrove wetlands with fencing and will post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. Restricted sensitive areas also include the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security.

The Event will occur at a distance greater than 1 mile from the known colony, but the colony is situated in a direction that faces it toward the Miami Marine Stadium. As detailed in Section 1.4.4.6, numerous private and public events have taken place and are scheduled to take place at the Miami Marine Stadium. Considering the number and nature of past events that have occurred at the Miami Marine Stadium during the brown pelican breeding season and the routine boat usage around Virginia Key, it is unlikely that activities associated with the Event would disrupt brown pelicans to the point of flushing or nest abandonment if nesting occurred during the Event.

3.5.12.4. Non-Breeding

As summarized in Table 3.5, 10 of the 17 identified migratory BCC species that possibly occur or are likely to occur in the area of the Event are documented to breed elsewhere or have a breeding window that occurs outside of the months of the Event (USFWS 2018b). Therefore, nesting season impacts are not expected for these species as a result of the Event.

These non-breeding migratory BCC, could occur near the Event site for foraging, loafing, or flying throughout the general area. Considering that pedestrian access to sensitive habitats will be restricted, direct or intentional impacts to individuals are not expected during the three-day Event. Additionally, considering the level of existing tolerated human activity, birds are unlikely to be disturbed by boats and pedestrians and vehicles in the area during the Event and during setup and breakdown. As a result of the temporary increase in noise and light associated with the three-day Event, some individuals may leave the immediate area. However, these individuals can retreat to similar adjacent habitats if temporarily disturbed and should not miss foraging or loafing opportunities.

General conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would also benefit BCC bird species. The Event Organizer intends to restrict pedestrian access to sensitive areas including the native forested uplands with fencing and will post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. Other restricted sensitive areas include mangroves, the shoreline, beach dunes, and the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

3.5.13. Reptiles

3.5.13.1. Gopher Tortoise

The gopher tortoise is listed as threatened by the state of Florida under Chapter 68A-27 F.A.C. The gopher tortoise is also a candidate for federal listing by the USFWS who determined that federal listing is warranted but precluded by other priorities (Federal Register 76: 45130-45162). Critical Habitat is not designated. Land conversion for development is the primary threat to gopher tortoises. Conversion of native habitats for agricultural and silviculture uses, loss of habitat because of fire suppression and human predation also are threats (FWC 2017a).

Gopher tortoises prefer xeric, open habitats with abundant herbaceous ground cover (Diemer 1984). Such habitats include coastal strand, sand pine and oak scrubs, longleaf pine – turkey oak sandhills, mixed forest types and rural lands. Tortoises typically occupy habitats with relatively open canopies (0-60%), dense herbaceous ground cover, and water table depths of 1 to more than 3 feet below the surface. Gopher tortoises excavate burrows for protection from weather extremes, desiccation and predators. The burrows may be as long as 50 feet and up to 25 feet below the ground surface.

The pedestrian survey was led by a FWC-Authorized Gopher Tortoise Agent, experienced in recognizing gopher tortoise burrows and classifying their activity status (i.e., active, inactive, abandoned) in accordance with FWC Guidelines (FWC 2017a). No potentially occupied burrows or individuals were observed in areas of the Miami Marine Stadium or the HVKBP targeted for the Event. According to FNAI, there is one historic record of a gopher tortoise on Virginia Key from 1990. The park states that suitable habitat is present at the park. It is possible that gopher tortoise may occur in the native upland restoration hammock that is located near the Event site, as it was not covered at 100% during the pedestrian review, but no burrows were observed. However, conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would benefit gopher tortoises. The Event Organizer intends to restrict pedestrian access to sensitive areas including the native forested uplands with fencing and will post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. This areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

In the absence of other current, site-specific scientific and commercial data indicating the presence of gopher tortoise burrows within or immediately adjacent to the Event site, and considering that sensitive areas will be restricted, the Event should not adversely affect the species.

3.5.13.2. American Crocodile

The American crocodile (*Crocodylus acutus*) is listed as federally endangered by the USFWS under the ESA but the Florida population was downgraded to threatened status as a result on an increase in the nesting population and range. Virginia Key is within the designated Consultation Area for the species. Critical Habitat has been designated north to Elliot Key, and does not include Virginia Key (USFWS 2018c). Crocodiles inhabit coastal habitats of extreme South Florida and are limited by climate more than habitat (USFWS 2004).

Crocodiles nest on land near aquatic habitats between March and September, with pre-mating activity from January - March, mating in March - April, and nesting from April – June followed by incubation (about 85 days), and hatching July-August (USFWS 2004, NPS 2018).

One possible crocodile was observed in a wetland system in HVKBP during the pedestrian review in December. The individual noisily entered the water upon approach by biologists. Crocodile signage was posted around the wetland of observation. Crocodiles are also known to occur in the larger wetland and mud flats in the interior portion of Virginia Key between the park and the mangrove habitats. Videos reviewed by local news outlets depict a mature male crocodile on Virginia Key walking near NOAA employees without issue or disturbance (Reeves 2013). Further review of available sources documented past crocodile nesting on the northern beaches of Virginia Key near the Bill Sadowski Critical Wildlife Area (Staletovich 2015).

As previously discussed, nearly all activity associated with the Event will occur in upland habitats associated with the Miami Marine Stadium and HVKBP. General conservation measures are incorporated into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and as listed for the manatee, would also benefit the crocodile. The Event Organizer intends to restrict pedestrian access to sensitive areas including the natural wetlands and mud flats with fencing and post signage noting "Environmentally Sensitive Area/No Trespassing". Other restricted sensitive areas include the beach and dunes, mangroves, and the Bill Sadowski Critical Wildlife Area. These areas will be patrolled by security.

To further benefit the crocodile, the Event Organizer will create a gap in the bottom of their installed fencing (i.e., 2'6" high and 16' wide) to allow for crocodile movement between important habitats that have been documented to be used by the species. This will allow for individuals to move through their habitat during times associated with the mating season and temporarily retreat from areas that are located closer to the Event. These individuals can retreat to similar adjacent habitats if temporarily disturbed as a result of the three-day Event and should not miss foraging or mating opportunities. A map showing the sensitive areas of the Event site and the proposed location of the crocodile fence is provided as Figure 3.5.13.2. Additionally, the Event Organizer intends to have an environmental monitor onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced biologists will create and provide the Event Organizer with a field manual to include photographs for the environmental monitor to reference to assist in accurate identification of sensitive species and habitats.

Considering the level of exposure by crocodiles to human activities on Virginia Key, other similar events that have taken place in the same areas, and the specific conservation measures provided by the Event Organizer as discussed in the analysis above, it is not reasonably expected that the Event will adversely affect the crocodile.

Figure 3.5.13.2 Crocodile Fence Modification Location

3.5.13.3. Sea Turtles

Listed species of sea turtles with the potential to occur near the Event site or nest on the beaches of Virginia Key include the hawksbill sea turtle (*Eretmochelys imbricata*), green sea turtle (*Chelonia mydas*), and the loggerhead sea turtle (*Caretta caretta*). Other species of sea turtles may be present in nearshore waters but are not known to nest of Virginia Key or the immediate vicinity. The hawksbill sea turtle is listed by the USFWS as endangered under the ESA; the green sea turtle and the loggerhead sea turtle are listed as threatened. The species are further protected by state and local laws. Critical Habitat has been designated for each individual species, but none is located in the area of Virginia Key. Threats to sea turtles include artificial lighting and urban sky glow, boating traffic, pollution and plastic ingestion, entanglement with fishing gear, and coastal development and loss of nesting habitat (Miami-Dade County 2018).

In the U.S., sea turtle nesting season occurs from April through September, with a peak in June and July. Nesting occurs primarily at night. According to USFWS, breeding dates for sea turtle species in South Florida are as follows (USFWS 2018e):

- Hawksbill sea turtle: Breeding June-August;
- Green sea turtle: Breeding June- September; and
- Loggerhead sea turtle: Breeding April-September.

During the aerial survey, one sea turtle was observed swimming in the near offshore waters of Virginia Key. The individual dove out of view before species identification was confirmed. No other sea turtles or signs of their occurrence (crawls) on the beach were observed during the aerial or pedestrian reviews. According to the FWC FWRI Florida Sea Turtle Nesting Beach Monitoring Program, loggerhead sea turtle is the only species recorded nesting on Virginia Key in medium density. Loggerhead nest density is measured in number of nests per kilometer of beach by genetic subunit in Florida during a five-year period from 2011- 2015 (FWC FWRI unpublished).

Loggerheads typically nest in Florida from April to September. Loggerheads are known to nest from one to seven times within a nesting season at intervals of approximately 14 days. Mean clutch size varies from about 100 to 126. Incubation duration ranges from about 42 to 75 days, depending on incubation temperatures, but averages 55-60 days for most clutches in Florida. Hatchlings generally emerge at night (USFWS 2018g).

As previously discussed, nearly all activity associated with the Event will occur in upland habitats associated with the Miami Marine Stadium and HVKBP. Conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2and some would benefit sea turtles.

However, the Event Organizer is considering the temporary use of a marginal floating dock in the area of the Miami Marine Stadium to allow for pick up and drop of people at the Miami Marine Stadium by water taxi. Additionally, up to 49 boats will be permitted to dock at this location as part of a VIP access to the Event. The installation and use of such a dock would be subject to environmental regulatory approvals which could include, but not limited to, additional conservation measures to be provided by the Event Organizer as detailed above for the manatee. These specific conservation measures would also provide a benefit to sea turtles.

Aside from the Miami Marine Stadium basin usage for water taxi arrivals and departures and limited docking opportunities, the Event may draw spectators by boat to the inshore waters around Virginia Key during the three-day festivities. However, the Event Organizer cannot reasonably control the actions of the general public. The Event Organizer will construct fencing to restrict access to the Event area from the water and beach, restricting unauthorized access to the Event and deterring attempts to swim or enter the Event site.

Routine boat usage is documented to be very high around Virginia Key with Bear Cut (located on south side of Virginia Key) and Norris Cut (located on the north side of Virginia Key) serving as entry points for personal boats ranging from sailboats to power boats. Furthermore, according to information provided by the Key Biscayne's Citizen Scientist Project, a popular pastime is dropping anchor and interacting with other boaters on the shallow sandbars located on the Bayside of the Key. Sightseeing on the inlets of the

Key is another popular recreational use of the Island's waterways. Boats anchoring either alone or rafting with other boats are also a common sight in the Key's waterways, often with boaters lounging in the water (Key Biscayne Community Foundation 2017). This corroborates observations made by biologists during the aerial survey when documented human use was high in and around the waters of Virginia Key. As a result of this level of existing activity, there would be no way to confirm that the Event specifically attracted any vessels to the waters surrounding Virginia Key and, aside from the location near the Miami Marine Stadium, the Event Organizer would have no direct knowledge of incidents that occurred outside of their Event site by members of the general public. The Event Organizer has contracted with the City of Miami Marine Patrol officers and will be on active patrol in the area.

Considering the level of existing tolerated human activity, sea turtles are unlikely to be disturbed by boats and pedestrians and vehicles in the area during setup and breakdown. As a result of the temporary increase in noise and light associated with the three-day Event, some individuals may leave the immediate area or may not approach the beaches directly near the HVKBP. However, these individuals can retreat to similar adjacent habitats if temporarily disturbed or displaced and should not miss foraging

The Event is to occur in the month of March with deconstruction occurring in early to mid-April. The Event is not occurring on the beach. Sea turtle nesting season in Miami is from May to October and may occur as early as April. The Event is occurring outside of sea turtle nesting season and therefore will not impact sea turtle nesting. The Event is not occurring on the beach and beach access will be restricted. Deconstruction activities will be limited to daylight hours and will not impact sea turtle nesting. No work will be conducted in wetlands. Furthermore, no alterations to the natural habitats or communities that occur onsite are intended.

Considering the proposed activity, timeline, and conservation measures provided by the Event Organizer as discussed in the analysis above, it is not reasonably expected that the Event will adversely affect sea turtles.

3.5.14. Listed Plants

The county-wide list of plant species is extensive and most species are only known from southern Miami-Dade around the Everglades and other conservation lands and the Florida Keys. Table 3.5 references only those listed species of plants known to occur on Virginia Key as a result of desktop analyses and pedestrian surveys. The results of these analyses confirm that rare plants were found in native habitats, in restoration plantings within those native habitats, and in a few cases, in restoration areas along the fringes of some park features, in particular near the old miniature railroad. In some areas, there were nature trail signs, and in others, there were plantings of individual specimens with labels. The majority were either in natural settings under conservation or in restoration plantings within the natural settings. Restoration areas that are near recreation centers or located where humans might accidentally trample them were generally "roped" off with metal rope.

Conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and those would benefit listed plants and other sensitive natural vegetation. The Event Organizer intends to restrict pedestrian access to sensitive areas including the native forested uplands with fencing and will post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. This areas will be patrolled by security. Additionally, the Event Organizer intends to have an environmental onsite during the setup and breakdown of the Event to ensure sensitive areas are avoided. Experienced botanists will create and provide the Event Organizer with a field manual including photographs for the environmental monitor to reference to assist in accurate identification of sensitive plant species and habitats.

3.5.15. Seagrasses and Submerged Aquatic Vegetation

Patchy seagrass is present in the basin near the Miami Marine Stadium as documented during the pedestrian field review. Species present include turtle grass (*Tholassia testudinum*) in addition to shoal grass (*Halodule wrightii*) and manatee grass (*Syringodium filiforme*) possibly present. Johnson's sea grass (*Halophila johnsonii*) (federally listed as threatened and state-listed as endangered) has Critical Habitat designated but, while such habitat extends south in Biscayne Bay toward the northern portions of Virginia

Key, it does not include the waters of the basin. Contiguous seagrass beds are present throughout Biscayne Bay and inshore and near offshore waters of Virginia Key.

As previously discussed, nearly all activity associated with the Event will occur in upland habitats associated with the Miami Marine Stadium and HVKBP. Conservation measures are built into the Event as detailed in Sections 2.1.7, 3.2.8, 4.1, and 4.2 and some would benefit seagrasses. However, the Event Organizer is considering the temporary use of a marginal floating dock in the area of the Miami Marine Stadium to allow for pick up and drop of people at the Miami Marine Stadium by water taxi. Additionally, up to 49 boats will be permitted to dock at this location as part of a VIP access to the Event. The installation and use of such a dock would be subject to environmental regulatory approvals which could include, but not limited to, additional conservation measures to be provided by the Event Organizer as detailed above for the manatee. These specific conservation measures would also provide a benefit to seagrasses.

Aside from the Miami Marine Stadium basin usage for water taxi arrivals and departures and limited docking opportunities, the Event may draw spectators by boat to the inshore and near offshore waters around Virginia Key during the three-day festivities. However, the Event Organizer cannot reasonably control the actions of the general public. The Event Organizer will construct fencing to restrict access to the Event area from the water and beach, restricting unauthorized access to the Event and deterring attempts to swim or enter the Event site through sensitive habitats.

Routine boat usage is documented to be very high around Virginia Key with Bear Cut (located on south side of Virginia Key) and Norris Cut (located on the north side of Virginia Key) serving as entry points for personal boats ranging from sailboats to power boats. Furthermore, according to information provided by the Key Biscayne's Citizen Scientist Project, a popular pastime is dropping anchor and interacting with other boaters on the shallow sandbars located on the Bayside of the Key. Sightseeing on the inlets of the Key is another popular recreational use of the Island's waterways. Boats anchoring either alone or rafting with other boats are also a common sight in the Key's waterways, often with boaters lounging in the water (Key Biscayne Community Foundation 2017). This corroborates observations made by biologists during the aerial survey when documented human use was high in and around the waters of Virginia Key. As a result of this level of existing activity, there would be no way to confirm that the Event specifically attracted any vessels to the waters surrounding Virginia Key and, aside from the location near the Miami Marine Stadium, the Event Organizer would have no direct knowledge of incidents that occurred within sensitive habitats outside of their Event site by members of the general public. The Event Organizer has contracted City of Miami Marine Patrol boats to patrol and monitor the entrance to the Miami Marine Stadium entrance to the basin and the basin. The Marine Patrol boats will be monitoring for boats traveling at unauthorized speeds and for vessels entering the basin that are not authorized to use the Event temporary docking facility by verification of the vessel displaying a special access permit or decal issued by the Event Organizer. Security personnel would restrict access to the marginal floating dock site to allow only authorized people and vessels.

Table 3.5 Species that are Known or Believed to Occur within Miami-Dade County

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
MAMMALS							
Florida bonneted bat	*Eumops floridanus*	E	FE	Roosts in palms, tree hollows, buildings; may use utility poles and other structures (e.g., bridges); forages high over open natural and human-altered landscapes primarily on flying insects; important foraging areas include wetlands and freshwater ponds and streams where bats also drink.	No; Outside of Consultation Area; Outside of Focal Area	Active Year-round; Mid-April- Mid-August (nocturnal)	Unlikely
Florida panther	*Puma concolor coryi*	E	FE	Wide ranging predator; requires extensive blocks of forested or otherwise unfragmented natural communities; large wetlands important for diurnal refuge; will tolerate improved areas in a mosaic of natural communities.	No; Outside of Focus Area	Active Year-round	Unlikely
West Indian manatee	*Trichechus manatus*	T	FT	Manatees live in marine, brackish, and freshwater systems in coastal and riverine areas throughout their range. Preferred habitats include areas near the shore featuring underwater vegetation like seagrass and eelgrass. They feed along grass bed margins with access to deep water channels, where they flee when threatened. Florida manatees can be found throughout Florida for most of the year.	Yes; Critical Habitat designation includes waters of Virginia Key	Year-round breeding possible	Likely
Southern mink	*Mustela vison evergladensis*		T	In southern Florida, this species can be found in the freshwater and saltwater marshes of the Everglades. Some known mink hotspots include salt marsh areas near Fort Clinch State Park and Big Talbot Island State Parks, Cedar Key Scrub State Preserve and the forest of Fakahatchee Strand Preserve State Park.	NA	Active Year-round	Unlikely
BIRDS							
Least tern	*Sternula antillarum*		T	The least tern inhabits areas along the coasts of Florida including beaches, lagoons, bays, and estuaries; increasingly use artificial nesting sites, including gravel rooftops, dredge spoil islands or other dredged material deposits, construction sites, causeways, and mining lands; nesting areas have a substrate of well-drained sand or gravel and usually have little vegetation.	NA	April-September	Likely

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Food Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
Black skimmer	*Rynchops niger*		T	The black skimmer inhabits coastal areas in Florida including beaches, bays, estuaries, sandbars, and tidal creeks. Nests primarily on sandy beaches, small coastal islands, and dredge spoil islands, but also on gravel rooftops.	NA	May-September	Likely
Bachmans warbler	*Vermivora bachmanii*	E	FE	The Bachman's warbler inhabits bottomland forests and swamps. In Florida, the species is found in Monroe and Miami-Dade Counties. Breeding and nesting habitat is difficult to access and not well documented.	NA	March - June	Unlikely
Red knot	*Calidris canutus rufa*	T	FT	In migration and winter, this species is found on coastal mudflats and tidal zones and sometimes on open sandy beaches.	NA	Wintering	Possible
Red-cockaded woodpecker	*Dryobates borealis*	E	FE	Inhabits open, mature pine woodlands that have a diversity of grass, forb, and shrub species; generally occupies longleaf pine flatwoods in north and central Florida, mixed longleaf pine and slash pine in south-central Florida, and slash pine in south Florida outside the range of longleaf pine; forages in several forested habitat types that include pines of various ages, but prefer more mature pines; most colonies are known/documented.	No; Outside of Occurrence Area; Outside of Consultation Area	Year-round	Unlikely
Snail kite	*Rostrhamus sociabilis*	E	FE	Forages in large open freshwater marshes and lakes with shallow water and a low density of emergent vegetation; habitat dependent upon apple snails to be caught at water surface; nests over water in a low tree or shrub habitats (commonly willow, wax myrtle, pond apple, or buttonbush, but also in non-woody vegetation like cattail or sawgrass).	No; Outside of Consultation Area	January - July	Unlikely
Roseate spoonbill	*Platalea ajaja*		T	In Florida, this species is found in Florida Bay, Tampa Bay, and Brevard County. It primarily nests in mixed-species colonies on coastal mangrove islands or in Brazilian pepper on man-made dredge spoil islands near suitable foraging habitat. Forages in shallow water of variable salinity, including marine tidal flats and ponds, coastal marshes, mangrove dominated inlets and pools, and freshwater sloughs and marshes.	NA	Breeding November-February Survey December-February	Possible

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
White-crowned pigeon	*Patagioenas leucocephala*		T	White-crowned pigeon inhabit low-lying forest habitats with ample fruiting trees. Its distribution in the United States is restricted to Florida Bay, Biscayne Bay, and the Florida Keys, although a few individuals probably nest inland in Monroe and Miami-Dade counties. The diet of the white-crowned pigeons primarily consists of tropical hardwood tree fruits.	NA	May-September; peak from May to early June and July to early August	Possible
Florida grasshopper sparrow	*Ammodramus savannarum floridanus*	E	FE	Requires large areas of frequently burned dry prairie habitat with patchy open areas sufficient for foraging; may persist in pasture lands that have not been intensively managed so as to remove all vegetation clumps.	No; Outside Consultation Area	April - June	Unlikely
Florida scrub-jay	*Aphelocoma coerulescens*	T	FT	Inhabits fire dominated, low-growing, scrub oak habitat found on well-drained sandy soils; may persist in areas with sparser oaks or scrub areas that are overgrown but at much lower densities and with reduced survivorship.	No; Outside Consultation Area	March 1 - October 31	Unlikely
Wood stork	*Mycteria americana*	T	FT	Nests colonially in a variety of inundated forested wetlands, including cypress strands and domes, mixed hardwood swamps, sloughs, and mangroves; increasingly nesting in artificial habitats; forages mainly in shallow water in freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures and ditches, where they are attracted to falling water levels that concentrate food sources.	No; No known colonies and no designated CFA	March - July	Possible
American oystercatcher	*Haematopus palliatus*		T	Requires large areas of beach, sandbar, mud flat, and shellfish beds for foraging; utilizes sparsely vegetated, sandy areas for nesting, but will also use beach wrack and marsh grass; large expanses of suitable nesting areas generally are needed.	NA	February-October	Possible
Southeastern American kestrel	*Falco sparverius paulus*		T	Found in open pine habitats, woodland edges, prairies, and pastures; nests in cavities in tall dead trees or utility poles generally with an unobstructed view of surroundings; sandhill habitats seem to be preferred, but may also occur in flatwoods settings; open patches of grass or bare ground are needed in flatwoods settings for foraging.	NA	April - August	Possible, but unlikely

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
Tricolored heron	*Egretta tricolor*		T	Nesting colonies primarily occur on mangrove islands or in willow thickets in fresh water; feeds in a variety of permanently and seasonally flooded wetlands, mangrove swamps, tidal creeks, ditches, and edges of ponds and lakes.	NA	Breeding February-August Survey March - June	Likely
Reddish egret	*Egretta rufescens*		T	Primarily forages in shallow coastal habitats including tidal flats, salt ponds, lagoons, and open mangrove communities. Typically nests on natural islands or man-made spoil islands with nests generally constructed in mangroves 3 - 6 meters above the ground or water. Will also use Brazilian pepper, cactus, mesquite, huisache, ragweed, sea oxeye daisy, sea purslane, camphor daisy, and spanish bayonet. Nests are sometimes placed on ground among low vegetation or on bare sand or shell beach ridges.	NA	Breeding October-May Survey December-Mar	Likely
Little blue heron	*Egretta caerulea*		T	Foraging occurs in freshwater lakes, marshes, swamps, and streams; nests in a variety of woody vegetation, including cypress, willow, maple, black mangrove, and cabbage palm; usually breeds in mixed-species colonies in flooded vegetation or on islands.	NA	Breeding February-August Survey March - June	Likely
Piping plover	*Charadrius melodus*	T	FT	Inhabits sandy beaches, sand flats, and mudflats along coastal areas.	Yes - Within Consultation Area; No - Critical Habitat not intersected	Wintering	Possible
Florida burrowing owl	*Athene cunicularia floridana*		T	High, sparsely vegetated, sandy ground; natural habitats include dry prairie and sand hill; extensive use of rural areas such as pastures, airports, ball fields, parks, road right-of-ways, and vacant spaces in residential areas.	NA	Year-round (breeding February 15-July 10)	Unlikely
Florida sandhill crane	*Antigone canadensis pratensis*		T	Occurs in wet prairies, freshwater marshes, and pasturelands; avoids forests and deep marshes but uses transition zones and edges; frequents agricultural areas, golf courses, and other open lawns; nest is a mound of herbaceous plant material in shallow water or on the ground in marshy areas.	NA	January - June	Possible, but unlikely

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
Cape sable seaside sparrow	*Ammodramus maritimus mirabilis*	E	FE	Inhabits areas periodically burned and flooded including flooded inland prairies of cordgrass, muhly grass, and short sawgrass. Nests in clumps of grass approximately 6 inches off the ground.	No; Outside Consultation Area; Outside Critical Habitat	February - August with peak nesting April - May	Unlikely
REPTILES							
Rim Rock crowned snake	*Tantilla oolitica*		T	Burrows in or uses soil and fallen logs/debris. Known habitats include sandy or rocky soils in slash pine flatwoods, tropical hardwood hammocks, vacant lots, and pastures with shrubby growth and scattered slash pine.	NA	Eggs probably laid in early summer	Unlikely
Pine snake	*Pituophis melanoleucus*		T	Habitats with relatively open canopies and dry sandy soils such sandhill and former sandhill, including oldfields and pastures, but also sand pine scrub and scrubby flatwoods; often coexists with pocket gophers and gopher tortoises.	NA	Mating April - June. Eggs typically laid late May - July. May extend into winter	Unlikely
Gopher tortoise	*Gopherus polyphemus*	C	T	Typically found in dry upland habitats, including sandhills, scrub, xeric oak hammock, and dry pine flatwoods; commonly utilizes disturbed habitats such as pastures, oldfields, and road shoulders; tortoises excavate deep burrows for refuge from predators, weather, and fire; more than 300 other species of animals have been recorded sharing these burrows.	NA	Year-round w/ mating & nesting typically occurring from late April - July (Peak in May and June)	Possible
Hawksbill sea turtle	*Eretmochelys imbricata*	E	FE	Inhabits warm tropical seas. In Florida, hawksbills are found primarily on reefs in the Florida Keys and along the southeastern Atlantic coast.	No; Outside Critical Habitat	June-August (FWC)	Possible
Eastern indigo snake	*Drymarchon couperi*	T	FT	Broad range of habitats, from scrub and sandhill to wet prairies and mangrove swamps; in northern part of range, often winters in gopher tortoise burrows in sandy uplands but forages in more hydric habitats; requires very large tracts of land to survive.	NA	Year-round (October 1 - April 30 near sites of winter refuge)	Possible, but unlikely; historic records (1977-1998) on barrier islands to south

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
Leatherback sea turtle	*Dermochelys coriacea*	E	FE	The most pelagic of the sea turtles. Adult females require sandy nesting beaches backed with vegetation and sloped sufficiently so the distance to dry sand is limited. Their preferred beaches have proximity to deep water and generally rough seas.	No; Outside Critical Habitat	March - July (FWC)	Possible, but unlikely
American crocodile	*Crocodylus acutus*	T	FT	Occur at the northern end of their range in south Florida. Typically found in brackish or saltwater areas including ponds, coves, and creeks within mangrove swamps.	No - Outside Critical Habitat; Yes – Within Consultation Area	Courtship begins in late January and early February; Nesting occurs in late April and early May (85 day incubation period)	Likely
Green sea turtle	*Chelonia mydas*	T	FT	Found during the day in shallow flats and seagrass meadows; use scattered rock ledges, oyster bars, and coral reefs at night for sleeping quarters.	No; Outside Critical Habitat (No critical habitat in Florida)	June-September (FWC)	Possible
Loggerhead sea turtle	*Caretta caretta*	T	FT	Wide ranging habitat; may be found far out to sea as well as inshore areas such as bays, lagoons, salt marshes, creeks, ship channels, coral reefs, etc. Nesting occurs on open beaches or narrow bays having suitable sand.	No; Outside Critical Habitat	April-September (FWC)	Possible
American alligator	*Alligator mississippiensis*	SAT	FT(S/A)	Favors freshwater wetland habitats including marshes, swamps, rivers, and lakes.	NA	Nesting in late June or early July with hatching in late August or early September	Possible, but unlikely
FISH							
Atlantic sturgeon	*Acipenser oxyrinchus*	E	FE	The Atlantic sturgeon inhabits both salt and fresh water habitats, cycling between the two. Some migrate into brackish and saltwater during the fall and feed there throughout the winter months, and migrate into fresh water rivers during the spring and hold there through the summer months, while others remain at sea for years.	No; Outside Critical Habitat	Spawning typically occurs in the spring well upriver in freshwater	Unlikely; known to occur south to St. John's River

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
INVERTS							
Bartram's scrub-hairstreak	*Strymon acis bartrami*	E	FE	The Bartram's hairstreak occurs only within pine rocklands that retain its only known hostplant, pineland croton (*Croton linearis*) and is rarely seen more than 5 meters from its hostplant.	No; Outside Critical Habitat	Most abundant in spring and early summer	Unlikely
Schaus' swallowtail	*Papilio aristodemus ponceanus*	E	FE	Inhabits tropical hardwood hammocks within a range limited to Key Largo and the islands in Biscayne National Park; continues to be reintroduced throughout the Keys as part of collaborative recovery efforts. Hostplant is torchwood (Amyris elemifera) and occasionally wild lime (Zanthoxylum fagara).	No; Outside of Consultation Area which include barrier islands to south and a small area inland near Virginia Key	Single annual brood that occurs primarily in late spring	Unlikely
Miami blue	*Cyclargus thomasi bethunebakeri*	E	FE	Inhabits tropical hardwood hammocks, tropical pine rocklands, and beachside scrub in Florida. Historically, this species was thought extinct until it was rediscovered in the lower Florida Keys and continues to be reintroduced throughout the Keys as part of collaborative recovery efforts. Hostplants include three primary species: balloonvine (*Cardiospermum* spp.), gray nickerbean (*Caesalpinia bonduc*), and blackbead (*Pithecellobium* spp.).	NA	Populations are capable of producing multiple generations each year between February and November	Unlikely
Florida leafwing	*Anaea troglodyta floridalis*	E	FE	Endemic to south Florida and only occurs within pine rocklands that retain its hotsplant, pineland croton (*Croton linearis*). Today, Everglades National Park is the only place in the world where the Florida leafwing is found.	No; Outside Critical Habitat	Can be found every month of the year, but never in abundance	Unlikely
Miami tiger beetle	*Cicindelidia floridana*	E	FE	Found exclusively in bare or sparsely vegetated sandy areas in pine rockland habitat in Miami-Dade County, Florida. This species was considered extinct until 2007, when a small population was discovered near Zoo Miami. Now it is only known to survive in two separate, very small populations in Miami's disappearing pine rocklands—one in the Richmond Pine Rocklands and another discovered this year a few miles from there and separated by urban development.	NA	The adult flight period lasts approximately 5 months from May-October	Unlikely

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
SNAILS							
Stock Island Tree Snail	*Orthalicus reses reses*	T	FT	Historically found in tropical hardwood hammocks on Stock Island and Key West. Distribution has been artificially extended through introduction to Key Largo and the southernmost parts of the mainland. This species survives best in hammocks with smooth-barked native trees that support large amounts of lichens and algae.	No; Outside Consultation Area	May - November (Mating and nesting occurs in late summer and early fall during the wet season)	Unlikely
PLANTS KNOWN TO OCCUR ON VIRGINIA KEY							
Barbwire cactus	*Acanthocereus tetragonus*		T	Cactus species is found in maritime hammocks and on beaches.	NA	Year-round	Likely
Beachstar	*Cyperus pedunculatus*		E	Slightly succulent perennial herb found on beach dunes.	NA	Year-round	Likely
Silver palm	*Coccothrinax argentata*		T	Tree-like species is in the palm family and is typically found in pine rocklands and coastal hammocks.	NA	Year-round	Likely
Maidenberry	*Crossopetalum rhacoma*		T	Small tropical hardwood tree or shrub species typically found in coastal hammocks and sand dunes.	NA	Year-round	Likely
Beach clustervine	*Jacquemontia reclinata*	E	FE	Perennial vine found on the lee side of coastal dunes.	NA	Fall - Spring	Likely
Beach peanut	*Okenia hypogaea*		E	Small creeping annual herbaceous wildflower occurring on the ocean side of beach dunes and open disturbed sites along the coast.	NA	Spring - Fall; peak flowering summer	Likely
Florida Keys blackbead	*Pithecellobium keyense*		T	Shrub or tree species occurring in hammocks, pinelands, and sand dunes adjacent to beaches.	NA	Year-round; peak flowering spring-summer	Likely
Beachberry	*Scaevola plumieri*		T	Perennial herb or shrub found on beaches and coastal strands.	NA	Year-round; peak flowering summer	Likely
Biscayne prickly-ash	*Zanthoxylum coriaceum*		E	Shrubs or small tree species typically found in coastal hammocks and thickets.	NA	Year-round	Likely

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
SEA GRASSES							
Shoal grass	*Halodule wrightii*			Colonizes disturbed areas where conditions are too harsh for *Tholassia testudinum* and *Syringodium filiforme* to occur. Commonly occurs in estuarine waters, but also forms dense patches in high salinity areas exposed to wave energy or in tidal flats.	NA	June 1 - September 30	Likely
Johnson's seagrass	*Halophila johnsonii*	T	E	Occurs in the coastal waters off the east coast of Florida, from just north of Sebastian Inlet south to Virginia Key in Biscayne Bay. This species has been documented in flood-tidal deltas, muddy basins, sandy shoals, and near canals, tolerating fluctuating salinities and water clarity.	Near; Critical Habitat extends south to northern Biscayne Bay near Virginia Key	June 1 - September 30	Possible
Manatee grass	*Syringodium filiforme*			Occurs in most of Florida's estuaries and tropical coastal waters with salinities of 20-36 ppt. Commonly found growing among other species of seagrass.	NA	June 1 - September 30	Likely
Turtle grass	*Tholassia testudinum*			Typically occurs from low tide level to depths up to 10m on sand and rubble-covered bottoms.	NA	June 1 - September 30	Likely
CORALS							
Staghorn coral	*Acropora cervicornis*	T	FT	Nearshore. Occupies depths of 0-50m, but typically 15-30m on fore-reef communities, bank reefs, and fringing reefs. Requires clear, well circulated water.	Yes; Critical Habitat designation includes waters of Virginia Key	Spawning occurs once per year after the full moon in summer (June - August). Also reproduces asexually	Unlikely
Elkhorn coral	*Acropora palmata*	T	FT	Nearshore. Occupies depths of 0-17m, but typically 1-5m. Requires clear, well circulated water and lives in high-energy zones with a lot of wave action.	Yes; Critical Habitat designation includes waters of Virginia Key	Spawning occurs once per year after the full moon in summer (June - August). Also reproduces asexually	Unlikely

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
MIGRATORY BIRDS OF CONSERVATION CONCERN							
Bald eagle	*Haliaeetus leucocephalus*	BGEPA		Utilizes areas close to the coast, bays, rivers, lakes, or other bodies of water that provide concentrations of food sources; nests in tall trees that provide clear views of surrounding area.	NA; Closest documented nest is 2.5 miles east/northeast; (DA001) last known active in 1987	October 1 - May 15	Possible
Brown pelican	*Pelecanus occidentalis*	MBTA		Primarily coastal, feeding in shallow estuarine waters, and (less often) far offshore; makes extensive use of sand spits, sand bars, and islets for nocturnal roosting and daily loafing; nests on small islands in bays and estuaries, in small bushes or trees, or on ground; mangrove islands are used frequently for roosting and nesting in central and southern Florida.	NA	Fall-Winter	Likely; Colony located on small mangrove island northwest side of Virginia Key
Black whiskered vireo	*Vireo altiloquus*	MBTA		Summer resident in southern Florida occurring in Mangroves and low woods. In Florida, breeds mainly in coastal mangrove swamps, but also in subtropical hardwoods on dry land, sometimes several miles inland.	NA	May 1 - August 15	Unlikely
Common ground dove	*Columbina passerina exigua*	MBTA		Typically found in brushy fields, understory of open pine woods, and forest edges. Nest may be on ground, shrubs, or low trees.	NA	February 1 - December 31	Possible
Dunlin	*Calidris alpina arcticola*	MBTA		During migration and winter this species is widespread in coastal habitats; mainly mudflats, but also sand beaches and rocky shores.	NA	Breeds elsewhere	Likely
Lesser yellowlegs	*Tringa flavipes*	MBTA		Typically more common in freshwater ponds, but during migration is found in coastal estuaries, salt marshes, and freshwater habitats.	NA	Breeds elsewhere	Possible
Magnificent frigatebird	*Fregata magnificens*	MBTA		Found along coasts and islands over warm waters and also far offshore at times. Nests on islands with dense mangroves or other trees or shrubs.	NA	October 1 - April 30	Possible

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
Mangrove cuckoo	*Coccyzus minor*	MBTA		In Florida, this species lives in mangrove swamps and in groves of tropical hardwoods on the Keys and the southern mainland. Nests in mangroves or other low trees among dense foliage.	NA	April 20 - August 20	Possible
Prairie warbler	*Setophaga discolor*	MBTA		Found in flat, grassy lands with scattered trees and bushes in the South in the winter. Likes thick second-growth of hickory, dogwood, hazel, or laurel with blackberry vines. In Florida, breeds in mangrove swamps.	NA	May 1 - July 31	Possible
Prothonotary warbler	*Protonotaria citrea*	MBTA		Occurs in wooded swamps. Winters in the tropics in lowland woods and mangrove swamps. Nests in cavities usually 5-10' above standing water.	NA	April 1 - July 31	Unlikely
Ruddy turnstone	*Arenaria interpres*	MBTA		Mostly coastal in migration and winter, favoring rocky shorelines, rock jetties, or beaches covered with seaweed or debris. May use mudflats for feeding.	NA	Breeds elsewhere	Likely
Seaside sparrow	*Ammospiza maritima*	MBTA		Found in salt marshes along the coast, favoring areas with dense tall growth above level of highest tides and with openings for foraging. Nests in low marsh vegetation in an open cup of grass.	NA	May 10 - August 20	Unlikely
Semipalmated sandpiper	*Calidris pusilla*	MBTA		During migration this species is found along the coast on mudflats, shallow estuaries, inlets, and beaches.	NA	Breeds elsewhere	Likely
Short-billed dowitcher	*Limnodromus griseus*	MBTA		Migrants and wintering birds favor coastal habitats, especially tidal flats on protected estuaries and bays, also lagoons, salt marshes, sometimes sandy beaches.	NA	Breeds elsewhere	Possible
Short-tailed hawk	*Buteo brachyurus*	MBTA		In Florida, mainly uses open country next to woodland, but also found near cypress swamps and mangroves. Trees involved may be pines, cypress, mangroves, or mixed swamp forest, but must have large expanses of open prairie, farmland, or marsh nearby. Typically nests in pine or cypress, usually higher than 25' and often near top of tree but under canopy of foliage.	NA	March 1 - June 30	Possible
Smooth-billed Ani	*Crotophaga ani*	MBTA		In Florida, usually found in dense brush stands next to open fields, pastures, or marshes. Nests communally in dense shrub or tree.	NA	Year-round	Possible

Common	Scientific	Listing Status		Preferred Habitats	Critical Habitat/Consultation Area/Focal Area Intersection	Nesting/Breeding or Survey Window	Likelihood to Occur near Event site
		Federal	State				
Swallow-tailed kite	*Elanoides forficatus*	MBTA		Typically found near wooded river swamps. Requires tall trees for nesting and nearby open country with abundant prey. Nests are usually in tall pines, but have also been found in cypress.	NA	March 10 - June 30	Possible
Whimbrel	*Numenius phaeopus*	MBTA		Most commonly found on mudflats, but also found on rocky shores, sandy beaches, and grassy fields near the coast.	NA	Breeds elsewhere	Possible
Willet	*Tringa semipalmata*	MBTA		Occurs on mudflats, marshes, tidal estuaries, and sandy beaches. Nests in areas of extensive salt marsh along coast.	NA	April 20 - August 5	Possible
Wilson's plover	*Charadrius wilsonia*	MBTA		Only occurs in coastal regions, typically in very open areas such as white sand or shell beaches, estuaries, tidal mudflats. May favor islands, such as offshore barrier beaches.	NA	April 1 - August 20	Possible

State: SSC = Species of Special Concern, T = Threatened, E = Endangered, FE = Federally Endangered, FT = Federally Threatened, FT(S/A) = Treated as Federally Threatened due to similarity in appearance. **Federal:** E = Endangered, T = Threatened, SAT = Threatened due to similarity of appearance, MBTA = Migratory Bird Treaty Act, BGEPA = Bald and Golden Eagle Protection Act.

3.6. Noise

Sound is caused by vibrations that generate waves of minute pressure fluctuations in the surrounding air. Sound levels are typically measured using a logarithmic decibel (dB) scale. Sound that causes disturbance or annoyance, or unwanted sound, is often called "noise." The terms sound and noise are used interchangeably in this analysis.

Human hearing varies in sensitivity for different sound frequencies. The ear is most sensitive to sound frequencies between 800 and 8,000 Hertz (Hz) and is least sensitive to sound frequencies below 400 Hz or above 12,500 Hz. Consequently, several different frequency weighting schemes have been used to approximate the way the human ear responds to noise levels. The "A-weighted" decibel scale (dBA) is the most widely used for this purpose. A list of typical sound levels for example sound sources is presented in Figure 3.6.

Figure 3.6 Sound Levels of Typical Noise Sources (Source: Caltrans 2014)

Varying sound levels often are described in terms of an equivalent constant decibel level. Equivalent sound levels (Leq) are not a simple averaging of decibel values but are based on the cumulative acoustical energy associated with the variable sound levels. Leq values sometimes are referred to as energy-averaged sound levels. As a consequence of the calculation procedure, high dB events contribute more to the Leq value than do low dB events. Leq values are used to develop single-value descriptions of average sound exposure over various periods of time. The Leq data used for average sound exposure descriptors are generally based on A-weighted sound level measurements (expressed as dBA), which include adjustments to the unweighted values to account for the variation in human hearing sensitivity across the audible frequencies.

Certain statistical noise values are sometimes used to describe the allowable sound levels, or limits, at noise-sensitive areas (NSAs). The L1, L10, and L50 statistical noise level descriptors are the noise levels that are equaled or exceeded a stated percentage of the time during a given hour. For example, an L10 = 60 dBA implies that in any hour of the day, a noise level of 60 dBA is equaled or exceeded 10 percent of the time, or for 6 minutes. The L50, the noise level exceeded 50 percent of the time, is commonly known as the "median noise level."

Sound intensity attenuates with distance as it propagates over a larger area, generally in a spherical spreading pattern, away from a point source where the sound waves were generated. Generally speaking, the sound pressure level emitted from a point source decreases by approximately 6 dBA for each doubling of distance from the source. Sound emitted from a line of point sources attenuates in a cylindrical spreading pattern and decreases approximately 3 dBA for each doubling of distance from the source.

3.6.1. Assessment Methodology

This noise assessment has been prepared to predict potential noise impacts on sensitive receptors and land uses from the Event and has been developed using the best information currently available.

The noise assessment included:

- Review of site plans provided by the Event Organizer to identify location and orientation of the stages and speakers;
- Identification of the NSAs and receptors based on a site visit and review of aerial imagery;
- Estimation of the maximum sound power levels of the speakers at the stages based on the draft Revocable License Agreement maximum sound pressure level threshold;
- Predictive modeling to assess noise impacts at the receptors and surrounding lands; and
- Identification of potential noise mitigation and their impact on minimizing potential noise impacts.

In preparing this assessment, conservative assumptions were used in addressing any data gaps as nearby land uses are considered to be sensitive areas.

3.6.2. Affected Environment

3.6.2.1. Sources of Noise

The Event is proposed to consist of up to seven (7) stages on which performances with amplified music can be hosted. Amplified music projected from the speakers at the stages were the only noise sources considered to be significant for the analysis. The location and orientation of the stages is provided in Figure 3.6.2.1 as provided by the Event Organizer.

The configuration and sizes of the stages can vary from each other. Each stage is expected to have one or multiple line array speakers on each side of the stages, as well as flyable or grounded subwoofers. As stage-specific information was limited at the time of this assessment, all seven stages were considered to have the following configuration, unless otherwise noted:

- The location and orientation of the stages are as identified on the site plan provided by the Event Organizer;
- Each stage was assumed to consist of two vertical line array speakers (one array of speakers on each side of the stage);
- The total sound power level of each array speaker was calculated based on the compliance criteria of 110 decibels at 60 feet away from each stage; the calculated sound power level of each line array speaker therefore can be considered to include the sound power levels of any subwoofer that would be installed;

- For all stages except the Main, Live and Resistance stages, each line array speaker was assumed to be located along the edge of the stages. As the Main, Live and Resistance Carl Cox stages appear to be wider than the other stages, the line array speakers were assumed to be positioned on either side of the stage at a distance of 15 m from the center of the stage; and
- The line array speakers for the Arrival stage was noted by the Event Organizer to be located 1 foot above the ground and rising to a height of 10 feet. The line array speaker for all other stages were assumed to be 6 m in height and were assumed to be positioned 4 m above grade and rising to a height of 10 m above grade.

Figure 3.6.2.1 Site Layout

3.6.2.2. Receptors

Five (5) receptors, identified as R1 through R5, were placed on noise-sensitive land uses that are currently used for residential purposes. These residential receptors are located on Fisher Island (R1 and R2), Key Biscayne (R3), downtown Miami (R4) and Brickell Key (R5). Refer to Table 3.6.2.2 for a summary of the receptors and Figure 3.6.2.2-1 for the location of these receptors.

Three additional receptors were placed on the following properties with institutional uses and potentially used for noise-sensitive purposes: University of Miami RSMAS Surge-Structure-Atmosphere Interaction (Sustain) building, assessed as receptor (R6), and the outdoor tanks associated with RSMAS' Experimental Hatchery (UMEH) building, assessed as receptors (R7a and R7b). Refer to Figure 3.6.2.2-2 for the location of these receptors.

The receptor at the Sustain building was placed on the exterior plane of windows to identify the noise impacts along the exterior side of the windows. The predicted impacts inside the building are discussed below in Section 3.6.4.2. The Sustain building was selected as a receptor due to species breeding tanks located inside the building. The UMEH building, located northeast of the Rickenbacker Causeway, contains outdoor above-ground and below-ground tanks that are used for research and commercial hatchery. The UMEH outdoor below-ground tanks have been assessed as receptor R7a at an elevation of 0 m to represent the top of the water surface in these tanks, while the above-ground tanks are assessed as receptor R7b at an elevation of 1.5 m to represent the top of the water surface in these tanks.

To identify the sound levels of the Event on the surrounding natural environment, three (3) additional receptors were placed at the surface of the water, at an elevation of 0 m, and another three (3) receptors were placed near the top of the trees, at an elevation of 5 m, to identify the sound levels from the Event. Refer to Figure 3.6.2.2-1 for the location of these receptors.

Figure 3.6.2.2-1 Model Layout View of Residential Receptors and Modeling Domain

Figure 3.6.2.2-2 Model Layout View of Event Locations and Virginia Key

Table 3.6.2.2. Location of Receptors

Receptor ID	Receptor Description	UTM X Coordinate (m)	UTM Y Coordinate (m)	Height (m)
R1	Fisher Island – Residential Tower – 2nd Floor	585399.85	2849649.51	4.5
R2	Fisher Island – Residential Tower – 2nd Floor	586121.8	2849091.01	4.5
R3	Key Biscayne – Detached House – 2nd Floor	583695.22	2842667.52	4.5
R4	Brickell – Residential Tower – 2nd Floor	581251.13	2849072.61	4.5
R5	Brickell Key – Residential Tower – 2nd Floor	581821.71	2849918.21	4.5
R6	UM-RSMAS – Institutional Building (SUSTAIN) – 2nd Floor	583964.01	2846411.68	4.5
R7a	UM-RSMAS – Institutional Building (UMEH) Below-ground Tanks – Water Level	584276.16	2846496.58	0
R7b	UM-RSMAS – Institutional Building (UMEH) Above-ground Tanks – Water Level	584314.01	2846441.68	1.5
R8	West of Rickenbacker Causeway – Water Level	583095	2847196.35	0
R9	Mouth of Miami Marine Stadium Basin – Water Level	582793.02	2848295.64	0
R10	East Side of Miami Marine Stadium Basin – Forest Top	583542.81	2847863.82	5
R11	South End of Miami Marine Stadium Basin – Forest Top	583994	2847067.44	5
R12	East of Bear Cut Bridge (Rickenbacker Causeway) – Water Level	584459	2846398.28	0
R13	North Side of Virginia Beach Drive – Forest Top	584369.45	2846646.22	5

3.6.3. Acoustic Modeling and Noise Contours

3.6.3.1. Sound Propagation Model

Noise impacts at the NSAs were determined using the computer model known as CADNA-A (Computer Aided Noise Abatement model, Version 4.4.145) and was developed by DataKustik GmbH. The model is based on the International Standards Organization (ISO) Standard 9613-2 "Acoustics – Attenuation of Sound During Propagation Outdoors". The model evaluates the A-weighted sound pressure levels of each noise source at each identified receptor. The ISO-based model accounts for reduction in sound level due to increased distance and geometrical spreading, air absorption, ground attenuation, and acoustical shielding by intervening structures, topography and vegetation. The model is considered conservative since it represents atmospheric conditions that promote propagation of sound from source to receiver.

The absorption of sound by the ground as the sound propagates from the emitting source is influenced by vegetation type, ground cover and the density and height of foliage. Attenuation by ground absorption is inputted into the model based on a numerical value between 0 and 1, where "0" indicates acoustically hard, reflective surfaces, and "1" indicates soft, absorptive ground. A ground absorption coefficient of '1' was used for all soft, grassed areas between the stages and the NSAs, and a ground absorption coefficient of '0' for all other surfaces. Foliage was included in the model at areas consisting of dense woodlots or forests as the dense tree stands, foliage and canopy provide noise attenuation through sound absorption.

The following assumptions were used in the calculations:

- All sources were assumed to be operational simultaneously;
- Wind direction is always considered to be downwind in all directions;
- Lateral diffraction and second order reflection was included in the model;

- Ground absorption was set to 0.0 for reflective ground surfaces and 1.0 for absorptive ground surfaces;
- The model was set to no subtraction of negative ground attenuation; and
- The model was set to no negative path difference.

The above stated assumptions are considered conservative, particularly the assumption of operating all noise sources downwind simultaneously at maximum sound output levels.

3.6.3.2. Model Setup

A three-dimensional noise model was constructed in CADNA-A to incorporate existing and proposed buildings and structures on the site of the Event as well as existing buildings in the intervening areas between the Event site and the receptors.

Buildings and structures from the Event site that were incorporated in the model include any Conex or metal containers that are identified on the Site Plan, as well as the Miami Marine Stadium. As there were minimal details or drawings of the stages and associated structures made available at the time of this assessment, the stages and associated structures were not included in the model with the exception of the Resistance Reflector stage. This is considered conservative since the absence of the shell and structures associated with the stages allows sound to propagate to areas and receptors located to the rear of the stages.

The Resistance Reflector stage structure was modeled to ensure more refined potential impact assessment in the region surrounding that stage. The area downward of the Resistance Reflector stage is proposed to be enclosed by a structure consisting of metal framework lined with fabric and LED screens or lighting features. The fabric was assumed to be similar to a PVC tarpaulin textile material or a PVC-coated polyester material.

All buildings and structures were considered to consist of surfaces that are highly reflective by assigning a reflection loss of 1 dB, which is equivalent to an absorption coefficient of 0.21. This is considered to be conservative as reflected sound, up to two orders of reflection, contributes to impacts at the receptors. The location of stages, speakers, outdoor buildings and structures, as well as areas delineated as absorptive ground and with foliage, are provided in Figure 3.6.2.2-2.

According to the Revocable License Agreement, each stage is not to exceed a sound pressure level of "one hundred ten (110) decibels measured 60 feet from each stage." Clarification was not available as of this assessment on whether the sound pressure level of 110 decibels specified in the agreement is truly intended to be the unweighted sound level or if this was intended to be the A-weighted sound level. This assessment has therefore taken the conservative approach in considering the sound pressure level of 110 decibel to be the A-weighted sound pressure level. A-weighting is the most common approach to community noise impact assessments and compliance criteria.

Although the compliance criteria is based on an overall sound pressure level, the assessment of potential noise impacts requires sound level data across the 1/1 octave band spectrum. As the spectrum shape can vary depending on the music, the 1/1 octave band spectrum shape from the measurement collected by Marchuk and Henry (2016) was applied for this assessment, as shown in Table 3.6.3.2-1. Since the sound levels in the 31.5 Hz and 8000 Hz frequencies were not available from the measurement by Marchuk and Henry (2016), the sound levels at these frequencies were considered to be similar to sound level of the nearest frequency.

Table 3.6.3.2-1 Assumed Spectrum Shape of Music Measured at Front of Stage

Hz	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
dB	110 [2]	110	96	92	94	95	95	89	89 [3]

[1] Marchuk and Henry (2016)
[2] Sound level not provided in the referenced document for 31.5 Hz. Sound level for this frequency was assumed to be identical to 63 Hz.

[3] Sound level not provided in the referenced document for 8000 Hz. Sound level for this frequency was assumed to be identical to 4000 Hz.

For each stage, the maximum permissible sound power level for each line array was calculated based on meeting the cumulative compliance criteria of 110 dBA at 60 feet from the stage. The sound power level of the line arrays vary between 138 dBA and 142 dBA, depending on the distance between the two line arrays at each stage. It should be noted that this calculated sound power level for each line array is considered to the maximum equivalent sound power level of the sources of amplified music, and is based on the consideration that each stage would only have two line arrays. In the event that the stage would consist of additional line arrays and/or subwoofers, the sound power level of the individual line arrays and/or subwoofer would be lower than the sound power levels noted above; however, the cumulative sound power level of all the equipment at the stage is expected to remain constant.

The directivity effect of the line array speakers was also required to be incorporated in the model to account for sound that spreads to the sides and rear of the speaker. Although the line array speakers have both horizontal and vertical directivity, horizontal directivity was considered to result in higher sound levels to the side and rear of the line array speakers relative to vertical directivity effect. As the speakers to be used at the Event were not known at the time of this assessment, directivity characteristics from the manufacturer datasheet of one type of line array speaker was used. The directivity characteristics used as part of this assessment was for line array speaker model SR-H2L manufactured by TOA Electronics; the directivity charts are provided in Figure 3.6.3.2 and are summarized in Table 3.6.3.2-2.

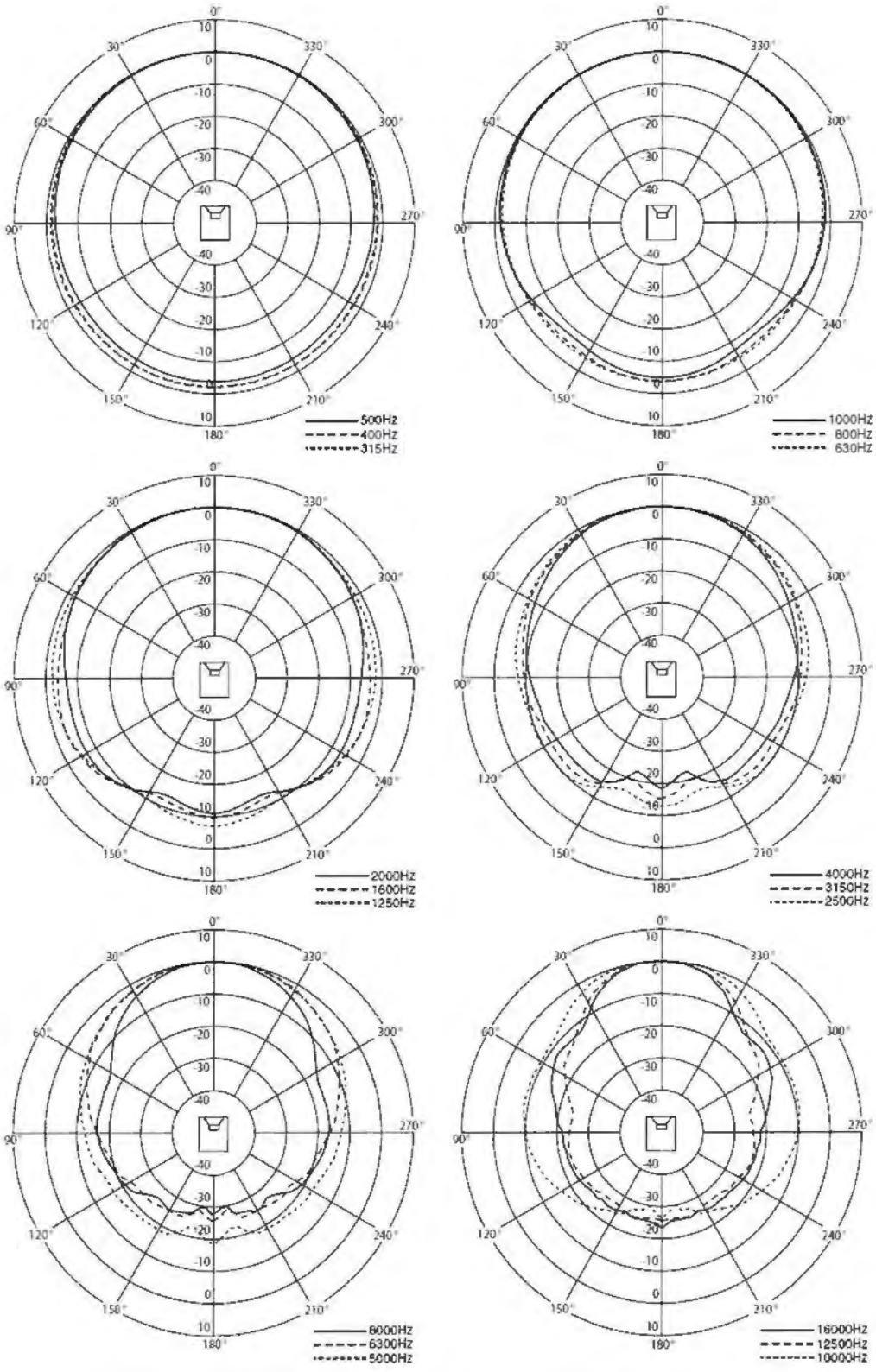


Figure 3.6.3.2 Horizontal Directivity Associated with Line Array Speaker Model SR-H2L (TOA Electronics)

Table 3.6.3.2-2 Directivity Corrections for Line Array Speaker model SR-H2L (TOA Electronics)

Angle (°) in Horizontal Plane from Front of Line Array Speaker	Directivity Corrections [dB] by Octave Band Center Frequency [Hz]								
	31.5 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	-2
30	0	0	0	0	0	0	-1	-2	-5
45	0	0	0	0	0	0	-2	-5	-8
60	0	0	0	0	-1	-1	-3	-7	-15
75	0	0	0	0	-2	-1	-5	-9	-15
90	0	0	0	0	-3	-2	-7	-12	-15
105	0	0	0	0	-3	-3	-7	-15	-18
120	0	0	0	0	-4	-5	-8	-15	-20
135	0	0	0	0	-4	-7	-8	-15	-25
150	0	0	0	0	-4	-7	-12	-15	-25
165	0	0	0	0	-4	-5	-13	-22	-27
180	0	0	0	0	-4	-5	-11	-18	-27

3.6.4. CADNA-A Model Results and Discussion

Unmitigated Scenario

The modeled unmitigated noise impacts, based on the assumed worst-case operational scenario, are summarized in Table 3.6.4-1 for each of the previously described receptors. Sound level contours showing the cumulative noise impacts from the Event are presented in Figure 3.6.4-1 for the surrounding areas of Virginia Key and in Figure 3.6.4-2 for the surrounding areas of the Miami Marine Stadium.

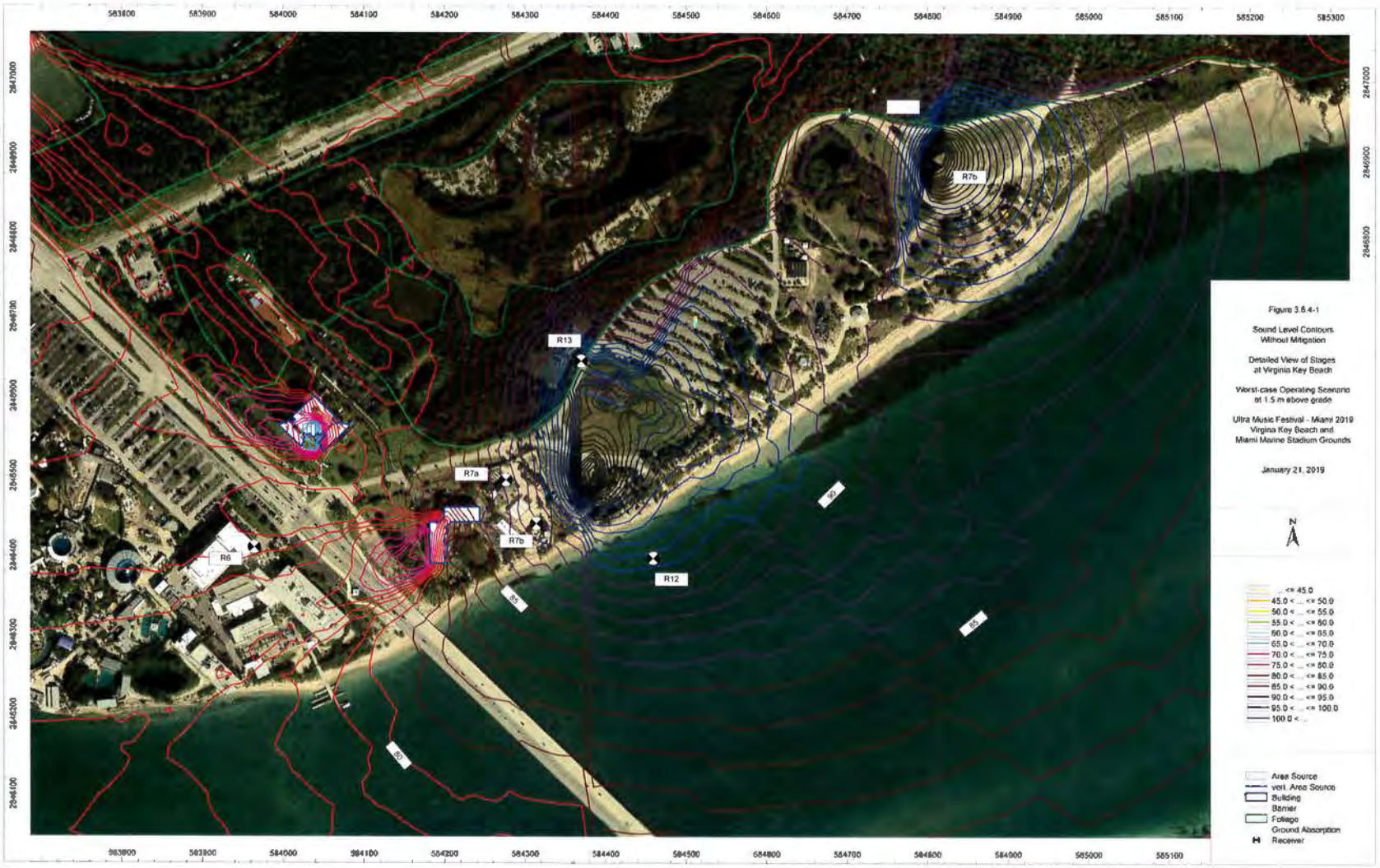


Figure 3.6.4-1 Sound Level Contours – Worst-case Operating Scenario at 4.5 m Above Grade

Figure 3.6.4-2 Sound Level Contours – Worst-case Operating Scenario at 4.5 m Above Grade

Table 3.6.4-1 Predicted Unmitigated Noise Impacts at Receptors

Receptor ID	Receptor Description	Noise Impacts (dBA)
R1	Fisher Island – Residential Tower – 2nd Floor	65.9
R2	Fisher Island – Residential Tower – 2nd Floor	67.1
R3	Key Biscayne – Detached House – 2nd Floor	61.7
R4	Brickell – Residential Tower – 2nd Floor	67.6
R5	Brickell Key – Residential Tower – 2nd Floor	65.1
R6	UM-RSMAS – Institutional Building (SUSTAIN) – 2nd Floor	78.1
R7a	UM-RSMAS – Institutional Building (UMEH) Below-ground Tanks – Water Level	88.3
R7b	UM-RSMAS – Institutional Building (UMEH) Above-ground Tanks – Water Level	88.8
R8	West of Rickenbacker Causeway – Water Level	92.2
R9	Mouth of Miami Marine Stadium Basin – Water Level	78.6
R10	East Side of Miami Marine Stadium Basin – Forest Top	83
R11	South End of Miami Marine Stadium Basin – Forest Top	81.3
R12	East of Bear Cut Bridge (Rickenbacker Causeway) – Water Level	92.6
R13	North Side of Virginia Beach Drive – Forest Top	97.4

Mitigated Scenario

Based on the results of the unmitigated noise impacts, the following noise mitigation have been proposed to reduce the noise impacts at RSMAS and the surrounding environments from the Event:

1. Sound curtains or panels should be installed along the fenceline at the northeastern property boundary of the RSMAS' UMEH, or in the immediate proximity of the UMEH hatchery tanks. The sound curtains/panels will provide the benefits of both a noise barrier and a sound absorber and are recommended to have the following acoustical performance:

	Octave Band Centre Frequency								Overall Rating
	63	125	250	500	1000	2000	4000	8000	
Transmission Loss	--	29	33	38	40	56	61	38--	STC 38
Absorption Coefficient	--	0.29	0.99	0.96	0.80	0.57	0.33	--	NRC 0.85

The sound curtains/panels should have a minimum surface density of 2 lbs psf (10 kg/m^2) and be installed to an approximate height of 15 feet along the western part of the northern RSMAS boundary and to an approximate height of 20 feet along the remaining portion of the RSMAS property boundary, as recommended to shield raised hatchery tanks. Heights may be lower if sound curtains/panels are placed closer to RSMAS hatchery tanks. The sound curtains/panels should be installed in a continuous manner without any gaps, cracks or holes.

2. The rear end of the Resistance Carl Cox and Resistance Reflector should be installed with sound curtains/panels to minimize sound radiating towards the rear of these stages.

The modeled noise impacts, incorporating the noise mitigation measures outlined above, are summarized in Table 3.6.4-2 for each of the previously described receptors. Sound level contours showing the cumulative noise impacts from the Event are presented in Figure 3.6.4-3 for the surrounding areas of Virginia Key and in Figure 3.6.4-4 for the surrounding areas of the Miami Marine Stadium

Table 3.6.4-2 Predicted Mitigated Noise Impacts at Receptors

Receptor ID	Receptor Description	Noise Impacts (dBA)
R1	Fisher Island – Residential Tower – 2nd Floor	65.5
R2	Fisher Island – Residential Tower – 2nd Floor	67.1
R3	Key Biscayne – Detached House – 2nd Floor	61.5
R4	Brickell – Residential Tower – 2nd Floor	67.5
R5	Brickell Key – Residential Tower – 2nd Floor	65
R6	UM-RSMAS – Institutional Building (SUSTAIN) – 2nd Floor	76.7
R7a	UM-RSMAS – Institutional Building (UMEH) Below-ground Tanks – Water Level	81.5
R7b	UM-RSMAS – Institutional Building (UMEH) Above-ground Tanks – Water Level	83.2
R8	West of Rickenbacker Causeway – Water Level	92.2
R9	Mouth of Miami Marine Stadium Basin – Water Level	78.6
R10	East Side of Miami Marine Stadium Basin – Forest Top	83
R11	South End of Miami Marine Stadium Basin – Forest Top	80.9
R12	East of Bear Cut Bridge (Rickenbacker Causeway) – Water Level	92.6
R13	North Side of Virginia Beach Drive – Forest Top	96

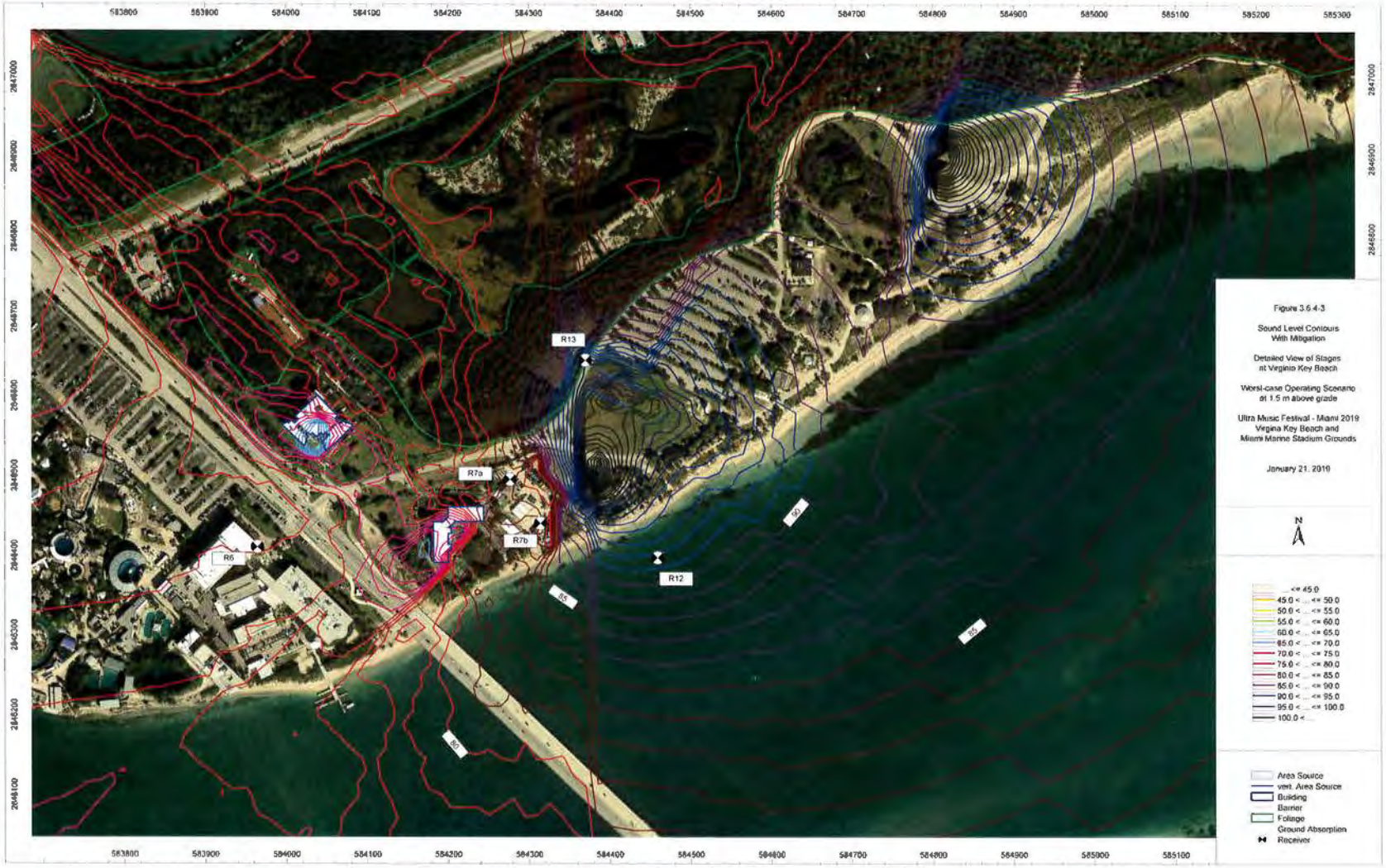


Figure 3.6.4-3 Sound Level Contours – Mitigated Operating Scenario at 4.5 m Above Grade

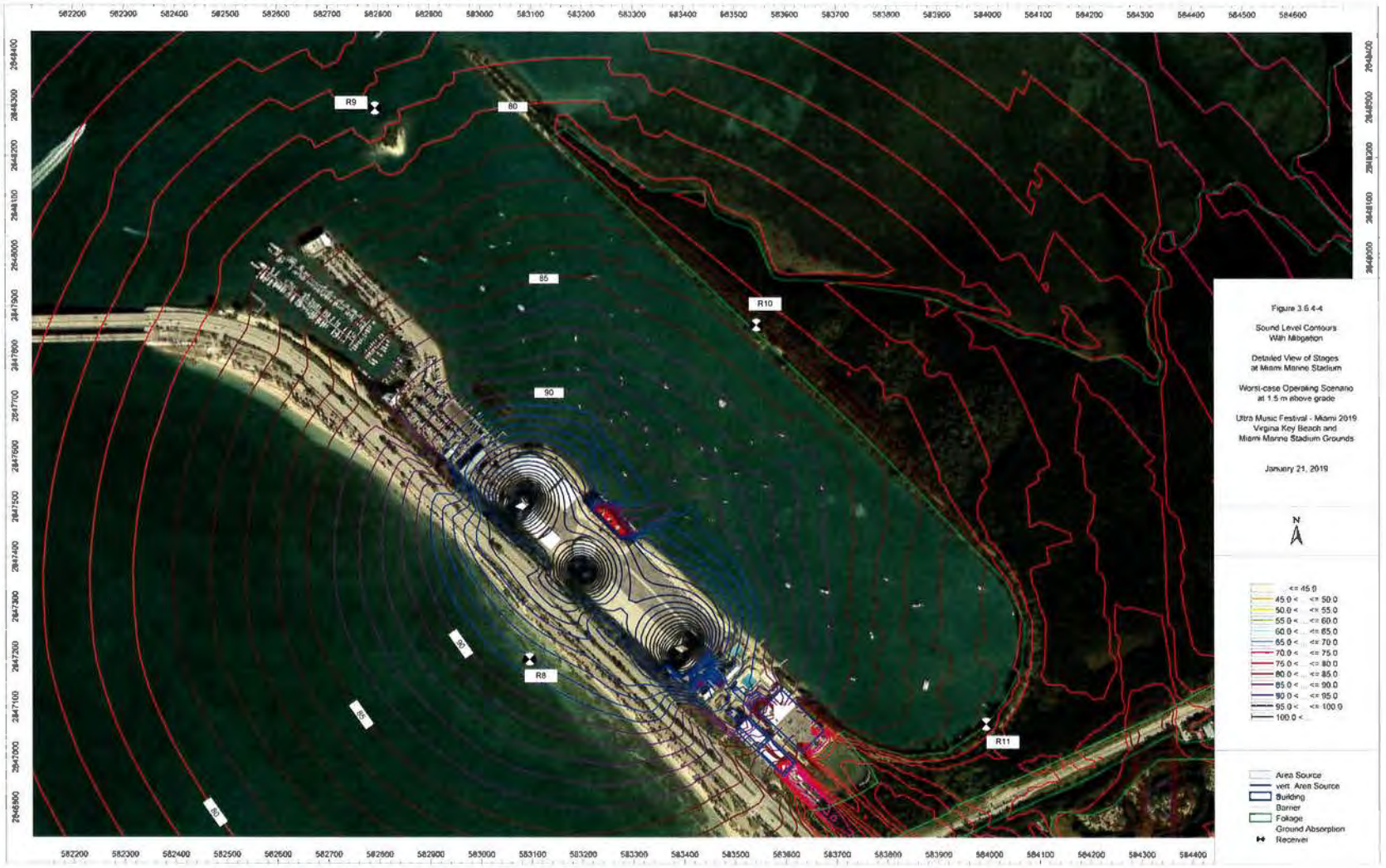


Figure 3.6.4-4 Sound Level Contours – Worst-case Operating Scenario at 4.5 m Above Grade

3.6.4.1. Noise Impacts to Residents

The modeled noise impacts at the residential receptors (R1 through R5) vary from 61.5 dBA at receptor R3 and 67.5 dBA at receptor R4 under the mitigated operational scenario.

Sound impacts from concerts that are between 60 dBA and 70 dBA would be noticeable but generally in-line with guidance for outdoor musical concerts and special events. A detailed 2016 study (Marcuk and Henry 2016) of outdoor music event noise criteria indicates that noise criteria tends to be set in the 65dBA to 70dBA range for outdoor noise levels at a residential receptor. This is consistent with the modeled impacts associated with the Event.

Refer to Table 3.6.4-2 for the mitigated maximum sound pressures from the Event at the nearest residential receptors. These results are considered conservative as all seven stages are considered to be hosting events simultaneously with each stage producing the maximum permissible sound pressure level of 110 dBA at 60 feet from each stage. The model was run under weather conditions most favorable for sound propagation.

Additionally, with the exception of the Resistance Carl Cox and Resistance Reflector stages, the current modeling results are based on the consideration that the stages and associated structures do not act as a barrier to block any noise that radiates toward the rear of the speaker due to the directivity. This is most evident with low frequencies since there is generally lower control of directivity for low frequencies and bass frequencies radiate in all directions, as shown by the directivity correction in Table 3.6.3.2. The presence of a shell or other structures around the Live stage's line array speakers would reduce the noise radiating back to the rear, and is predicted to decrease the noise impact at R4 by approximately 2 dB from 67.58 dBA to 65.5 dBA.

Although each stage shall not exceed the maximum sound pressure level of 110 dBA at 60 feet, it is also likely that only the large stages, such as the Main and Live stages, would be capable of approaching this criteria, while the smaller stages are likely to generate lower sound levels. The current assessment is based on all seven stages producing sound levels matching the maximum sound level permitted. A refined assessment using the realistic maximum sound levels that would be generated by the smaller stages would identify noise impacts lower than this assessment.

3.6.4.2. Noise and Vibration Impacts to UM-RSMAS

The mitigated noise impact at the exterior façade of the RSMAS Sustain building is modeled to be 76.7 dBA. As the fish breeding tanks are located within the Sustain building, the potential noise impact on the breeding tanks would be attenuated by the construction materials constituting the building's walls and windows. Typical construction materials attenuate noise by a minimum of 25 dB assuming no building openings are present (like open windows). Assuming typical building attenuation, the interior impacts at the Sustain building would be approximately 51.7 dBA. These are sound pressures that are consistent with indoor office conditions and would not be likely to produce adverse impacts.

Due to proximity, the potential noise impacts at the exterior façade of the UMEH outdoor aquaculture and experimental breeding tanks, as well as above the surface of the water, were predicted to be approximately 88.8 dBA under the worst-case (conservative) assessment without any mitigation. Based on the commitments by the Event Organizer for mitigation described in Section 3.6.4, the worst-case potential impacts on the UMEH outdoor tanks would be reduced to 83.2 dBA. These potential impacts are predicted to be consistent with or lower than impacts that have occurred at the UMEH facility as a result of previous amplified music events held at the HVKBP.

In addition to atmospheric sound pressure, concerns regarding noise induced vibration have been considered by the Event Organizer. Noise induced vibration can be generated as a result of two separate processes. The first represents the impacts of atmospheric sound pressure waves on a structure (like the UMEH breeding tanks) and the other represents the transmission of ground material acceleration caused by direct contact of the amplified speakers and the ground surface. In order to address these concerns, the Event Organizer is proposing to implement the following mitigation strategies.

1. In order to reduce the first process (atmospheric sound pressure induced vibration), the Event Organizer is proposing the sound reflection and absorption methods described in Section 3.6.4.
2. In order to reduce the second process (ground material vibration impacts), the Event Organizer is proposing to limit all direct speaker ground contact for the two stages nearest to the UMEH facility. This will be accomplished by elevating speakers (particularly subwoofers) on platforms that have been lined with rubberized absorptive mats to reduce vibration transmission or directly suspending speakers from elevated portions of the stage structures.

3.6.4.3. Noise Impacts to Surrounding Natural Areas

The mitigated noise levels at the water surface were assessed at a distance of 50 m from the beach or shoreline as manatees were not considered to likely be closer than 50 m from the beach or shoreline. The maximum potential noise impacts at the water surface was predicted to be between 79 dBA and 93 dBA based on the conservative operating assumptions considered as part of this assumption.

Due to the proximity of the Resistance Reflector stage to the wooded area located on the north side of Virginia Beach Road, the potential noise impacts near the top of the trees at the edge of this wooded area is predicted to be 96 dBA. The potential noise impacts at other forested areas from the cumulative operation of all the stages are predicted to be around 80 dBA. The impacts at the wooded area neighboring the Resistance Carl Cox stage will be similar to the impacts noted above from the Resistance Reflector stage.

Public scoping meetings highlighted a general noise threshold of concern of 85 dBA for nesting birds. This threshold contour was specifically identified in Figure 3.6.4-1 and 3.6.4-3 to show the extent of potential impacts above 85 dBA. In review of the noise impact contours, 85 dBA and above generally occurs within an approximate radius of 200 m from the stages. The proposed noise mitigation measures assisted in minimizing the sound impacts at sensitive locations, particularly within close proximity to the Resistance Carl Cox and Resistance Reflector stages.

3.6.4.4. Sub-Surface Noise Impacts in Water

Sounds reaching the RSMAS receptors R7a and R7b could potentially reach 83.2 dBA as a maximum mitigated aerial noise (noise transmitted through the air). It is important to note, however, that negligible underwater impacts would be expected based on the physics of aerial noise transmission into water and other media.

The Dean of RSMAS has expressed concern that acoustic noise from the Event may significantly impact the behavior, reproduction, and survivorship of various fish species housed at the research facility, and cited an unpublished OceanCare report (Weilgart 2018) in support of that opinion. A clear distinction between the impacts of typical subsurface noise sources and the Event's aerial sources needs to be recognized and not conflated. For example, the OceanCare report and its cited literature on negative effects to fish and invertebrates are all based on water-generated noises such as ship/boat propellers, pile driving, seismic airguns, sonar, explosions, and other underwater sources. Sound that is generated underwater is different than aerial sounds transmitted above the water, as the latter potential impacts would be negligible at the levels generated from amplified concert music.

There would be extremely low transmission of aerial sound through both the water's surface at the holding tanks and through its vessel walls. With regard to surface transmission from aerial noise into the water itself, the surface of water is almost a perfect reflector of aerial sound. Published literature [1](Peng and Zhang 2016) indicates that approximately 1/3600 of aerial sound penetrates the water surface, which is equivalent to a few hundreds of 1% of the atmospheric sound pressure. Sound waves from Event stages would also be traveling relatively parallel, not perpendicular, to the surface water in the tanks, so little sound energy is available for penetration into the water.

[1] A review of research progress in air-to-water sound transmission

The sides of the holding tanks where sound waves may be perpendicular will also greatly attenuate sound transmission into the tanks. The tank material is primarily insulated and uninsulated fiberglass with thicknesses from ½ inch to 2.5 inches. The fiberglass material produces both noise reflection and transmission loss, both of which would reduce impacts significantly for the aquatic environment within the tanks.

Finally, for a contextualization of impacts on RSMAS and the surround area, the HVKBP has hosted numerous amplified concert events in recent years (Table 1.4.4). Many of these events contained license agreement language regarding noise impacts that were the same as the thresholds proposed for the Event. The resultant impacts from these events have not previously been raised as a concern of the RSMAS, nor has a negative impact from these events been documented.

3.6.5. Additional Potential Mitigation Measures

Should additional noise mitigation be sought by the Event Organizer, noise impacts at the receptors can be reduced through implementation of one or more of the following measures:

- Sound System Selection: A sound system that provides greater directivity control, particularly at the bass frequencies, can minimize noise impacts at receptors. Other frequency band ranges could be strategically lowered to reduce impacts.
- Position of Speakers Closer to Ground: For smaller stages where smaller crowds are likely to congregate, the speakers can be positioned closer to the ground to increase the attenuation of the sound waves through absorption (i.e. by the ground), refraction and reflection.

3.7. Litter Control

The Event Organizer has developed a Litter Control Plan for the Event. The plan outlines waste remediation and mitigation procedures for the entire span of the Event, including construction (March 11 – March 28, 2019), the Event (March 29 – March 31, 2019), and deconstruction (April 1 – April 14, 2019).

3.7.1. Recycling, Landfill and Composting

Event Organizer is committed to becoming a more environmentally sustainable production and as a result has reinvented its own internal system by introducing a comprehensive recycling and composting program at the 2019 Event. This program will be staffed by environmental organizations that will assure proper waste separation and disposal while educating attendees. Commencing in 2019, the Event Organizer will make available, encourage, and promote hydration stations and Event reusable drinking bottle options and other similar solutions in an effort to reduce the use of one-time single-use plastic water bottles. Further, the Event's proposed comprehensive recycling and compost plan program is being developed for implementation at the 2019 Event which will contribute to the reduction in municipal waste. The Event's proposed comprehensive recycling plan will be in accordance with Section 22-18 of the City Code.

The Event's recycling and composting program will divert a significant portion of the waste that historically went entirely to landfill, while educating attendees on proper waste disposal. In addition, the banning of polystyrene and plastic straws as well as single-use plastic mitigation efforts such as new vendor requirements, reusable water bottles and an expanded water refill station program, will significantly reduce overall waste and particularly focus on reducing non-recyclable or non-compostable waste.

The Event Organizer will employ the use of recyclable containers deployed throughout the Venues. Clean-up crews will also sort regular trash into recyclable containers, to the best of their ability. Additionally, the Event Organizer has entered into a series of memorandum of understanding with non-profit organizations to undertake the following sustainability and environmental initiatives: no beach access to Event patrons, no polystyrene products or plastic straws, no balloons, education and awareness programs available at the Event, including recycling waste bins for recyclable materials, landfill, and compost, completion of site restoration obligations prior to the beginning of sea turtle nesting season, and adopting a "leave no trace" policy for Event patrons.

3.7.2. Portable Toilets

Portable toilets and hand washing facilities will be provided during the Event to accommodate the 180,000 anticipated attendees during the course of the three-day Event, as required by the Florida Department of Health (FDOH) 64E-6.0101 Portable Restrooms and Portable or Sanitary Holding Tank. By definition portable restrooms are a transportable, self contained, static or flush-type toilets constructed to promote a sanitary environment at special events. To ensure sanitary conditions and to avoid overfilling, portable toilets will be pumped out a minimum of once a day and will be moniored for spillage or leakage. In the event that a portable toilet is no longer serviceable it will be closed immediately and a contracted company will be contacted to remove the waste. A minimum of 432 portable toilets will be required to accomadate the anticipated 60,000 attendees per day as required by statue 64E-6.0101. Portable restrooms and hand wash stations will be located at high density gathering areas at both the Miami Marine Stadium and the HVKBP locations.

Portable toilets and hand wash stations, within the Miami Marine Stadium, will be located just north and east of the Food pavilion and immediately adjacent to Bar 9 and Bar 4. Portable toilet and hand wash station locations within the HVKBP will be provided east of Bar 1, Food 1, and Resistance Reflector with additional portable toilets and hand wash stations located east of the Resistance Carl Cox stage. Portable toilet locations are intentionally positioned in existing grass parking areas, adjacent to existing roads, away from identified sensitive habitats, away from stormwater drains or inlets, and 100 feet away from wetlands or coastal waters to decrease potential environmental or heath concerns. The Event will pump out and clean portable toilets daily at a minimum. If spillage occurs the area will be immediately secured, the toilet will be closed and the area cleaned immediately to prevent environmental or health related issues.

3.8. Historic and Cultural Heritage

3.8.1. Affected Environment

3.8.1.1. Cultural Heritage

Paleoindian:

The earliest radiocarbon dates firmly associated with human artifacts indicate humans were living in north Florida by at least 11,000 BP, during the Clovis phase of the Early Paleoindian subperiod (Hemmings 2004). This was during the Clovis phase of the Early Paleoindian subperiod. Evidence of human habitation of south Florida during the Paleoindian period is more sparse, and settlement of the Everglades does not seem to have been widespread until the emergence of relatively modern climatic and hydrological regimes around 5,000 BP (Ardren et al. 2016, Barnhardt 2011, Schwadron 2006). Some human remains were recovered from a fossil bed containing Pleistocene fauna at the Vero Man site, located north of the study area in Indian River County in 1915-1916 (Sellards 1916). Indirect dating of these human remains and an engraved faunal bone based on rare earth mineral uptake confirmed their Pleistocene ages (McFadden et al. 2012, Purdy et al. 2011). Similar Pleistocene fossil beds along the central portion of Florida's Atlantic coast near Melbourne have produced human remains as well, and the Cutler Fossil site (8DA2001) in Miami-Dade County has produced lithic tools, features, and human remains in context with late Pleistocene fauna (Wheeler 2004). Recent work at the Vero Man site has sought to provide greater insight into Paleoindian settlement and exploitation of this region, but unequivocal evidence of human activity such as tools remain elusive. Small numbers of Late Paleoindian projectile points have been recovered from tree islands in the eastern Everglades near Hollywood and Weston, suggesting at least some utilization of the landscape during this time, perhaps as a short-term stop during seasonal migrations (Carr 2002).

Archaic:

The Archaic Stage in Florida dates from 9,500 to 2,500 BP and consists of three parts: Early (9,500 to 7,000 BP), Middle (7,000 to 5,000 BP), and Late (5,000 to 2,500 BP). The distinction between each period is based primarily on stylistic changes in projectile points and the addition of fiber-tempered pottery in the Late Archaic (Milanich 1994, Milanich and Fairbanks 1980). Archaic sites are found throughout the

state. Like some Paleoindian sites, many Archaic sites are now submerged and are located on the continental shelf off of the coast of Florida.

In contrast to the earlier Paleoindian and Early Archaic periods, the Middle and Late Archaic periods saw stabilizing sea level and climate approaching modern conditions, albeit with periodic fluctuations. Wetter conditions provided a greater number of water sources, including large river systems and wetlands not seen before 8,500 BP (Watts and Hansen 1988). This led to a marked increase in the exploitation of shellfish resources throughout much of the southeast, which in turn led to the appearance of the first shell middens. These early shell sites are especially prominent throughout the river basins of the midcontinent, where they reached monumental proportions (Claassen 2010). The earliest earthen monuments in the southeast also date to this period (Gibson and Carr 2004). Lithic points crafted during the Middle Archaic are generally stemmed and are part of a larger stone tool assemblage, including scrapers, drills, choppers,, flake knives, and hammerstones, which does not vary much during the Archaic Stage (Milanich and Fairbanks 1980, Purdy 1981).

Everglades:

Post-Archaic cultural phases in the Glades area, including the project area, are encompassed by the Glades tradition, originally defined by Goggin (1949:28) and described as "based on the exploitation of the food resources of the tropical coastal waters, with secondary dependence on game and some use of wild food plants. Agriculture was apparently never practiced, but pottery was extensively used." The Glades tradition is identified archaeologically beginning around 2,500 BP, coinciding with the replacement of fiber-tempered ceramics by sand-tempered varieties (Carr et al. 2013). Goggin (1949) divided the Glades tradition into three phases based on ceramic types, naming them Glades I through III. Recent research has demonstrated that Goggin's original description of the Glades tradition needs some amendment to include a primary focus on freshwater river courses, sloughs, and marshes throughout the interior Everglades and near the Atlantic coast. A regional summary of Glades period settlement patterns in southeastern Florida revealed that a large proportion of sites in the area are located within the Ridge and Slough area to the west of the Atlantic Coastal Ridge (Callsen 2008). Zooarchaeological remains from some Glades sites represent subsistence practices focused on the exploitation of freshwater fish (Fradkin 2015), turtles and other wetland reptiles, and relatively minor amounts of terrestrial game and coastal resources.

Historic period:

The following information concerning the history of Virginia Key, the creation of the HVKBP, and the construction of the Miami Marine Stadium is taken from the local designation and NRHP designation reports on file with the City of Miami, the Florida Division of Historical Resources, the National Register of Historic Places, and the National Archives and Records Administration (Cole and Goodwin 2002, Novaes 2013, Hernandez 2008, Imberman and Nickless 2017). Information was also incorporated from the HVKBP Master Plan prepared by Wallace, Roberts, & Todd in 2003 and the Virginia Key Master Plan prepared by the City of Miami in conjunction with consultants EDSA, ATM, BRV, REG Architects, ERA, Consul-Tech, Carter & Burgess, and CDM in 2010 (Wallace, Roberts, & Todd 2003; City of Miami 2010).

Likely separated from the mainland as a result of an 1835 hurricane, Virginia Key was first surveyed and named in 1848 by Frederick H. Gerdes of the Army Corps of Topographical Engineers. It was platted in 1870 and placed under the jurisdiction of the U.S. Department of the Interior. For years, the island would be transferred between the Department of the Interior and the Department of War. Between 1902 and 1909, the Government Cut and the City of Miami's project to deepen it to create a deep water port for Miami changed the oceans currents around the island; as a result, Virginia Key grew in size due to changes in the natural tidal flow and the dumping of excavated sand (Cole and Goodwin 2002).

Under segregation and the network of state and local statues known as the Jim Crow laws upheld by the Supreme Court in 1896, African Americans were denied access to city and county parks and beaches in Dade County; the closest public beach facilities for African Americans were in Broward County with the cost and distance limiting visitation by Miami residents. Although a 1917 U.S. Coast Survey indicated that a "Negro Dancing Pavilion" existed on Virginia Key, it was an active target range for the U.S. Navy during World War I and was noted as deserted and devoid of signs of human occupation. However, by the 1920s, it was common knowledge that African American residents of Miami used the beaches of Virginia Key to

swim along the shores of Bear Cut (later known as Beers Cut). As the waters were dangerous and the beach isolated, the police and political leaders did not object (Cole and Goodwin 2002).

Virginia Key provided many local African Americans with their first beach experience. More than just a visit to a beach, Virginia Key served as a site for baptism, church picnics, and family reunions. In 1924, the State of Florida acquired Virginia Key and eventually transferred it to the Dade County Board of County Commissioners. Even though periodically proposed for luxury residences or planned communities in the 1920s and 1930s, the northern and western sections of the island became the city dump. In the 1930s, a small group of settlers built huts on the public beach at the north end of Virginia Key. As war in Europe raged in the late 1930s and the U.S. appeared destined to be involved, the U.S. Navy approved plans for development of the 1,200-acre Virginia Key Harbor Project. By 1941, a causeway from the mainland was under construction with improvements funded by the new Miami Greater Area Port Authority. However, construction on the causeway stalled with the U.S. entry into World War II. In 1944, the Dade County Board of County Commissioners provided permission for the Navy to use Virginia Key for training African Americans as the segregated beaches in the County could not be used. Some of the inland fill areas in the park likely date to this period of use as training fields. Treatment of African Americans who were defending the nation but had to be housed in separate hotels, unable to access amenities available to white servicemen, caused many to question segregation. By then, Virginia Key was a well-known, if unofficial, Negro beach (Cole and Goodwin 2002, Wallace, Roberts, & Todd 2003).

In 1945, Reverend John Culmer, dentist Ira Davis, and attorney Lawson Thomas formed the Negro Service Council (NSC; later known as the Urban League of Greater Miami). Knowing that recent U.S. Supreme Court decisions had ruled that segregation of public parks was unconstitutional, the trio organized a "wade in" at a local white beach. They wanted to force the arrest of blacks who used facilities at a white beach so that Lawson could defend the residents in court and force Dade County to provide bathing facilities for African Americans. Five members of the NSC joined by two or three African American servicemen met at the selected white beach: Baker's Haulover. However, Dade County Sherriff Jimmy Sullivan ordered his deputies not to arrest the swimmers because it would be indefensible in court. Instead, he consulted with County Commissioner Charles Crandon and arranged a meeting between Reverend Culmer and Thomas where it was agreed that the south side of Virginia Key would become a designated Negro beach. It would be hailed as the start of the civil rights movement in Miami (Cole and Goodwin 2002, Novaes 2013).

The original structures installed at the beach were in place within two months, likely because they were surplus military buildings no longer in use following the war. The park was dedicated on August 1, 1945 when it was advertised in a brochure as "'South Florida's only improved park for the exclusive use of Negroes'" (Cole and Goodwin 2002). Attendance on the weekend averaged around 1,100 individuals. Churches held sunrise services, conducted baptisms, and celebrated with picnics. Three daily ferries shuttled beach goers until the completion of the Rickenbacker Causeway in 1947. In 1948, the County completed a beach re-nourishment project following damage from a winter storm. A paved access road and a 1,200 unpaved parking lot were added along with 12 cabanas and a house for the Park Superintendent. Most of the original structures were destroyed by a hurricane in 1950, leading to the construction of more permanent facilities over the following few years. The new facilities were designed to provide identical amenities to those at the whites-only Crandon Park. By 1953, a carefully designed paved entrance drive, a paved parking lot for 660 cars, a concession stand, picnic pavilions, a boat launch, a bathhouse, a park office, a house for the park superintendent, and a small restroom building were completed. A concrete dance floor surrounded by coconut palms served as the dance pavilion. A carousel identical to the one at Crandon Park and a miniature train ride encircling a man-made lake complete with a tunnel and depot were installed between 1952 and 1958 to entertain the children. Beach sand and wooden groins were installed along the western portion of the shore following the 1950 storm (Figure 3.8.1.1; Cole and Goodwin 2002, Wallace, Roberts, & Todd 2003).

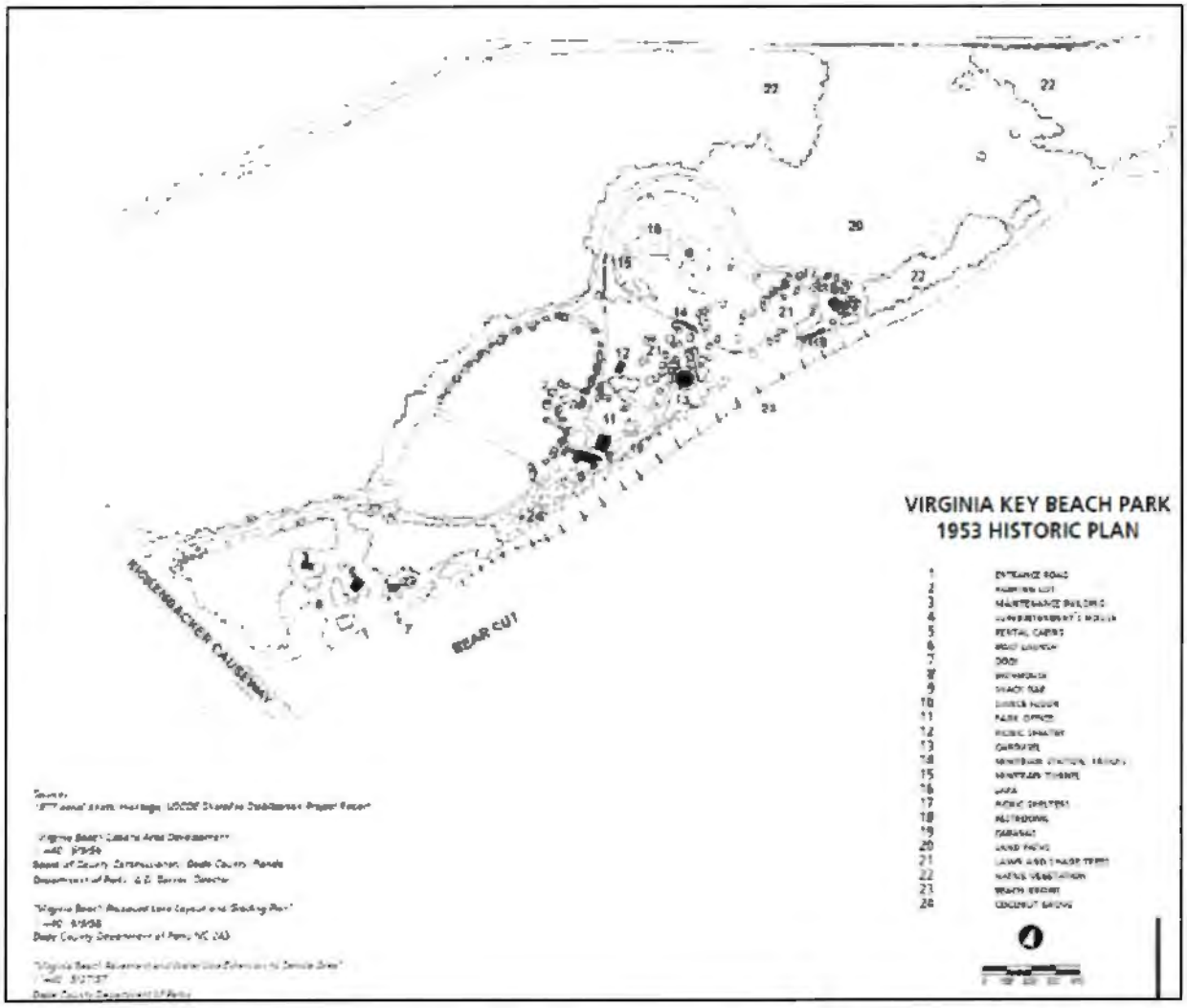


Figure 3.8.1.1 1953 Virginia Key Beach Park Plan (Wallace, Roberts, & Todd 2003).

Their success in prompting the county to create and pay for HVKBP inspired black Miamians to fight for desegregation of other recreational facilities, subdivisions, commercial establishments, and schools. In 1959, African American leaders successfully integrated Crandon Park, the white park on Key Biscayne which was a mirror image of HVKBP. Unable to justify segregation of public facilities, the integration of private institutions slowly followed (Cole and Goodwin 2002)

Following the end of World War II, the nation entered a period of prosperity and growth. Many veterans who had trained in the Miami area during the war, returned to build homes after the end of hostilities using the G.I. bill. The creation of inexpensive air conditioning also facilitated year-round living in the tropical climate. Tourism boomed with the development of Miami as an aviation hub providing both national and international flights due to its location. As a result, Miami grew into an international city with ties to Latin America during the post-World War II era. In order to enhance that engagement, Miami focused on the creation and construction of institutions and venues to foster these connections. By the early 1960s, Miami consciously pursued modern architectural styles to promote its new status. Miami Marine Stadium was part of the City's mid-century civic and infrastructural efforts to improve trade and cultural connections by capitalizing on its unique resources (Imberman and Nickless 2017).

In 1962, the City of Miami hired Chicago architect Ralph H. Burke, who had been involved in planning Chicago's O'Hare Airport, to design a master plan for a Miami Marine Stadium. The project involved dredging a basin based on the shape of the Circus Maximus in ancient Rome and constructing a

grandstand along the water for observing the events in the basin. The Miami Marine Stadium would be the first to combine such a basin with a waterside grandstand. While the plan determined the location and orientation of the stadium, the City then hired a local engineering firm, Norman Dignum Associates, to lead in creating the actual design. They partnered with the architectural firm of Pancoast, Ferendino, Grafton, Skeels, and Burnham. Jack Meyer led the engineering team, while Cuban-born architect Hilario Candela headed the architectural design. Candela's design called for the use of cantilevered thin shelled concrete folded-plate roofs which required extensive calculation and innovation by Meyer to safely construct. The grandstand was designed to accommodate 6,500 attendees (Imberman and Nickless 2017, Hernandez 2008).

Named for Coconut Grove founder and yacht designer Commodore Ralph Munroe, the Miami Marine Stadium opened on December 27, 1963. The overall design was complete, but the City of Miami had failed to provide the infrastructure necessary to utilize the property to its fullest capacity. The grandstand lacked implements to host non-boating events until a professional floating bandstand was installed in 1965. Although built for boat racing with the aquatic version of a traditional stadium racetrack, it soon hosted a variety of entertainment events including concerts, opera, political rallies, Easter sunrise services, and sporting events like wrestling and boxing matches. Performers played from a floating stage while the audience watched from either the grandstand or from private boats. The local landmark nomination describes it as "a social, cultural, political and economic reflection of the City of Miami" (Hernandez 2008:7). It was one of the premier event venues in Miami until it was closed following Hurricane Andrew in 1992. Within a year of construction, the grandstand had started to leak with non-structural cracks damaging the perceived safety of the structure. An engineering study by Simpson Gumpertz & Heger, Inc. in 1993 (Iberman and Nickless 2017) revealed that the structure was still sound and not significantly damaged by the hurricane, but the facility remained closed. A subsequent engineering study in 2009 found that repair would be expensive but was feasible. When listed in the NRHP in 2018, it was found to have integrity of location, design, setting, materials, workmanship, feeling and association (Imberman and Nickless 2017).

Meanwhile, Dade County had transferred ownership of the HVKBP to the City of Miami in 1982 with the stipulation that the park be kept open as a public recreational area. However, the City closed the park soon after the transfer citing the high cost of maintenance and operations. The park facilities fell into disrepair with the demolition or removal of the park offices, an overnight cabin, the original carousel, the miniature train and track, and the metal framed cabanas (Novaes 2013).

In 1999, community activists and environmental organizations joined to create the HVKBP Civil Rights Task Force to monitor land use decisions. The HVKBP Trust formed in 2001-2002 (Novaes 2013). On June 28, 2002, HVKBP was listed in the NRHP. In the same year, Public Law 107-343 directed the Secretary of the Interior to conduct a study of HVKBP to evaluate it for potential inclusion as a unit of the National Park System. Although it met only one of four criteria for inclusion in the National Park System, it was recognized as an important historical and cultural site deserving recognition for its role in the history of civil rights in Miami (National Park Service 2008).

In 2003, Philadelphia-based landscape architects Wallace, Roberts & Todd prepared the HVKBP Master Plan, which called for preservation and restoration of the landscape and historic features. The plan also introduced the development of a cultural center, memorial garden, a shoreline promenade, nature and recreation trails, a camping area and beach pavilion, and new playground features (Wallace, Roberts, & Todd 2003). In 2008, the park reopened after being closed for over 25 years (Novaes 2013). The 2010 Master Plan for Virginia Key, approved by the City Commission on July 22, 2010, referred back to the 2003 plan and built on those concepts by adding pedestrian connections between the park properties and the rest of the features on the island (City of Miami 2010). In 2013, the City of Miami designated the HVKBP as a local landmark.

In 2008, the Miami Marine Stadium was designated as a local landmark and was listed in the NRHP in 2018. According to the NRHP nomination, the stadium "has received recognition from DoCoMoMo, the World Monuments Fund, the National Trust for Historic Preservation, and the Getty Foundation as an outstanding example of mid-century design" (Imberman and Nickless 2017).

3.8.1.2. Historic Structures

The property proposed for use incorporates two resources which are both listed in the NRHP and as local landmarks by the City of Miami: Miami Marine Stadium (8DA11451) and HVKBP (8DA7007).

3.8.1.2.1. Virginia Key Beach Park

On June 28, 2002, Virginia Key Beach Park (8DA7007), 3861 Rickenbacker Causeway/4020 Virginia Beach Drive was listed in the NRHP under Criterion A for its significance in the areas of recreation, social history, and African American ethnic heritage (Figure 3.8.1.2.1-1). When designated, the NRHP boundary was defined by the legal description of the park boundaries which incorporated 77 acres on the barrier island of Virginia Key (Cole and Goodwin 2002). The NRHP defined the period of significance as 1945 to 1956. Ten individual resources, which included six structures and four buildings, were identified in the designation and NRHP comments as contributing; no noncontributing resources were listed in the designation. The following are the contributing resources listed in the designation (Cole and Goodwin 2002, and Supplemental Listing Record; Novaes 2013):

Figure 3.8.1.2.1-1 Cultural Resources

- **Concession Stand (8DA8057) -** Built in 1952, the concession stand is a Masonry Vernacular building with concrete block construction topped by a flat roof and set on a concrete slab foundation (Figure 3.8.1.2.1-2). A large recessed concession area is filled by a three-sided counter (Cole and Goodwin 2002).

Figure3.8.1.2.1-2 Concession Stand interpretive marker with Concession Stand in background, December 2018.

- **Carousel Building (8DA8055)** – Constructed in 1951, the Carousel Building is an octagonal-shaped structure built of concrete block, glass block, and wood (Figure 3.8.1.2.1-3). It has a hip roof with a ventilated cupola, and wood louvers covering the ventilated openings. Although the original carousel was removed, the existing Historic Merry-Go-Round is an antique 1949 model manufactured by the Allan Herschell Company of Tonawanda, New York (Novaes 2013).

Figure 3.8.1.2.1-3 Carousel Building, December 2018.

- **Restroom Building (8DA8053)** – The 1952 restroom building has a flat roof and concrete block construction (Figure 3.8.1.2.1-4) (Cole and Goodwin 2002).

Figure 3.8.1.2.1-4 Restroom Building, December 2018.

- **Bathhouse/Restroom Building (8DA8056)** - This 1952 concrete block building incorporates the original dressing rooms, showers and restrooms (Figure 3.8.1.2.1-5). The Masonry Vernacular resources has a flat roof and an exterior surfaced with concrete block and glass block (Cole and Goodwin 2002).

Figure 3.8.1.2.1-5 Bathhouse/Restroom Building, December 2018.

- **Dance Pavilion (8DA8051)** – Extending 40 feet in diameter, the Dance Pavilion consists of a circular poured concrete slab poured in four equal pie-shaped sections in 1952 (Figure 3.8.1.2.1-6). Coconut palms surrounded the dance period during the historic period; benches and a jukebox provided relaxation and music (Cole and Goodwin 2002; Wallace, Roberts, & Todd 2003).

Figure 3.8.1.2.1-6 Dance Pavilion, December 2018.

- **Picnic Pavilion (8DA8054)** - The 1952 picnic pavilion exhibits a utilitarian design with a simple flat roof, a poured concrete slab foundation, and a barbecue pit (Cole and Goodwin 2002).
- **Smaller Picnic Pavilion #1 (8DA8052)** – Situated to the southwest and west of the restrooms, the small picnic pavilion has a poured concrete slab and a flat roof. Built in 1952, the simply designed structure houses a barbeque pit (Cole and Goodwin 2002).
- **Smaller Picnic Pavilion #2 (8DA8128)** – Like the other small picnic pavilion, this utilitarian structure incorporates a barbeque pit. Erected in 1952, it has a flat roof and concrete slab foundation (Cole and Goodwin 2002).
- **Parking Area/Historic Park or Plaza (8DA8058)** – The parking area was constructed in 1949 by the county. It is bordered by large native trees and several park benches (Cole and Goodwin 2002).

- **Miniature Train Tunnel -** Native coral rock surrounds the 70-foot long wood tunnel which is situated northwest of the picnic pavilion (Figure 3.8.1.2.1-7). It was built utilizing a traditional post and beam construction with a flat wood roof over the crossbeams. Although the original train and track were removed, the Historic Mini Train currently operating in the park is the exact model and date of the original mini train and the station has been rebuilt (Figure 3.8.1.2.1-8 and Figure 3.8.1.2.1-9, Cole and Goodwin 2002, Novaes 2013).

Figure 3.8.1.2.1-7 Miniature Train and Tunnel, December 2018.

Figure 3.8.1.2.1-8 Miniature Train Track and Crossing.

Figure3.8.1.2.1-9 Miniature Train Station, December 2018.

Lost resources include the park office, the superintendent's house, rental cabins, cabanas, and the boat launch and pier, although their foundations or other remnants are evident (Figure 3.8.1.2.1-10; Cole and Goodwin 2002; Wallace, Roberts, & Todd 2003). The Park Superintendent's house, the only private

residence established on Virginia Key, was destroyed in the 1980s during filming for an episode of Miami Vice (Wallace, Roberts, & Todd 2003).

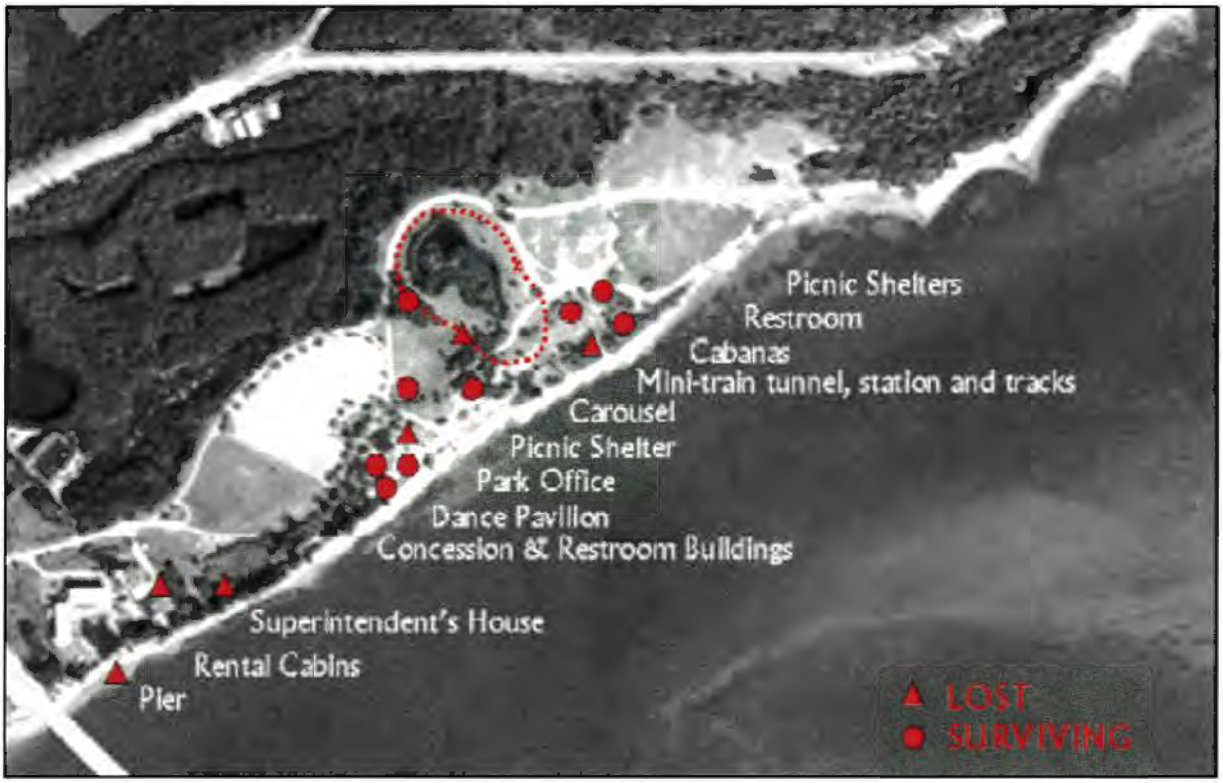


Figure 3.8.1.2.1-10 Lost and surviving resources at the Historic Virginia Key Beach Park (Wallace, Roberts, & Todd 2003:31).

In 2013, the City of Miami designated the 82.5-acre HVKBP as a local landmark. In addition to the structures listed in the NRHP nomination, the local designation emphasized the park as a landscape with significant viewsheds, vantage points, and relationships between resources (Novaes 2013). According to the local designation,

> The recreational and social importance of the park continues to be based on its natural features as a barrier island with considerable accessible shoreline and thus views that typify important characteristics of the topographical setting are key character defining features…Several vantage points within the park offer views of the natural state of the shoreline and provide an important contrast to the more manicured area in the vicinity of the concession building, restroom and carousel…Another significant vantage point within the park is the entrance, which is important for providing an overview of the context of the recreational facilities and their relationship to one another….The view includes the curing entrance drive, the manicured lawn area and parking lot within the entrance drive loop, glimpses of the ocean and park facilities, groves of shade trees and the vegetated backdrops that define the park's spatial organization (Novaes 2013).

The park was designated under criteria (1) and (3) as detailed in Sec. 23-4 (a), of Chapter 23 of the City Code (Novaes 2013):

(1) Are associated in a significant way with the life of a person important in the past

The HVKBP is associated with Mary Athalie Range, civil rights activist and Miami City Commissioner, who led the effort to restore the park and create the Virginia Key Beach Park Trust (Novaes 2013).

(3) Exemplify the historical, cultural, political, economical, or social trends of the community.

The HVKBP is associated with the social history of the African American community during the era of segregation and is also significant as an environmental preservation site (Novaes 2013).

The HVKBP Master Plan indicates that the spatial organization and land patterns in the park are one of its character defining features. The shoreline was the central organizing element of the beach park site. According to the HVKBP Master Plan,

> During the park's period of significance, the shoreline of the western area was defined by a band of coconut trees along the water's edge. This grove, of which only scattered remnants remain, was a significant feature of the park's spatial organization. The grove served as an "outdoor room" that provided a shaded area for seating and circulation that was continuous with the beach and which permitted views of the water's edge from the interior of the park. In the area east of the lake, a band of more natural coastal vegetation, since lost to shoreline erosion, separated a large open meadow from the shoreline and defined a more inward focused space. Paths and occasional breaks in the vegetation mass provided views and access to the water's edge. Cabanas occupied a position at one such break. During the time since the park's period of significance, growth of vegetation along the northern boundary of the park has separated this area from the road, to which it was formerly open. Shade tree clusters and picnic facilities were scattered on the landward side of the coastal vegetation and defined small 'outdoor rooms' used as shaded picnic areas (Figure 3.8.1.2.1-11, Wallace, Roberts, & Todd 2003).

Figure 3.8.1.2.1-11 "Historic vegetation masses defined the park's special organization: the historic Coconut Grove and lawn areas oriented toward the shoreline" (Wallace, Roberts, & Todd 2003:17).

According to the HVKBP Master Plan, "views and vantage points within HVKBP that are character defining features of significance and integrity are those that establish the relationship of the various cultural features to the natural setting and which establish the relationship of the park to the context of the ecological and urban environment" (Wallace, Roberts, & Todd 2003). These include views of the ocean from the recreational facilities, views of the natural state of the shoreline versus the contrast of the more manicured areas, and vantage points evocative of the natural barrier island dune and coastal hammock communities. No significant development is visible from the park, while the undeveloped park is visible from Key Biscayne, the Rickenbacker Causeway, and the water. The park entrance also provides an important vantage point establishing the impression of a generous size with glimpses of the ocean and park facilities. According to the HVKBP Master Plan, "significant backdrops from this vantage point are the vegetation lining the curving entrance drive and the mass of vegetation surrounding the lake, which conceals the eastern half of the park from view and prevents the entire park from being visible from the entrance. This 'concealing' of the full extent of the park evokes a place that has significant size and complexity and supports the impression that the park is generously proportioned, with much to be discovered" (Wallace, Roberts, & Todd 2003). The individual park facilities, as well as the remnant foundations, represent the park's recreational function and are visible from multiple perspectives within the park (Wallace, Roberts, & Todd 2003).

Vehicular circulation features from the period of significance include not only the paved entrance drive, but also the parking lot with planting islands surrounded by hand-cast concrete curbs and the meandering network of sandy beaten tracks. These elements are character defining features that evoke the period of significance. According to the HVKBP Master Plan,

> The entrance drive, the large manicured lawn and the parking lot represent a landscape design aesthetic rooted in a particular time and are significant character defining site features that establish the place of the park within the social context of its era. The entrance drive, the large manicured lawn and the large parking area carried specific connotations during the park's period of significance and were an important element of the park's symbolic importance. Establishment of the park was a significant victory within the context of the civil rights struggle. As the first public beach recreation facilities for African Americans, the quality of the facilities was of great significance as an indicator of the improved status of the community. Within the context of 1950s American society, the park's entrance landscape connoted quality and therefore status. The curvilinear entrance drive was typical of well-designed public parks throughout the nineteenth and twentieth centuries. The park's well-manicured lawn, with its clearly evident requirement for diligent maintenance at public expense was a status symbol. Similarly, the large parking lot provided a showcase for the display of increasing prosperity within the community in the form of shiny new cars and was an indicator of the community's new status....In addition, the size of the parking lot provided evidence of a large assembly of black citizens – a significant indicator of increasing civil rights for the community, which had not previously fully enjoyed the constitutionally guaranteed right of public assembly (Wallace, Roberts, & Todd 2003).

3.8.1.2.2. Miami Marine Stadium

The Miami Marine Stadium (8DA11451), located at 3501 Rickenbacker Causeway, was listed in the NRHP on April 6, 2018. The structure was listed under NRHP Criterion A for its association with important events and Criterion C for its significant architecture, construction, and engineering. Designated in the areas of architecture and entertainment/recreation, the design is a significant example of mid-century Brutalist architecture, while the stadium served as a premier event venue which elevated the international status of Miami during the late twentieth century. The nomination included three contributing elements: the grandstand, the basin, and a ticket booth (Imberman and Nickless 2017).

- **Water Basin** - The water basin measures approximately 6,000 ft. by 1,400 ft. and was designed in an elongated oval based upon the Circus Maximus in Ancient Rome and similar vehicular

racetracks. The original floating stage is no longer extant, but the tidal basin remains unaltered (Imberman and Nickless 2017).

- **Grandstand** - The grandstand is centered on the south shore of the basin. With the lower rows of seats extending into the basin, it was designed to offer the audience a panoramic view of downtown Miami. Patrons enter the facility from the rear. When built, there was minimal landscaping with a circular drive enclosing a grassy ellipse marking the main entrance. Palm trees surrounded the water-facing side of the stadium, while paved parking lot occupied the rest of the property. Although graffiti now covers the grandstand, the structure has changed little since its closure in 1992 (Imberman and Nickless 2017).
- **Ticket Booth** – The ticket booth is a freestanding concrete building with a smaller, wooden booth set under the flat roof. It is centered on the southwest elevation of the grandstand (Imberman and Nickless 2017).

The boundary for the NRHP designation incorporated the entire water basin including the two islands and extended south to the Rickenbacker Causeway with the east and west boundaries approximately 100 ft. on either side of the grandstand (Imberman and Nickless 2017).

Locally designated as a landmark in 2008, the designation report notes that both the basin and the grandstand "are inextricable parts of a designed landscape focusing on panoramic views of downtown Miami's skyline across Biscayne Bay" (Hernandez 2008). The boundary included both the stadium, the basin, and area extending 100 ft. to the north, south, and east of the stadium's footprint which would include the location of the original fountain and the ticket booth. The boundary extended to the Rickenbacker Causeway creating a rectangle from the stadium to the roadway. It was identified as significant for its cultural and social affiliations, architecture, engineering, and association with architect Hilario Candela. The stadium was also identified as significant as a symbol of the emergence of Miami as the capital of PanAmericanism and the visionary planning activities to become an internationally prominent city (Hernandez 2008).

The stadium was nominated under criteria (3), (4), (5), (6), and (7) as detailed in Sec. 23-4 (a), of Chapter 23 of the City Code (Hernandez 2008):

(3) Exemplify the historical, cultural, political, economic, or social trends of the community.

Miami Marine Stadium was used as an aquatic performance hall, a sports venue, and for community social events during the latter half of the twentieth century. It was a popular waterfront meeting place of cultural and social significance (Hernandez 2008).

(4) Portray the environment in an era of history characterized by one or more distinctive architectural styles. Miami Marine Stadium exhibits a distinctive mid-century modern design and was a visionary planning project of the City signifying Miami's emerging status as an international city (Hernandez 2008).

(5) Embody those distinguishing characteristics of an architectural style or period or method of construction. The stadium is a noted example of the Brutalism style well recognized as part of Miami's mid-century modern architectural style (Hernandez 2008).

(6) Is an outstanding work of a prominent designer or builder. The stadium was designed by Hilario Candela in 1962 who went on to head a prominent architectural firm and serve as one of the most distinguished architects in the city's history. Candela joined the architectural firm of Pancoast, Ferendino, Skeels, and Burnham in 1961 and remained with the firm until his retirement in 2006 (which by then was known as Spillis, Candela DMJM). He migrated to the U.S. from Cuba and received his architectural degree from the Georgia Institute of Technology in 1957 before joining the Miami firm. After working on projects extending from the United States to Latin America, Europe, and the Middle East, he was named a fellow of the American Institute of Architects garnering numerous awards. The stadium is among the best of his designs (Hernandez 2008).

(7) Contains elements of design, detail, materials, or craftsmanship of outstanding quality or which represent significant innovation or adaptation to the South Florida environment. The

stadium exhibits a unique design for an open-air structure mid-century sporting venue exhibiting modern methods of construction and design aesthetics. It was a novel and innovate design for the period. Its openness and the nautical shapes exhibited in its design are indicative of the waterfront location showcasing the city (Hernandez 2008:16).

3.8.1.3. Archaeological Resources

Site 8DA00006 (Virginia Key Site) was originally reported to John Goggin in 1929 by J.K. Small as a prehistoric midden north of Biscayne Key. It was projected to lie within an environmental restoration project area. Goggin was not able to relocate the site after a visit in 1952, and subsequent visits in 2000 and 2002 yielded similar results. Shovel test survey of the entire area in 2002 did not yield a single prehistoric artifact that could be associated with a midden. Documentation of the site does not include a description of any artifacts recovered originally, and it is suspected that it may have been destroyed between the initial reporting in 1929 and the site visit in 1952. The site is considered ineligible for listing on the NRHP by the SHPO and no further work is recommended at the site (Goggin 1952).

3.8.2. Compliance and Mitigation Measures

3.8.2.1. Regulations

HVKBP Master Plan: All improvements to the park must adhere to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for the Treatment of Cultural Landscapes. "Use of the park facilities must not adversely impact the listed historic resources or impair the integrity of the character defining features of the landscape inventoried in the HVKBP Master Plan. Any site improvements must take into account impacts to resources and avoid, minimize, and mitigate these impacts" (Wallace, Roberts, & Todd 2003:38).

City of Miami Historic Preservation Review: Both the HVKBP and the Miami Marine Stadium are locally designated landmarks. As such, a Certificate of Appropriateness (COA) is required for work that would change the appearance of a designated property. This includes alterations, additions, new construction, or demolition. Depending on the type of work, the COA will need to be approved by City staff or by the Historic and Environmental Preservation Board (HEPB). All improvements to the park must adhere to the Secretary of the Interior's Standards for the Treatment of Historic Properties and Guidelines for the Treatment of Cultural Landscapes.

Section 106 of the NHPA: If a federal permit is required or federal funding is received for the project, then assessment of the impacts of the event on both the park and the stadium will need to be conducted under Section 106 of the NHPA. This will require coordination with the federal agency and the State Historic Preservation Officer to limit adverse effects or perform mitigation if adverse effects cannot be avoided.

Building Code and City of Miami Planning Board: Improvements must meet standards imposed by the building code and are subject to review by the City of Miami Planning Board (City Commission).

Virginia Key Master Plan: The 2010 Master Plan for Virginia Key, approved by the City Commission on July 22, 2010, incorporated and built upon the concepts in the Master Plan for HVKBP by adding pedestrian connections between the park properties and the rest of the features on the island. Regarding the Miami Marine Stadium, it proposed to "restore and vigorously use" the facility (City of Miami 2010).

3.8.2.2. Commitments

The Event Organizer makes the following commitments to minimize and mitigate any potential impacts to the historic and archaeological resources on Virginia Key:

- Limit all new construction to be temporary in nature to be removed following the Event with the site returned to its original condition.
- Block access to all historic resources in the HVKBP by secure, heavy-duty fencing and installing no access signage.

- Limit pedestrian access to only existing pedestrian foot paths and the immediate vicinity of the concert structures in the HVKBP during the Event.
- Monitor construction and deconstruction activities in the HVKBP to ensure preservation of historic buildings and structures, viewsheds, vantage points, and circulation routes. A photographic record of the condition of the resources before and after the Event will be prepared.
- Security during the Event will be aware of the location of the historic resources and monitor/limit the access to them.
- Conduct a pre-Event baseline conditions walk-thru at both historic properties to document existing conditions and a post-Event walk-thru to ensure that significant park features are returned to their pre-Event condition.
- Any adverse effects to historic resources in the HVKBP be mitigated by implementation of Historic Building Restoration or Historic Landscape Restoration plans identified in the HVKBP Master Plan (Figure 3.8.2.2). According to the HVKBP Master Plan, "the goal of preservation of the historic site features - including both buildings and landscape setting - is to permit the public to place the events for which the site is recognized as significant into historical context" (Wallace, Roberts, & Todd 2003).

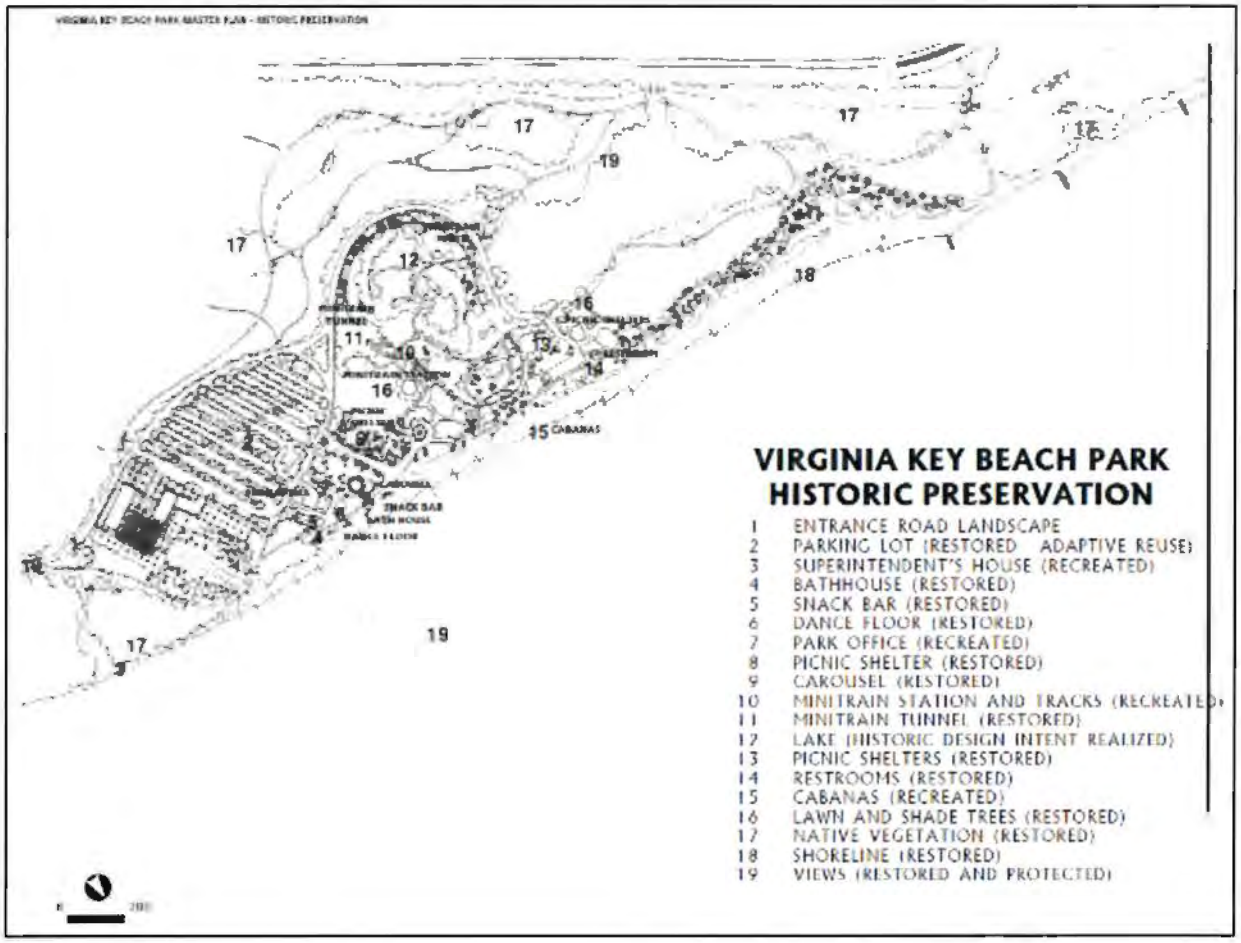


Figure 3.8.2.2 Historic Preservation Plan, Virginia Key Beach Park Master Plan (Wallace, Roberts, & Todd 2003:56).

3.9. Public Health and Safety Management

Security of the attendees, artists, staff, and the public is the highest priority for the Event Organizers. The Event will be held in late March 2019, with some events being held at night. The challenges confronting the Event Organizer are:

A. Time of the Year

This time of the year in South Florida is typically the dry season. The challenges presented to the Event Organizers are:

1. Event patrons can suffer from sun burn, dehydration, insect bites. Signing should be posted warning the public of this threat.
2. Event patrons need to be aware of potential wildlife such as: spiders, venomous snakes, and scorpions. Signage should be posted educating patrons of such wildlife.
3. Potential for a wildfire in the vegetative communities, coastal hammocks and mangroves, on Virginia Key. The Event Organizer will have City of Miami Fire Department staff on site during the Event for potential emergencies.
4. Wildlife are not to be fed or harassed. Signage should be posted educating patrons of such wildlife.

B. Nighttime Activities

5. The activities of certain species of wildlife during this time of year varies by time day. Some species conduct their activities at night when the Event will be occurring.
6. Lighting concerns: it is doubtful that sea turtle nesting will be occurring during the time period associated with the Event and access to the beaches will be restricted. Likewise, it is doubtful that American crocodile nesting will be occurring; however, the crocodile could be mating and moving throughout in nearshore waters in and around the mangrove habitats at nighttime. Since wetlands and other sensitive areas will be fenced off and access to these areas will be denied, this should not pose a harm to crocodiles, mating activities, or human safety. Signage should be posted noting these restricted areas and sensitive areas.
7. Fireworks: should not produce enough incidental light to interfere with any crocodile mating activities in the avoided habitats. However, in the unlikely event that a stray piece of projectile wrapping or a failed shot lands in either the coastal hammock or mangrove areas it will be prudent to have public safety units and wildland firefighting capabilities on hand when fireworks are scheduled to be displayed.

C. Public Behavior

8. Careless behavior by the public such as cigarette smoking and discarding of cigarette butts, and/or illegal fireworks near or in the hammock and mangrove areas could cause wildfires. Sensitive habitats will be restricted. Proper waste receptacles will be provided. Signing should be posted warning the public of this threat.
9. Harassment of wildlife in the sensitive areas causing either injury to the wildlife or injury to the people illegally harassing the wildlife. Sensitive areas will be restricted. Signing should be posted.
10. The Event Organizers are committed to working in conjunction with and at the direction of the Miami Police Department, Miami Fire Department, Miami-Dade Police Department, Florida Department of Alcohol Beverage and Tobacco, Southeast Florida Fusion Center, FBI Joint Terrorism Task

Force, and the U.S. Department of Homeland Security in an effort to provide aa multi-layered security strategy aimed at creating a safe environment.

11. The Event Organizer will maintain a community hotline prior to during and after the Event for "see something say something" purposes. This hotline will be implemented as part of the Event Organizer's partnership with the City of Miami Police.

4. Risk Assessment and Remediation

4.1. Summary of the Environmental Assessment, Compliance and Mitigation Measures

An assessment of potential environmental risks has been considered in this evaluation with respect to the nature of potential impacts on environmental receptors, regulatory requirements, and compliance with applicable local, state, and federal regulations. An evaluation has been conducted for potential positive and adverse environmental impacts and recommendations have been developed for the consideration of avoidance, minimization, and remediation or mitigation measures. A summary is provided for the Environmental Assessment of the Event to occur on Virginia Key (Table 4.1).

Table 4.1 Summary Table of Risk Mitigation

Resources Potentially Affected by the Event	Potential Risk	Proposed Remediation/Mitigation
Protected/Threatened and Endangered Species		
Impacts to West Indian manatee	• Manatee collisions, injuries, and deaths. • Impacts to feeding areas (seagrasses/submerged aquatic vegetation).	• Use of licensed water taxi operators in Miami. • Restricted access to marginal floating dock. • Posting of Manatee educational signage. • Use of a qualified marine mammal observer during the Event. • Immediately report manatee deaths, injuries, and/or collisions to FWC.
Impacts to Wading Birds and Shore Birds and Habitat/White-crowned pigeon/Migratory Birds of Conservation Concern	• Impacts to feeding and nesting habitat.	• Restrict all activity associated with the Event to upland habitats. • Restrict pedestrian access with fencing and signage. • Use of an environmental monitor during the setup and breakdown of the Event.
American Crocodile	• Impacts to feeding habitat.	• Restrict all activity associated with the Event to upland habitats. • Restrict pedestrian access with fencing and signage. • Fences will be constructed with a gap in the bottom to allow for crocodile movement between habitats. • Use of an environmental monitor during the setup and breakdown of the Event.
Sea Turtles	• Impacts to feeding and nesting habitat.	• Restrict all activity associated with the Event to upland habitats. • Restricted access to marginal floating dock. • Use of a qualified observer during the Event. • Restrict access to the Event area from the water and beach with fencing and signage. • Restrict unauthorized access to the Event and deterring attempts to swim or enter the Event site.
Listed Plants	• Construction impacts. • Pedestrian traffic.	• Restrict pedestrian access to sensitive areas including the native forested uplands with fencing.

Resources Potentially Affected by the Event	Potential Risk	Proposed Remediation/Mitigation
		• Post signage noting "Environmentally Sensitive Area/No Trespassing" where necessary. • Use of an environmental monitor during the setup and breakdown of the Event.
Ecological Risks and Mitigation to Ecological Communities		
Coastal Hammock Communities	• Fire and Wildfires. • Soil compaction.	• Deployment of Emergency Wildland firefighting personnel to contain and eventually extinguish the fire. • Follow-up with natural resource surveys to assess extent of impact and determine if Integrated Pest Management to control/eradicate invasive plants is warranted. • During and after the Event survey for new trails, pathways, etc. Determine the level of impact from soil compaction, trash, vandalism, etc. Design and implement trail restoration projects.
Beach/Dune Communities	• Fire and Wildfires.	• Deployment of Emergency Wildland firefighting personnel to contain and eventually extinguish the fire. Follow-up with natural resource surveys to assess extent of impact and determine if Integrated Pest Management to control/eradicate invasive plants is warranted.
Seagrasses and Submerged Aquatic Vegetation	• Impacts from vessel groundings, and motorboat propeller scarring.	• Active Florida marine officers patrol. • Implement a seagrass restoration plan that includes replacement of displaced substrate with native material and replanting with resident species and post-restoration monitoring.
Coral	• Runoff from parking areas and/or venues can cause increases in turbidity or increases in certain environmental contaminants that may be detrimental to corals. • Boat strikes/scuba diver impacts.	• Control of storm water runoff from venue parking areas and other venue spots that could generate unusual amounts of sediment and/or chemical runoff. • In the case of boat strikes or diver caused impacts to coral, implement a coral restoration plan that includes replacement of displaced substrate with native material and replanting with resident species and post-restoration monitoring.
Wetlands (saltwater and freshwater)	• Runoff from the venues that may bring with it any large amounts of oil, gas, grease, silt, or trash contamination which are harmful to wetland communities and their associated fauna.	• Control of storm water runoff from parking areas and other venue spots that could generate unusual amounts of sediment and/or chemical runoff. • Properly placed trash receptacles. • Signage warning boaters no to tie off to mangroves. • Instructing trash clean-up crews not to wade into mangrove sediments to avoid root damage and sediment compaction.

Resources Potentially Affected by the Event	Potential Risk	Proposed Remediation/Mitigation
Historic and Cultural Resources		
Virginia Key Beach Park Miami Marine Stadium Archaeological Site 8DA00006	• Use/destruction of historic resources by Event goers. • Alteration of historic resources during set up/construction of Event fencing and stages.	• Block access to all historic resources in the HVKBP by secure, heavy-duty fencing and installing no access signage. • Limit all new construction to be temporary in nature to be removed following the Event with the site returned to its original condition. • Limit pedestrian access to only existing pedestrian foot paths the immediate vicinity of the concert structures in the HVKBP during the Event. • Limit vehicular access to handicap permit holders and emergency vehicles within the HVKBP during the Event. • No fireworks be allowed within the HVKBP. • Monitor construction and deconstruction activities in the HVKBP to insure preservation of historic buildings and structures, viewsheds, vantage points, and circulation routes. A photographic record of the condition of the resources before and after the Event should be prepared. • Limit attendance at the HVKBP to 60,000 per day. • Security during the Event should be aware of the location of the historic resources and monitor/limit the access to them. • Conduct a pre-Event walk-thru at both historic properties to document existing conditions and a post-Event walk-thru to insure that significant park features are returned to their pre-Event condition. • Any adverse effects to historic resources in the HVKBP be mitigated by implementation of Historic Building Restoration or Historic Landscape Restoration plans identified in the HVKBP Master Plan.
Noise		
Noise	• Noise and noise induced vibration impacts on marine species at RSMAS UMEH facility.	• Sound curtains or panels should be installed along the fenceline at the northeastern property boundary of the RSMAS' UMEH facility, or closer to the UMEH hatchery tanks as practical.
Noise	• Vibration impacts on marine species at RSMAS UMEH facility.	• The Event Organizer is proposing to limit all direct speaker ground contact for the two stages nearest to the UMEH facility. This will be accomplished by elevating speakers (particularly subwoofers) on platforms that have been lined with rubberized absorptive mats to reduce vibration transmission or directly suspending speakers from elevated portions of the stage structures.
Noise	• Noise and noise induced vibration impacts on	• The rear end of the Resistance Carl Cox and Resistance Reflector should be installed with sound

Resources Potentially Affected by the Event	Potential Risk	Proposed Remediation/Mitigation
	nesting bird and species habitat.	curtains/panels to minimize sound radiating towards the rear of these stages.
[illegible]		
Traffic generated from Event patrons affecting road users and Villages of Key Biscayne community	• An increase in traffic during the Event.	• The Event Organizer is working with RoadSafe Traffic engineers, as well as coordinating with the Miami-Dade Police Department, City of Miami Police Department and Miami-Dade Department of Transportation and Public Works on the development of the Maintenance of Traffic Plan.
Parking	• Illegal parking at non-Event related locations/facilities.	• The Event Organizer is not providing any parking for Event patrons on the Rickenbacker Causeway, with limited exceptions for handicapped Event patrons, VIP Event patrons, staff and artists. To facilitate Event patrons' transportation to the Event, the Event Organizer will be providing free bus transportation, which will be picking up Event patrons from three different bus locations: (i) American Airlines Arena; (ii) Vizcaya Metrorail Station; and (iii) Resorts World International (old Miami Herald building). The Event Organizer is in the process of securing a fourth location on Miami Beach.
Increased boat traffic	• Increased boat traffic/mooring with the basin.	• The Event Organizer will be providing water taxi service from a location in and/or near downtown Miami, as well as coordinating ride share and private vehicle drop off locations on the Rickenbacker Causeway. • Marine patrol services will be provided prior to, during and following the Event to assist with compliance of safe boating activities and construction and breakdown of temporary docks.
[illegible]		
1. Time of year: 2. Physical effects of weather/time of year 3. Environmental threats (flora and fauna) 4. Physical threats to vegetative communities 5. Feeding/nesting/breeding season for wildlife species	• Sun burn. • Dehydration. • Insect bites. • Venomous snakes. • Spider bites. • Scorpions. • Threat of wildfire in coastal hammocks and mangroves. • Disturbances to actively feeding/breeding/nesting wildlife.	• Post signs warning the public of the threat of high temperatures and weather conditions. • First Aid-EMS stations and services providing treatment to affected persons. • 911/Emergency services accessibility to site. • Post signs warning the public of the threat. • Restrict access.

Resources Potentially Affected by the Event	Potential Risk	Proposed Remediation/Mitigation
	• Injury to attendees from actively feeding/breeding/nesting wildlife.	
Fireworks	• Use of fireworks could be a potential fire hazard/risk.	• Have public safety units and wildland firefighting capabilities on hand when fireworks are scheduled to be displayed.
Public behavior	• Drunken/disorderly conduct. • Cigarette smoking. • Harassment of wildlife/habitat disturbance. • Security threats.	• Post signs warning the public of this threat. • Restrict access. • Work with all applicable law enforcement agencies including, but not limited to the Miami Police Department, Miami Fire Department, Miami-Dade Police Department, Department of Alcohol Beverage and Tobacco, FBI Joint Terrorism Task Force, and the U.S. Department of Homeland Security to provide a multi-layered security strategy. • Maintain a community hotline prior to, during, and after the Event. • Adopt a "Leave No Trace" policy.
Public Safety and Security	• Outbreaks of violence; fights; protests. • Emergency Medical Treatment or Law Enforcement needs. • Terrorist attacks.	• The Event Organizer is working together with public safety stakeholders such as the Miami-Dade Police Department, City of Miami Police Department and City of Miami Fire Department on the development of an incident action plan for the Event. • There will be multiple private security companies that will be integrated into the Event's security operation, which will be integrated into the incident action plan. • The City of Miami Police Department will be responsible for law enforcement at the Event site, the Miami-Dade Police Department will be responsible for law enforcement of traffic on the Rickenbacker Causeway and the City of Miami Fire Department will be responsible for providing fire safety and emergency medical care for the Event. • Coordination with the FBI, U.S. Department of Homeland Security, Southeast Florida Fusion Center, U.S. Coast Guard, Federal Aviation Administration, as well as with local first responders have been ongoing and will continue throughout the Event.

4.2. Sustainability Management

The Event will be staged by the Event Organizer on Virginia Key at Miami Marine Stadium Flex Park and at HVKBP (collectively, the "Venues") on March 29, 30 and 31, 2019 and the current scheduled operating

hours for the 3-day Event are Friday 4pm–2am, Saturday 12pm–2am and Sunday 12pm–2am for a maximum running time of 38 hours.

Pre-production operations respecting the Event coincide substantially with the sustainability goals as either contemplated or enumerated in that certain December 2010 Miami-Dade County Green Print (Sustainability Plan) as Plan Goals and the Event Organizer has specifically undertaken to comply with such Plan Goals in the following manner (each an "Event Activity"):

Plan Goal 1: Create the next generation of green leaders. Work with the more than 100 GreenPrint partners to integrate sustainability into local, regional and national strategic decision-making, policies and operations.

Event Activity: The Event Organizer, with its commitment to (i) community engagement and (ii) the integration of Event stakeholders into the planning and decision-making process for the Event, has made achievements in meeting both the spirit and actual targets of this goal. For example, the Event Organizer has collaborated with local environmental groups in drafting a Memorandum of Understanding as aforementioned. The commitments which the Event Organizer commits to undertake include:

- No beach access to Event patrons.
- No polystyrene products or plastic straws.
- No balloons.
- Education and awareness programs available at the Event, including waste bins for recycling, landfill, and compost.
- Completion of site restoration obligations prior to the beginning of sea turtle nesting season.
- Adopting a "leave no trace" policy for Event patrons.
- Developing a mass transit plan to mitigate transportation impacts.
- Partnering with other organizations to facilitate waste reduction and cleanup efforts.
- Developing a waste reduction plan with the long-term goal of eliminating single-use plastics and expanding the existing water refill program.
- Developing a plan to minimize or eliminate liquid waste, food spillage or runoff.
- Developing a plan to identify environmentally friendly solutions for pyrotechnics.
- Forming an impartial Environmental Advisory Board that will advise on mitigating the environmental impacts of the Event.
- Requiring each vendor to the same pledge or to provide a comparable program.

In addition to these commitments, the Event Organizer has also committed to the following sustainable initiatives:

- No confetti or streamers.
- Banning most single-use plastics including cups, food packaging and cutlery.
- Banning single-use consumer plastic bags at HVKBP and complete phase out of single-use consumer plastic bags by the end of the 2019 Event.
- Limiting water use at HVKBP.
- Partnering with a company with extensive experience in waste diversion programs at large music events to execute the recycling and composting program and conduct a baseline waste assessment in order to further reduce waste in future years.
- Developing an impactful environmental awareness marketing campaign to begin to shift attendee culture and behavior in advance of the event.

- Developing an extension of this campaign that will have presence at the event via signage and art activations.
- Developing environmental trainings and communications for vendors, staff and cleaning crew.
- Developing a guest engagement program in which volunteers will create dialogue and motivate attendees to behave respectfully of the environment.
- Creating portable ashtrays that will be distributed by volunteers to mitigate cigarette litter.
- Expanding the Eco-Village area by inviting local environmental organizations and sustainable vendors to participate.
- Partnering with other local environmental organizations to participate in education, restoration and cleanup efforts on Virginia Key.

Plan Goal 2: Use less water and energy. Reduce per capita non-renewable energy use to 20 percent below 2007 baseline by 2015. Reduce water consumption by 1.5 million gallons a day. Reduce government electricity use by 20 percent from 2007 to 2014 in accordance with Board of County Commissioners legislation.

Event Activity: While the Event Organizer does not intend to either increase or contribute to the increase of energy consumption beyond its use in previous years of production, it does seek to begin to reduce its non-renewable energy consumption. A baseline energy assessment is anticipated in 2020 in hopes of incorporating an increasing amount of renewable energy where possible commencing in 2021. The Event will also expand its existing Eco-Village area, inviting local renewable energy providers to showcase their innovative technologies to guests.

Plan Goal 3: Maintain exceptional quality of air, drinking water, and coastal waters used for recreation. Continue to achieve the best air quality rating at least 90 percent of the year and exceed drinking water quality standards. Prevent degradation of our outstanding Florida waters.

Event Activity: The Event has been planned and designed to occur solely on the uplands at the HVKBP. Access to wetland areas and to beach and coastal waters shall be fully restricted from access to guests. Plans for the Event at the Miami Marine Stadium consist of the use of the uplands and parking areas, including a temporary marginal floating dock along the northern shoreline of the site. Access by up to 49 boats has been authorized and found to be in compliance with local, state, and federal regulations. Regulatory review of the activity and the issuance of the appropriate local, state, and federal permits has concluded that the Event will not generate any contamination that will degrade ambient water quality of Biscayne Bay nor will it violate its protections as an Outstanding Florida Water. Marine patrol services will be provided during the Event to assist with compliance of safe boating activities.

Plan Goal 4: Protect and enhance Biscayne Bay, the Everglades, and vital ecosystems.

Event Activity: The Event Organizer has engaged with experts in acoustical solutions, wildlife management, land conservation, and marine resources to provide information to guide them in planning the production of this Event. The engagement of highly-regarded environmental consulting firms and experts to assist surveys, studies, analyses, and plan executions also reflects the commitment by the Event Organizer to ensuring their continued adherence to the goal of the plan. They are sufficiently educated about the sensitive tropical coastal marine ecosystem and are implementing measures such as, but not limited to, restricting beach and wetland access through the construction of fencing structures, the use of educational signage regarding wildlife usage, sustainability messaging, and orienting stage and speaker attenuation systems in the best configuration possible to minimize direct noise to wetland and wildlife usage areas and in compliance with the License requirement specified in Section 1.3. Furthermore, the use of the educational signage and sustainability messaging as part of the Event Organizer's environmental marketing campaign will be effective in not only informing guests and crew of the sensitive ecosystems present at the Venues, but also to inspire guests and others to continue to protect those ecosystems and the planet as a whole. The Event Organizer shall also mandate staff and vendor training and education to have awareness of and to ensure compliance with the Event Organizer's environmental commitments.

Plan Goal 5: Restore and enhance more than 500 acres of coastal habits and wetlands, and preserve more than 24,000 acres of environmentally endangered lands.

Event Activity: The Event Organizer intends to leave the Venues in either the same condition or in better condition than baseline. The Event Organizer has also expended substantial resources and have implemented customized plans to sufficiently educate their guests and crews on the sensitive wetland and wildlife habitats around the Venues and the importance of conservation measures. The Event Organizer has adopted measures to eliminate the use of plastic straws commencing in 2019 and are mitigating the use of single-use plastic overall, with a plan to ultimately eliminate single-use plastic over subsequent years. The Event Organizer has developed partnerships with local organizations in order to pool resources and talents relative to achieving environmental objectives before and after the Event. Finally, HVKBP is the recipient of Special Event Application funds that will significantly contribute to future activities for the restoration and enhancement of the Park.

Plan Goal 6: Reinvent our solid waste system

Event Activity: While the Event's current remediation measures do not directly reinvent existing solid waste systems for the county, the Event Organizer is reinventing its own internal system by introducing a more comprehensive recycling and composting program. This program will be staffed by environmental organizations that will assure proper waste separation and disposal while educating attendees. Commencing in 2019, the Event Organizer will make available, encourage and promote hydration stations and Event reusable drinking bottle options and other similar solutions in an effort to reduce the use of one-time single-use plastic water bottles. Further, the Event's proposed comprehensive recycling and compost plan program is being developed for implementation at the 2019 Event which will contribute to the reduction in municipal waste.

Plan Goal 7: Reduce or divert 75 percent of our solid waste from landfills by 2020 through reusing, recycling, and generating electricity.

Event Activity: The Event's recycling and composting program will divert a significant portion of the waste that historically went entirely to landfill while educating attendees on proper waste disposal. In addition, the banning of polystyrene and plastic straws as well as single-use plastic mitigation efforts such as new vendor requirements, reusable water bottles and an expanded water refill station program, will significantly reduce overall waste and particularly focus on reducing non-recyclable or non-compostable waste. The Event Organizer is also developing circular economy art installation concepts that will re-purpose many plastics that are used on the grounds during this years' Event into artworks and supplies to be used in years to come. The Event Organizer will employ abundant use of recyclable containers deployed throughout the Venues. Clean-up crews will also sort trash into recyclable containers. The Event Organizer will, commencing in 2019, endeavor to minimize the use of plastic cups and will eliminate the use of plastic straws. It will use, to the maximum extent practicable, hydration stations and reusable drinking bottles to help minimize the use of single-use plastic water bottles.

Plan Goal 8: Use our land wisely, creating and connecting strong sustainable neighborhoods. Develop 15 urban center area plans and six multi-modal corridor master plans. Create four transit-oriented developments (TODs) on heavy rail and bus corridors. Develop level of service metrics to identify resident accessibility to parks and open space areas.

Event Activity: The Event Organizer has developed and presented to City officials on December 20, 2018, a preliminary MOT Plan. Public stakeholder comments have also been heavily considered during the development of the MOT Plan. There will be no private vehicle parking for general admission guests at the Venue on Virginia Key during the Event, with the exception of a limited area for drop off and pick up of disabled guests as well as handicapped parking and VIP parking. Subject to the foregoing, the only way to get on the Rickenbacker Causeway to attend the Event will be via limited private water craft access, ride share systems, special shuttle bus transportation, or water taxi. This plan is projected to significantly reduce traffic between downtown Miami and Virginia Key. Even though the traffic mitigation efforts may not directly create or connect sustainable neighborhoods, the Event itself will be a hub for sustainable

initiatives and messaging. It will also heavily encourage public transportation within those communications.

Plan Goal 9: Improve access through an interconnected network of shaded and safe bikeways and trails connected to neighborhoods, schools, employment centers, civic buildings, and other community destinations.

Event Activity: The location of the Event on Virginia Key is embodying the use of certain trail networks as a thoroughfare for transportation between the Venues. The secure and safe fencing of pedestrian trails are being used for guests to minimize impacts to wetland trails and busy roadways such as Rickenbacker Causeway. As mentioned, the preliminary Mitigation of Traffic Plan was developed and presented to City officials on December 20, 2018 to assist with traffic and pedestrian control. Partnerships have been developed with surrounding businesses regarding parking and access control to not adversely impact these existing businesses.

Plan Goal 10: Provide more transportation options, reducing the time we spend in our cars

Event Activity: For a vast majority of guests, the only way to get on the island to attend the Event will be via limited private water craft access, ride sharing, special shuttle bus transportation, or water taxi. No private vehicle parking options will be available to general admission guests (except for disabled and handicapped parking) during the Event.

Plan Goal 11: Add 10 million boardings to our public transportation system through increased services, and enhancing convenience, comfort, and timely service. Increase the percentage of total trips taken by walking or bicycling from 10 percent to 16 percent of all travel trips. Increase resident satisfaction with the availability of sidewalks for pedestrians to 65 percent or more and add 40 miles of bicycle trails and lanes.

Event Activity: As aforementioned, most guests will arrive at the Event via limited private water craft access, ride sharing, special shuttle bus transportation, or water taxi. In order to provide further public transportation options, the Metrorail and MetroMover's operating hours will be extended for commuting services to and from the Event and will mitigate traffic impact and significantly reduce traffic congestion in downtown Miami and on Virginia Key.

Plan Goal 12: Create green jobs. Cultivate an innovative and sustainable economic infrastructure that creates 20,000 green jobs by 2020 while building on our economic strengths and adding to our competitiveness in the global economy.

Event Activity: The Event Organizer has hired an in-house Senior Manager of Sustainability, creating its first-ever Sustainability Department. The Event Organizer is also creating a Sustainability Internship Program, in order to invite students from local universities with a passion for sustainability to learn from and grow with the Event Organizer's team. The Event Organizer also intends to provide significant education on its sustainable initiatives to its employees, temporary staff and vendors via sustainability trainings and internal communications from the Sustainability Department.

Plan Goal 13: Build on our international reputation to become a green enterprise destination. Increase the percentage of green hotels, eco-tourism, and hospitality related businesses.

Event Activity: The Event Organizer has a long-term vision of continuing to grow its sustainability, not only within its own operations but also via partnerships with sustainable brands both locally and internationally. As the Event Organizer develops these partnerships, an increasing number of fans will be exposed to, and hopefully participate in, sustainable tourism when they visit Miami.

Plan Goal 14: Raise awareness that sustainable living is healthy

Event Activity: In becoming entrusted with the protection of the unique environmental and historic elements of Virginia Key, the Event Organizer has realized that the actual scope of their responsibility and potential impact is much greater. The Event's guests are a captive and receptive audience from the moment they buy their ticket until months after the show. The Event Organizer recognizes its ability to use this

opportunity to spread the message of sustainability with the intention of creating positive changes in behavior for the health of the planet, and in turn, the health of every human being that lives on it.

Plan Goal 15: Plant more Florida-friendly and native trees and landscapes. Plant half a million trees by 2015 to achieve a 30 percent tree canopy by 2020 and encourage native, drought-tolerant landscaping to cool our communities, capture greenhouse gas (GHG) emissions, beautify our neighborhoods, and provide wildlife habitat.

Event Activity: The Event has no direct activities to promote this goal, but through its event planning and design, will preserve and protect the native coastal tropical ecosystems of South Florida. The Event Organizer is in the process of developing partnerships with local organizations in order to participate in restoration efforts on Virginia Key before and after the Event.

Plan Goal 16: Reduce GHG emissions by 10 percent by 2020, working toward 80 percent reduction by 2050 to advance the Cool Counties Program Commitment.

Event Activity: Abaseline energy assessment will be performed in 2020 in order to incorporate an increasing amount of renewable energy where possible starting in 2021. Over time, the intention is for these renewable, clean energy sources to drastically reduce Greenhouse Gas (GHG) emissions as compared to current energy sources. Other initiatives during the Event will also indirectly reduce GHG's such as the increased use of mass transit by restricting parking at the Venues as discussed above and single-use plastic mitigation efforts.

Plan Goal 17: Understand and respond to current and future climate change impacts. Integrate local climate change indicators with existing emergency management, storm water planning, and infrastructure planning.

Event Activity: While the Event does not necessarily need to account for storm water management concerns or infrastructure resilience due to its relative impermanence, the Event Organizer is aware that climate change impacts everyone, especially in the city of Miami. The efforts to reduce GHG emissions are the most urgent and direct approach the Event can take to respond to climate change, however the education and awareness campaigns also have the power to create global impact by shifting personal behaviors among guests who come from all over the world to experience the Event.

5. Documentation and Coordination with Regulatory Agencies and Non-profit Organizations

5.1. Introduction

Stakeholder coordination and public involvement has occurred for the Event. The Event Organizer has executed a Revocable License Agreement and other necessary authorizations and government approvals. The stakeholder coordination component has taken into consideration government agencies, Non-Profit organizations, Non-governmental organizations and members of the public. The purpose of stakeholder coordination is to introduce the Event and plans and to collaborate and engage members of the public on its new location. This coordination process has invited engagement of stakeholders to gather feedback during the review process. Many of the stakeholder coordination meetings have been voluntarily initiated by the Event Organizer to engage and communicate with members of the public. A list of stakeholder participants, dates of meetings, and a general description of the meeting is provided in Table 5.1 Stakeholder Coordination Meetings.

Table 5.1 Coordination Meetings

Meeting Date	Stakeholder Participants	Action	Purpose
November 7, 2018	Village of Key Biscayne Chief of Police	Stakeholder Meeting	Discuss the Event's relocation to Miami Marine Stadium and HVKBP and any potential impact the Event may have on the Village of Key Biscayne. The Chief requested to be part of the planning process and, since that meeting, the Chief has been included in such process, especially in reference to our Maintenance of Traffic Plan.
November 15, 2018	City of Miami, City Commission Meeting	Approval to execute License	City of Miami Commission approval to enter into a Revocable License Agreement with the Event Organizer for the Ultra Music Festival Event on Virginia Key.
December 12, 2018	Miami-Dade Department of Transportation, Miami-Dade Public Works, Miami-Dade Police Department, City of Miami Police Department, City of Miami Fire Department and the Village of Key Biscayne Police Department	Stakeholder Meeting	Discussed the Event, address concerns regarding traffic flow and received input for the Maintenance of Traffic Plan.
December 12, 2018	Miami Rowing Center Park Manager	Stakeholder Call	Discussed the intent to facilitate an easy transition between the Miami International Boat Show and the Event.
December 12, 2018	General Manager of Atlantica Seafood Restaurant and Market	Stakeholder Call	Spoke to the General Manager to ensure them that Event patrons will be on their best behaviour. Also discussed the possibility of closing Atlantica during the Event.
December 14, 2018	Catering Manager of Rusty Pelican Miami Restaurant and Whiskey Joe's Miami Bar and Grill	Stakeholder Call	Answer questions regarding the Event's relocation to the Miami Marine Stadium and HVKBP and to indicate that both establishments should receive good business from the Event.

December 17, 2018	University of Miami Rosenstiel School of Marine and Atmospheric Science's ("RSMAS") Emergency Manager, Director of Security and Assistant Director of Security	Stakeholder Meeting	Provided information about the Event and addressed their concerns about their campus being open on Friday, March 29, 2019. RSMAS indicated that all University of Miami students are allowed to park there, not just students that attend RSMAS and because of this, RSMAS discussed security and parking measures that will be in place for their campus. Further, RSMAS expressed concerns regarding the RSMAS's Experimental Hatchery ("UMEH"), which is located close to the Event's stages. We showed them where we are planning to erect our stages based on our site map and they asked if we could direct the speakers away from UMEH and we assured them that it would not be a problem.
December 17, 2018	Miami-Dade Parks Department Rickenbacker Causeway Division's supervisors and managers	Stakeholder Meeting	Met to address their concerns and to discuss the Event's impact, our projected site plan and the requirement of a Parks Recreation and Open Spaces Department permit.
December 17, 2018	Virginia Key Beach Park Trust and Executive Director	Stakeholder Meeting	The Event Organizer and their environmental and acoustical experts addressed any potential concerns and to share detailed information regarding the Event.
December 17, 2018	Virginia Key Beach Park Trust	Stakeholder Meeting	Public meeting and presentation to the Virginia Key Beach Park Trust regarding Ultra Music Festival.
December 18, 2018	Virginia Key Advisory Board	Stakeholder Meeting	Public meeting and presentation to the Virginia Key Advisory Board regarding Ultra Music Festival.
December 18, 2018	Historic Virginia Key Advisory Board and Executive Director	Stakeholder Meeting	The Event Organizer and their environmental and acoustical experts addressed any potential concerns and to share detailed information regarding the Event.
December 18, 2018	Miami-Dade County – Regulatory and Economic Resources	Pre-application Meeting	Pre-application and coordination meeting regarding the marginal floating dock structure at Miami Marine Stadium.
January 18, 2019	Florida Department of Environmental Protection	Permit Meeting	DEP was provided with the updated plans for the pending permit application.
January 3, 2019	United States Army Corps of Engineers	Pre-coordination Meeting	An official application was submitted with the USACE.
NA	National Oceanic and Atmospheric Administration[2]	Informational Meeting	Numerous attempts were made to contact every number on NOAA's directory, however due to the government shutdown, there has been no response.
January 4, 2019	Mayor of the Village of Key Biscayne	Stakeholder Call	Call to the Mayor to set up a meeting for January 7, 2019.
January 4 and 5, 2019	Village Manager of the Village of Key Biscayne	Stakeholder Call	Discussed the proposed Maintenance of Traffic Plan and requested her feedback on it.

January 7, 2019	Mayor of the Village of Key Biscayne	Stakeholder Meeting	Explained to the Mayor plans to stage the Event at the Miami Marine Stadium and HVKBP. Added the Mayor to the list of individuals for public deliverables, which included providing an updated Maintenance of Traffic Plan on January 10, 2019
January 8, 2019	Village Manager of the Village of Key Biscayne	Correspondence	Sent the Village Manager a letter responding to the Village of Key Biscayne's request for police overtime reimbursement.
January 8, 2019	Assistant General Manager of the Miami Seaquarium	Stakeholder Meeting	Discussed the Event's logistics. Currently in the process of finalizing a license agreement for use of their parking lot.
January 8, 2019	Owner of Virginia Key Outdoor Center	Stakeholder Meeting	Continued the dialogue from the December 18 meeting. The Owner explained her concerns about possibly having to close early the weekend of the Event, which we informed her would be based on our final site plan (which is still in the process of being finalized).
January 8, 2019	Key Biscayne Resident	Informational Meeting	Followed up with a Key Biscayne resident based on a question she posed to our acoustical expert during the December 18, 2018 Virginia Key Advisory Board Meeting.
January 9, 2019	Village Manager of the Village of Key Biscayne	Informational Email	Emailed her an updated Maintenance of Traffic Plan on January 9, 2019.
January 10, 2019	Owner Atlantica Seafood Restaurant and Market	Informational Meeting	Met with the Owner of Atlantica to discuss the Event's impact on the business and a potential partnership
January 11, 2019	Directors of Volunteer Cleanup, Surfrider and Debris Free Oceans	Informational Meeting	Discussed the progress on all of our environmental efforts. We first reviewed all efforts agreed upon in the Memorandum of Understanding ("MOU") and discussed status and execution plans. We then reviewed the efforts we are committing to above and beyond the MOU. Finally, we discussed each organization's activation at the Event's Eco-Village and how they could support us with environmental effort execution before, during and after the Event.
January 14, 2019	RSMAS's Director of Communications, Emergency Management Coordinator, Campus Safety Supervisor, Associate Dean for Infrastructure, Building Systems Engineer, Hatchery Manager Research Associate III and Professor in the Department of Marine Biology and Ecology	Stakeholder Meeting	The Event Organizer and the acoustical expert met with RSMAS's personnel to address their concerns regarding their UMEH. We added RSMAS to our list of individuals for public deliverables, which included providing them with an updated Maintenance of Traffic Plan. In addition, RSMAS gave us a tour of the UMEH so that we can become familiar with their facility.
January 15, 2019	City of Miami	Stakeholder Meeting	Met with City of Miami officials to alleviate concerns and give an update on the progress of Ultra Music Festival regarding the MOT Plan, Site Plan, Environmental Management and Remediation Plan and Safety and Security Plan.

January 16, 2019	President and Chief Executive Officer of Greater Miami & The Beaches Hotel Association to discuss the Event	Stakeholder Meeting	Discussed the Event, transportation plans and how we can partner together as we have in the past to provide accommodations and transportation for attendees from out of town.
January 22, 2019	Virginia Key Advisory Board	Stakeholder Meeting	Discussion and status update on MOT plan.

5.2. Non-profit Organizations

Stakeholder and non-profit organization coordination began November 2018 with stakeholder engagement anticipated through March 2019 for this Event. The Event Organizer will continue to coordinate with stakeholders throughout subsequent years and events. The Event Organizer is committed to including local non-profit organizations in planning efforts. Additionally, the Event Organizer is actively working to meet and address concerns raised by stakeholders and non-profit organizations regarding the Event.

5.3. Public Outreach Activities and Support

5.3.1. Concerns Received and Addressed

The relocation of the Event to Virginia Key has generated public interest and discourse that includes both support for and opposition to the Event at Virginia Key. The following discussion provides a summary of comments received regarding the relocation of the Event to Virginia Key and actions taken by both the Event Organizer to address these comments.

Comments received during the November 15, 2018 City of Miami Commission Meeting describe a wide array of concerns raised by meeting attendees but can generally be categorized into five distinct areas: management of traffic during the three-day Event, noise levels during the Event, environmental damage caused by the Event, health and safety of Event attendees, disturbing cultural or historical areas. The Event Organizer has addressed each of the five categories of concern with demonstrable actions that include:

1. Development of a Traffic Management Plan pursuant to section 4.15 of the Revocable License Agreement. The purpose of the Traffic Management Plan is to identify and alleviate both traffic congestion and traffic safety issues related to the Event. This plan will greatly reduce traffic congestion issues and increase the safety of both the Event attendees and the surrounding community.

2. The Event Organizer has contracted Trinity Consultants to prepare an acoustical model using CADNA-A to analyze potential impacts of sounds and to draft the corresponding Noise section of the Environmental Management and Remediation Plan.

3. The Event Organizer has contracted Cardno Inc. to prepare an Environmental Management and Remediation plan to address environmental concerns and remediate any potential environmental issues. Additionally, the Event Organizer has entered into a series of MOUs with non-profit organizations to undertake the following sustainability and environmental initiatives: no beach access to Event patrons, no polystyrene products or plastic straws, no balloons, education and awareness programs available at the Event, including waste bins for recycling, landfill, and compost, completion of site restoration obligations prior to the beginning of sea turtle nesting season, adopting a "leave no trace" policy for Event patrons, forming an environmental and Economic Advisory Board which will be comprised of environmental consultants, environmentalists, and environmental groups to minimize and mitigate the environmental impacts of the Event, and requiring each vendor to the same pledge or to provide a comparable program. Finally, all access to sensitive habitats identified by both Cardno and the Revocable License Agreement will be prohibited by Event fencing and security.

4. The Event Organizer has forged strong local partnerships with the City of Miami and Miami-Dade Police Departments. The Event Organizer is also coordinating closely with the Federal Bureau of Investigation Joint Terrorism Taskforce, Homeland Security, the U.S. Coast Guard, the City of Miami Fire Rescue, and the Village of Key Biscayne Police Department to ensure the safety of both Event patrons and the overall community. The Event Organizer is committed to providing a safe event for participants and will provide all necessary perimeter Event security as required by Section 13 of the Revocable License Agreement. Additionally, the Event Organizer requires Event goers to obtain a specialized wrist band, be 18 and over, and prohibits bags other than clear bags, with a maximum size of 13"x17", to prevent prohibited items into the Event. Entry into the Event utilizes a 3-point security check and entry consisting of: 1) identification check-point, 2) bag and pat down check-point, and 3) ticketing scan.

5. Historic and culturally important sites are found at both Miami Marine Stadium and the HVKBP. The Event Organizer will completely exclude access to areas identified by Cardno, the NRHP and Revocable License Agreement Exhibits D-1, D-2, and D-3 as culturally or historically significant. Event fencing and security will be used to prohibit all access to these areas during the duration of the Event.

Comments received during both the November 9, 2018 Village Podcast and the November 10, 2018 Message from Mike Davey on Ultra Music Festival (Village of Key Biscayne) Podcast also contain a number of concerns related to the production of the Event on Virginia Key. These concerns can also be categorized into four distinct areas: management of traffic during the three-day Event, noise levels during the Event, environmental damage caused by the Event, and the health and safety of event attendees. The Event Organizer have also addressed these concerns with the following demonstrable actions:

1. Development of a Traffic Management Plan pursuant to section 4.15 of the Revocable License Agreement. The purpose of the Traffic Management Plan is to identify and alleviate both traffic congestion and traffic safety issues related to the Event. This plan will greatly reduce traffic congestion issues and increase the safety of both the Event attendees and the surrounding community.

2. The Event Organizer has contracted Trinity Consultants to prepare an acoustical model using CADNA-A to analyze potential impacts of sounds and to draft the corresponding Noise section of the Environmental Management and Remediation Plan.

3. The Event Organizer has contracted Cardno Inc. to prepare Environmental Management and Remediation plan to address environmental concerns and remediate any potential environmental issues. Additionally, the Event Organizer has entered into a series of MOUs with non-profit organizations to undertake the following sustainability and environmental initiatives: no beach access to Event patrons, no polystyrene products or plastic straws, no balloons, education and awareness programs available at the Event, including waste bins for recycling, landfill, and compost, completion of site restoration obligations prior to the beginning of sea turtle nesting season, adopting a "leave no trace" policy for Event patrons, forming an environmental and Economic Advisory Board which will be comprised of environmental consultants, environmentalists, and environmental groups to minimize and mitigate the environmental impacts of the Event, requiring each vendor to the same pledge or to provide a comparable program. Finally, all access to sensitive habitats identified by both Cardno and the Revocable License Agreement will be prohibited by Event fencing and security.

The Event Organizer has forged strong local partnerships with the City of Miami and Miami-Dade Police Departments. The Event Organizer also is coordinating closely with the Federal Bureau of Investigation Joint Terrorism Taskforce, Homeland Security, the U.S. Coast Guard, the City of Miami Fire Rescue, and the Village of Key Biscayne Police Department to ensure the safety of both Event patrons and the overall community. The Event Organizer is committed to providing a safe Event for participants and will provide all necessary perimeter event security as required by Section 13 of the Revocable License

Agreement. Additionally, the Event Organizer requires Event goers to obtain a specialized wrist band, be 18 and over, and prohibits bags other than clear bags, with a maximum size of 13"x17", to prevent prohibited items into the Event. Entry into the Event utilizes a 3-point security check and entry consisting of: 1) identification check-point, 2) bag and pat down check-point, and 3) ticketing scan.

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Please Respect the Environment

About Cardno

Cardno is an ASX-200 professional infrastructure and environmental services company, with expertise in the development and improvement of physical and social infrastructure for communities around the world. Cardno's team includes leading professionals who plan, design, manage, and deliver sustainable projects and community programs. Cardno is an international company listed on the Australian Securities Exchange [ASX:CDD].

Cardno Zero Harm

Cardno ZERO HARM EVERY JOB. EVERY DAY.

At Cardno, our primary concern is to develop and maintain safe and healthy conditions for anyone involved at our project worksites. We require full compliance with our Health and Safety Policy Manual and established work procedures and expect the same protocol from our subcontractors. We are committed to achieving our Zero Harm goal by continually improving our safety systems, education, and vigilance at the workplace and in the field. Safety is a Cardno core value and through strong leadership and active employee participation, we seek to implement and reinforce these leading actions on every job, every day.

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