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January 21, 2020

Brian Rushforth
Chief of Staff
Office of Commercial Space Transportation
Federal Aviation Administration

Re: Environmental Review at SpaceX Launch Site at Boca Chica, Texas

Dear Mr. Rushforth,

On behalf of the Executive Office of the Western Hemisphere Shorebird Reserve Network (WHSRN), I would like to submit the following comments on the Environmental Review of the SpaceX launch site at Boca Chica, Texas. WHSRN is a site-based shorebird conservation initiative launched in 1985 whose mission is to conserve shorebirds and their habitats through a network of key sites across the Americas. The network is comprised of hundreds of partners working at 107 sites in 17 countries to conserve and manage over 38.2 million acres of critical habitats for shorebirds.

Harboring five WHSRN sites, the coast of Texas is well recognized as providing important habitat for hundreds of thousands of shorebirds. One of the most ecologically rich of these sites is Laguna Madre, on the Texas – Mexico border, stretching nearly 400 miles from Ports Mansfield, Texas to San Fernando, Mexico. It is a vast expanse of shallow, wind-swept wetlands separated from the Gulf of Mexico by a strand of barrier beaches. This unique area includes mangroves, upper tidal flats, grasslands, beaches, and algal flats – all supporting shorebirds throughout the year.

Immediately adjacent to the WHSRN site is Lower Rio Grande Valley National Wildlife Refuge, which includes the remote and pristine Boca Chica. Flocks of up to 100 of the federally endangered Piping Plover (*Charadrius melodus*) have been seen in this area. In addition, several species of beach-nesting birds breed in overwash areas. And Red Knots (*Calidris canutus*), listed as threatened under the Endangered Species Act, and other Arctic-nesting migratory shorebirds use the area as both a stopover site during migration and as wintering habitat.

Boca Chica is also the location of SpaceX's South Texas launch site which supports their exploration of commercial space transportation. As SpaceX's technology has rapidly advanced, there have been many changes to their operations and site design, including increased testing and the number of hours of area closures. These changes were not included in the original Environmental Impact Statement (EIS) conducted in 2014, without any public review. Now SpaceX is planning to build a launch pad for a much larger rocket – the Starship, significantly expanding the testing and use of the site, but without a detailed understanding of the impacts.

Each test, which can include an explosion, generates extreme noise that could potentially deafen birds or cause brain damage; a 'vapor' cloud that contains unknown combusted chemicals; and the risk of direct impacts from falling debris. There are also potential impacts from greater disturbance as a result of increased traffic and construction. Monitoring since the original EIS has been limited but there appears to have been poor compliance with the conditions established therein. To consider both the



changes since 2014 and proposed changes to accommodate the Starship, we recommend the implementation of a monitoring plan throughout the entire year; surveys after each launch event to assess impacts to habitat and wildlife; and appropriate mitigation measures for any documented impacts.

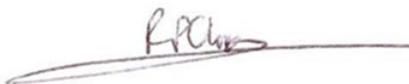
Shorebirds are showing the most dramatic declines of any group of birds. They are increasingly under threat from human disturbance, habitat loss and degradation, overharvesting, increasing predation, and climate change. Many countries, including the United States, have made significant investments in habitat restoration, management, and protection to ensure that they are providing the best habitat for these shared species. The impacts of SpaceX's activities on shorebirds are unknown and could contribute to these challenges by causing irreversible damage to important habitat at Boca Chica. The cultural and economic impacts will be felt in southern Texas, but also across the Americas where many sites receive cultural and economic benefits from diverse ecosystems that include the same shorebirds that use the Laguna Madre area.

The Maryland-Virginia Barrier Islands WHSRN site includes NASA's Wallops Flight Facility. In the 2015 Biological Opinion of the US Fish and Wildlife Service (it was determined that "Plovers, knots, and loggerheads are potentially impacted by ongoing rocket launches and related training, testing, and preparation; maintenance of existing buildings and infrastructure; shoreline restoration and construction of shoreline stabilization structures; and operation of UASs and aircraft overhead." Due to these impacts, NASA conducts extensive monitoring of protected species including nesting Piping Plovers, migrating Red Knots, and several species of sea turtle to understand wildlife at the facility and the impact of the activities at the site. This also includes post-mission surveys to determine any loss of wildlife or habitat impacts from launches. NASA also participates in conservation efforts in the area including predator exclosures and efforts to reduce disturbance from recreational users. Lessons from NASA's compliance with monitoring requirements and collaboration with conservation partners could serve as an example to SpaceX's EIS process at Boca Chica.

As habitat loss continues to be a significant threat for shorebirds, protecting the remaining areas of habitat is critical. Technological advances are also valuable, but if the SpaceX facility is to remain in this location, the WHSRN Executive Office recommends that a new EIS process be initiated to allow for a public process to review changes, assess impacts, and identify appropriate mitigation measures. This EIS could also consider the development of an accountability plan.

Please feel free to contact Laura Chamberlin, if you have further questions, at lchamberlin@manomet.org or 302-922-0682.

Sincerely,

A handwritten signature in blue ink, appearing to read "Rob Clay", is written over a horizontal line.

Rob Clay
Director of WHSRN Executive Office