



Bringing back the birds

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Dear Ms. Zee:

American Bird Conservancy (ABC) hereby respectfully requests that the Federal Aviation Administration (FAA) prepare a supplemental Environment Impact Statement (EIS) for SpaceX's Starship Super Heavy Project at the Boca Chica Launch Site ("the Super Heavy Project").

Introduction

As we show below, SpaceX's current and proposed activities are significantly different from those presented to the FAA when it issued its 2014 EIS and Record of Decision (ROD), and are creating (and will create) far more negative environmental, wildlife, and human safety impacts than what was originally planned. The current draft Programmatic Environmental Assessment (PEA) does not adequately address these impacts nor provide sufficient alternatives for consideration, and a full EIS is required under the National Environmental Policy Act ("NEPA") and FAA's published NEPA policies and procedures. Nor does the PEA adequately address what we believe are violations of the National Wildlife Refuge Improvement Act of 1997; the Preservation of Parklands statute, the Clean Water Act, and the Endangered Species Act.

The ecological importance of this region cannot be overstated. The SpaceX site is surrounded by critically important and sensitive habitat for many declining wildlife species, including the federally Threatened Piping Plover (designated critical habitat for which directly overlaps the site) and Red Knot. The Lower Rio Grande Valley National Wildlife Refuge (NWR), Boca Chica State Park, Brazos Island State Park, and Las Palomas Wildlife Management Area/Boca Chica Unit all surround the SpaceX site. These conservation areas are home to some of the country's most diverse communities of wind tidal flats, mid-delta thorn forest, and mid-valley riparian woodlands that support rare, endangered, and threatened species, making it critically important to ensure impacts to these natural resources are minimized. Furthermore, this area is an incredibly important region for migratory birds, with hundreds of thousands of birds – including numerous rare and federally Threatened and Endangered species – depending on Boca Chica habitat during fallouts when they need to rest and refuel before continuing on with their journeys.



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We begin with a review of the FAA's NEPA-implementing policies, showing that they require a full EIS. Then we discuss the many adverse environmental impacts of the Super Heavy Project that the EIS should address. And then we show that the Super Heavy Project appears to run afoul of four federal statutes, a subject that the full EIS should also address

I. FAA NEPA Policies and Procedures

FAA Order 1050.1F, effective 7/16/15, "serves as the [FAA's] policy and procedures for compliance with the National Environmental Policy Act (NEPA) and implementing regulations issued by the Council on Environmental Quality (CEQ)." Section 9.2, which is referenced in the FAA's 2014 EIS, states that a supplemental EIS is *not* needed if three conditions are met. Here, *all three* conditions are *not* met, and hence an EIS is required.

The first condition is: "The proposed Action conforms to plans or projects for which * * * a prior EIS has been filed and there are *no substantial changes in the [proposed] action that are relevant to environmental concerns.*" Section 9.2.c(1) (emphasis added).

The 2014 EIS examined the impacts of launching the Falcon 9 or Falcon Heavy rockets from Boca Chica, but that is no longer the plan. Now, SpaceX is already developing the integrated Starship/Super Heavy launch vehicle, which is taller and significantly larger than the Falcon rockets, containing 41 Raptor engines (combined) propelled by 10.1 million pounds of liquid oxygen and liquid methane. SpaceX is also proposing additional infrastructure expansion, including a redundant launch pad with 11 tanks, redundant landing pad, integration towers, tank structural test stands, desalination plant, support buildings and parking lots, power plant, trenching, payload processing facility, natural gas pretreatment system, liquefier, expanded solar farm, as well as a 500-hundred-hour addition to annual closings of State Highway 4, and Highway 4 pull-offs. These changes are "substantial" by any definition of the word and they are "relevant to environmental concerns." They were not previously accounted for in the 2014 EIS, and therefore a new EIS is required to ensure that the appropriate and legally required federal oversight is in place to protect the public interest.

We would add that, so far, SpaceX has provided inadequate information to evaluate the actual impacts of these expanded operations. Instead, amazingly, it has proceeded with construction activities and round-the-clock experimental testing for the Super Heavy Project even though the NEPA process remains incomplete. Moreover, a number of accidental explosions at the site have put human health and safety at risk, burned over 100 acres on national wildlife refuge lands, and scattered debris causing long term damage to the fragile tidal flats and associated habitats.



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The second condition is: “Data and analysis contained in the previous * * * EIS are *still substantially valid and there are no significant new circumstances or information relevant to environmental concerns* and bearing on the proposed action or its impacts.” Section 9.2.c(2) (emphasis added).

This second condition is related to the first and, for the reasons stated above, it has not been met. The substantial changes to the original project that the draft PEA identifies, coupled with the subsequent and widely varied impacts, make the 2014 EIS outmoded, irrelevant, and inaccurate. New impacts from the greatly revised Super Heavy Project should be analyzed appropriately and thoroughly to consider impacts to surrounding public lands, wildlife, and people.

The draft PEA does not accomplish this. It fails, altogether or substantially, to examine the greatly changed impacts relating to light, noise, sonic booms and overpressure, air pollution, CO2 emissions, stormwater runoff, explosions, and fires. Impact zones or closure areas should be re-examined and include larger swaths of land that would likely include portions of surrounding communities (i.e. South Padre Island, Port Isabel). This is especially important to human, wildlife, and environmental health since a permitted liquefied natural gas (LNG) export terminal is proposed for the Brownsville Ship Channel and SpaceX is planning to transport and store large amounts of propellant/fuel on site. These significant new circumstances make the analysis contained in the 2014 EIS “substantially *invalid*” in light of the “significant new circumstances or information relevant to environmental concerns” raised by the new Super Heavy Project.

The third condition is: “Pertinent conditions and requirements of the prior approval have been, or will be, met in the current action.” Section 9.2.c(3).

It is fair to say that the FAA has exercised little to no oversight over SpaceX activities and compliance with the terms and conditions of the 2014 ROD and the original FWS Biological Opinion.

To take one example, SpaceX’s road closures have greatly exceeded the limits set forth in the 2014 EIS, which were agreed to by SpaceX, the Texas General Land Office (TGLO), and Cameron County. Surpassing allowed closure hours is a violation of the Texas Open Beach Act. Moreover, SpaceX has consistently provided the public with short notice of closings and made frequent changes and revocations, making it difficult for any member of the public to regularly access the state parkland, national wildlife refuge, and public beach.

Moreover, on this subject, SpaceX is now requesting 800 hours of closure per year for Highway 4 for testing, launches, and debris cleanup. That is 500 more hours than the currently approved 300 hours. It will close the highway for 4 to 5 hours per day, Monday through Friday, for 32 weeks of the year. An EIS is required to fully analyze the notice that needs to be provided to the



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public, federal and state agencies, and any stakeholders who support land and wildlife management, as well as a need for strict adherence to a published schedule and a standardized way of reporting closure hours.

For another example of noncompliance, SpaceX is violating its 2014 lighting plan, putting a huge amount of nighttime light into the surrounding natural environment, impacting nesting sea turtles and migrating birds.

In short, **none** of the three conditions that must be met before the FAA may dispense with an EIS has been met here: there are **many** “substantial changes in the [proposed action] that are relevant to environmental concerns”; the data and analysis in the 2014 EIS are **not** “still substantially valid” because of “significant new circumstances or information relevant to environmental concerns and bearing on the” Super Heavy Project; and “[p]ertinent conditions and requirements of” the 2014 EIS have not been met. Section 9.2.c(1)-(3).

We turn now to specific impacts of the SpaceX project that are insufficiently addressed in the PEA and that must be addressed in an EIS.

II. Impacts That Must Be Addressed

Impacts to Habitat, Birds and Other Wildlife

The Super Heavy Project area is immediately adjacent to state parks lands, beaches, and a national wildlife refuge. It will affect listed and endangered species through impacts associated with noise, overpressure, construction, industrialization, traffic, explosions, lighting, habitat displacement and habitat disturbance. Many of birds and other wildlife have already been killed on Highway 4 where the increase in construction has led to an increase in traffic. The bird carcasses found on the side of the highway over the past two years include Snowy Plover, Common Nighthawk, Harris’s Hawk, Rose-breasted Grosbeak, and Eastern Meadowlark, all of which are designated as Birds of Conservation Concern by the U.S. Fish and Wildlife Service.

According to an analysis by Coastal Bend Bays & Estuaries Program, the federally Threatened Piping Plover population in the Boca Chica region has decreased by 54% over the past 3 years (2018-2021) since SpaceX set up operations testing and launching rockets.

The draft PEA states that noise and shock waves (far-field overpressure) may break windows on South Padre Island and Port Isabel, 5 miles away from the launch site. The PEA does not address the effects on birds, reptiles and mammals that are a half mile or less from the launch site. A full EIS is required to address this issue.



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Impacts on Climate Change

SpaceX and the FAA claim that the “proposed action is not expected to result in significant climate-related impacts.” But the Super Heavy Project is expected to emit 47,522 metric tons of carbon dioxide per year, with no mitigation proposed. The climate related impacts of the Super Heavy Project must be addressed in a full EIS.

Impacts on Public Safety and Property Damage

A launch failure analysis should be part of a full EIS to assess the risks to public safety and to the operations at the Port of Brownsville and off-shore operations. The draft PEA does not address this issue.

The PEA notes that predicted overpressure levels for a Super Heavy landing range from 2.5 pressure per square foot (psf) to 15 psf, but otherwise does not address this issue.. Brazos Island State Park, Boca Chica Bay, Boca Chica State Park, portions of the NWR, Boca Chica Village, and Tamaulipas, Mexico would experience levels up to 15 psf. Boca Chica Beach and the southern tip of South Padre Island are within the 6.0 psf contour. South Padre Island, including residences, Port Isabel, and the Port of Brownsville ship channel are included in the 4.0 psf contour. The potential damage that can occur at 4-6 psf includes damage to glass, plaster, roofs, and outside walls. The potential damage that can occur at 10+ psf is more severe.

Air Pollution Impacts

The Super Heavy Project is expected to emit enough carbon monoxide (102 U.S. tons per year) to make it a “major source” of pollution under Environmental Protection Agency (“EPA”) guidelines, and the proposed 250-megawatt power station will qualify as a major new source of air pollution under the Clean Air Act. An EIS is required to conduct a conformity determination to comply with air pollution laws, and the EPA should be engaged as a cooperating agency in its drafting.

Noise Impacts

The Center for Disease Control states that immediate hearing loss can occur at sound intensity levels of 120 dB. The Noise addendum to the PEA shows that portions of South Padre Island and Port Isabel will likely be exposed to sounds at 120 dB during Starship Orbital launches and landings. The PEA does not address the extent to which using water to suppress sound may adversely impact nearby communities, or whether other protections or mitigations may be required.

Nor does the PEA address how the sound intensities will impact birds, reptiles, and mammals immediately surrounding the launch site and in other impact zones/closure areas. A wildlife

professional with expertise in noise impacts to various wildlife should be enlisted in a new supplemental EIS to examine these impacts.

Light Impacts

SpaceX is already putting a huge amount of nighttime light into the surrounding natural environment, and the proposed infrastructure expansion will further illuminate the area at night, impacting nesting sea turtles and migrating birds. In addition, the illuminated integration tower will be a collision risk for disoriented migratory birds. A full EIS is required to examine these impacts and address the kinds of preventive and mitigating measures SpaceX should adopt to reduce light output at night, subjects not included in the draft PEA.

Water Impacts

The draft PEA says that “Surface water discharges from runoff during construction and operations would be managed according to requirements of the Texas Pollutant Discharge Elimination System * * * with minimal impact to ground water quality with stormwater treatment and industrial wastewater systems that are properly designed and operated in accordance with permit conditions.” There is (or was until perhaps recently)



already runoff going straight into the flats that does not appear to be filtered through any type of system. Accompanying is a photo taken by Coastal Bend Bays & Estuaries Program in June of 2021 showing discoloration of the water and proteinaceous foam, not clean storm water runoff. A new EIS should address this issue, and include the anticipated updated FWS’s Biological Opinion regarding SpaceX’s stormwater prevention and treatment plans.

Power Plant Impacts

The proposed gas-fired 250-megawatt power plant will be about 5.4 acres in size, have structures up to 150 feet tall, and operate continuously year-round, day and night. A power plant this big typically serves over 100,000 homes. This one will run a new desalination plant



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that will produce the millions of gallons of fresh water needed annually for sound and fire suppression during launches. Large amounts of electricity will also be used to make liquid oxygen from the air. A 250-megawatt power station would normally qualify as a major new source of air pollution under the Clean Air Act. The impacts of this plant and necessary mitigation measures must be fully disclosed and analyzed in a full EIS.

Natural Gas Impacts

It is unclear how the tens of millions of cubic feet of gas required daily will get to the Super Heavy Project site. Potential methods could include reusing a defunct natural gas pipeline running through the Lower Rio Grande Valley National Wildlife Refuge, drilling/fracking onsite, or trucking in natural gas, which would require thousands of tanker deliveries every year. *None of these* are addressed in the draft PEA.

Desalination Plant Impacts

The Super Heavy Project proposes to construct a 4300 square foot desalination plant, which would treat water from two new source wells and the existing well, and which would inject brine into an injection well some 2900 feet deep. The PEA provides no details about how the injection well will work or the impacts of injecting brine into the aquifer. Nor does the PEA describe if or how aquifer drawdown will impact connected water resources or other water rights holders/water users reliant on this aquifer. There is no information about how much energy will be required to run the desalination plant other than "the desalination process requires substantial quantities of energy". More details are needed for public review.

Social Justice Impacts

The negative impacts associated with loss of beach access, access to park and refuge lands, potential for property damage, and public health and safety concerns will disproportionately impact low-income communities and communities of color, which are the communities in closest driving proximity to the Super Heavy Project area. For many low income and Hispanic residents of Brownsville, Boca Chica is "their" beach – it is free, easily accessible, and closer than the beaches on South Padre Island. The PEA does not address these issues, nor how these adverse impacts might be mitigated.

The Carrizo/Comecrudo Tribe of Texas, the ancestral lands of which are being developed by the Super Heavy Project, has not been consulted at any point by SpaceX. Project analysis materials and notices have not properly been distributed in Spanish. It is unknown whether the governments or communities in Tamaulipas, MX have been made aware of the Super Heavy Project or invited to comment. The PEA is silent on these issues.



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III. Federal statutory violations

Under the National Wildlife Refuge Improvement Act of 1997, 16 U.S.C. 668dd-668ee, the Secretary of the Interior administers the National Wildlife Refuge System “for the conservation of fish and wildlife.” *Id.* § 668dd(a)(1). The Secretary can permit activities in a refuge when he/she determines “that such uses are compatible with the major purposes for which such areas are established,” *id.* 668dd(d)(1)(A), but the Secretary may not permit a new use of a refuge without a determination that “the use is a compatible use.” *Id.* 668dd(d)(3)((A)(i). “Compatible use” is defined to mean “a wildlife-dependent recreational use [such as hunting] or any other use of a refuge that * * * will not materially interfere with or detract from the fulfillment of the **mission** of the System or the purposes of the refuge.” 668ee(1) (emphasis added). “The mission of the System is to administer a national network of lands and waters for the conservation * * * of * * * fish, wildlife, and plant resources and their habitats * * * for the benefit of present and future generations of Americans.” *Id.* 668dd(a)(2). The Super Heavy Project is totally incompatible with the mission of the Lower Rio Grande Valley National Wildlife Refuge to conserve fish, wildlife, and plant resources for the benefit of the American public. To our knowledge, the Secretary of the Interior has never permitted the use that SpaceX plans to make of that Refuge, and, without that permission, SpaceX’s use of the Refuge violates the law.

23 U.S.C. § 138, “Preservation of Parklands,” declares that it shall be “our national policy that special effort should be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges. *Id.* 138(a). It imposes so-called “4(f) requirements” on the Secretary of Transportation, since they are taken from section 4(f) of the now-repealed [Department of Transportation Act \(Public Law 89–670; 80 Stat. 934\)](#). *Id.* 138(d). They require the Secretary to “develop[e] transportation plans and programs that include measures to maintain or enhance the natural beauty of the lands traversed,” and they forbid the Secretary from approving any project that “requires the use of any * * * land from a public park, recreation area, or wildlife and waterfowl refuge of national, [State](#), or local significance as determined by the Federal, [State](#), or local officials having jurisdiction thereof * * * unless (1) there is no feasible and prudent alternative to the use of such land, **and** (2) such program includes all possible planning to minimize harm to such park, recreational area, wildlife and waterfowl refuge.” *Id.* 138(a). Federal regulations state that a constructive use of property protected by the Act occurs when a project’s proximity impacts are so severe that the protected features of the land “are substantially impaired. 23 C.F.R. § 774.15(a). The FAA itself has recognized that “[potential causes of constructive use include shifts in user population because of direct use of bordering properties, and/or non-physical intrusions such as noise, air pollution, or other effects that would substantially impair the resource’s use.” FAA Office of Airports, *Environmental Desk Reference for Airport Actions* at Ch. 7, p. 6 (Oct. 2007) (https://www.faa.gov/airports/environmental/environmental_desk_ref/media/desk-ref.pdf). The Super Heavy Project is a “constructive use” if ever there was one, and requires a permit from the Secretary of Transportation, which does not exist.



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Section 404 of the Clean Water Act, 33 U.S.C. § 1334, requires the consideration of alternatives to any proposed filling or dredging of wetlands – which has in fact already occurred in this case – before the Army Corps of Engineers may issue a permit. The PEA identified only two alternatives: the Super Heavy Project, already well underway, and the No Action alternative. Accordingly, the Super Heavy Project is proceeding in violation of section 404.

Finally, given the demonstrated adverse impact on ESA-listed Piping Plovers mentioned above – more than a 50% decrease in the Boca Chica population in the three years since SpaceX arrived – the Super Heavy Project is violating and will continue to violate the ESA.

A new EIS should meaningfully address each of these statutory issues.

* * * * *

We appreciate your attention to these views and welcome an opportunity to contribute to a new supplemental EIS that would address the impacts of the Super Heavy Project, offer multiple alternatives, and solicit meaningful public comment. For additional information or questions, please contact American Bird Conservancy at info@abcbirds.org.

Sincerely,

Emily Jo Williams

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