

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA**

CENTER FOR BIOLOGICAL DIVERSITY,
378 N. Main Ave.
Tucson, AZ 85701,

AMERICAN BIRD CONSERVANCY,
8255 E. Main St.
Marshall, VA 20115,

SURFRIDER FOUNDATION,
942 Calle Negocio, Ste. 350
San Clemente, CA 92673,

SAVE RGV,
613 W. St. Charles
Brownsville, TX 78520-6303; and

THE CARRIZO/COMECRUDO NATION
OF TEXAS, INC.,
10221 Desert Sands, Ste. 206
San Antonio, TX 78216,

Plaintiffs,

v.

FEDERAL AVIATION
ADMINISTRATION,
800 Independence Ave, SW
Washington, D.C. 20591, and

BILLY NOLEN, in his official capacity,
800 Independence Ave., SW
Washington, D.C. 20591,

Defendants.

CV: 1:23-CV-01204

**Complaint for Declaratory
and Injunctive Relief**

INTRODUCTION

1. This case concerns whether the Nation's commitment to preserving our critical wildlife habitat and treasured coastal landscapes must be sacrificed as we reach out to explore the cosmos—a question with national, global, and even interstellar implications. It is also about whether regulators will hold powerful corporations accountable or allow them to disregard environmental laws simply because of their political and financial influence. As the Nation carries out the modern era of spaceflight, we must decide whether we will protect the wildlife and frontline communities that can be adversely affected by our desire to reach the stars, or whether we will leave a legacy of needless destruction in the scorching wake of rocket plumes.

2. Here, the Federal Aviation Administration (FAA), which has federal authority over the launching of vehicles into space, has authorized the SpaceX Starship/Super Heavy Launch Vehicle Program at Boca Chica, Texas, without complying with bedrock federal environmental law, without fully analyzing the significant environmental and community impacts of the SpaceX launch program—including destruction of some of the most vital migratory bird habitat in North America—and without requiring mitigation sufficient to offset those impacts.

3. On June 13, 2022, FAA issued a Final Programmatic Environmental Assessment and Finding of no Significant Impact/Record of Decision (FONSI/ROD) for the SpaceX Starship/Super Heavy Launch Vehicle Program, which approved SpaceX's plan to launch 20 Starship/Super Heavy rockets per year over the next 5 years, along with tank tests, static fire engine tests, and construction of additional launch related infrastructure. On April 14, 2023, the FAA issued a Commercial Space Transportation License to SpaceX, which, relying on the FONSI/ROD, allowed the company to launch the first flight of the Starship-Super Heavy

vehicle, and to undertake pre-flight ground operations, such as tank testing and static fire tests, over the next 5 years.

4. The Super Heavy is the world's most powerful rocket. It holds up to 3,700 metric tons of liquid methane for propulsion, a potent greenhouse gas that will need to be vented into the atmosphere by SpaceX. The launching of these rockets results in intense heat, noise, and light that adversely affects surrounding habitat areas and communities, which include designated critical habitat for federally protected species as well as National Wildlife Refuge and State Park lands.

5. SpaceX undertook the first launch of the Starship/Super Heavy rocket on April 20, 2023. Just minutes into the launch, the rocket exploded. Furthermore, the launch pad was destroyed, scattering debris and ash over a large area, including adjacent lands that provide habitat for endangered species. While the FAA subsequently stated that it was temporarily grounding the rocket, it has not withdrawn or modified the FONSI/ROD and SpaceX has stated its intent to continue the program with further launches in the coming months. FAA has not announced any plans to initiate a supplemental review process pursuant to NEPA to consider the human health and environmental impacts associated with the explosion, including reports of sand, ash, and concrete being blown up to several miles away and outside the area that FAA had previously considered.

6. The area surrounding the SpaceX facility at Boca Chica is a biologically diverse and essential habitat area for many species, including federally protected wildlife and animals that are considered sacred to the Carrizo/Comecrudo People, such as the critically endangered ocelot. The SpaceX facility is smack in the middle of publicly owned conservation, park, and recreation lands, including a National Wildlife Refuge, two State Parks, a State Wildlife

Management Area, and a State Coastal Preserve. These lands are of extraordinary conservation value for a range of federally and state listed wildlife and other protected species such as migratory birds. Bird species from both the Central and Mississippi flyways converge there, making it an essential wintering and stopover area for migratory birds as they move north and south each year.

7. SpaceX activities authorized in the FONSI/ROD have and will adversely affect the surrounding wildlife habitat and communities. In addition to harm from construction activities and increased vehicle traffic, rocket launches result in intense heat, noise, and light pollution. Furthermore, the rocket launches and testing result in explosions which spread debris across surrounding habitat and cause brush/forest fires—including one that recently burned 68 acres of adjacent National Wildlife Refuge. The FAA calls these explosions “anomalies,” but in fact they occur frequently, with at least 8 over the past 5 years. FAA has acknowledged that many more such “anomalies” are expected over the next 5 years. The U.S. Fish and Wildlife Service has found that prior SpaceX rocket explosions harmed protected wildlife and designated critical habitat in violation of the Endangered Species Act (ESA).

8. SpaceX activities also require frequent closures of the nearby Boca Chica Beach, which provides the public free use and enjoyment of a largely undeveloped and secluded coastline along the Gulf Coast. The only access road has been closed on over 100 different dates per year to accommodate SpaceX activities, and the FAA has allowed such closures to continue. These closures have a significant adverse impact on the local community, including the Carrizo/Comecrudo Nation of Texas, which considers Boca Chica a sacred site, and others that rely on the Beach for recreation and subsistence fishing.

9. The FAA's Chief of Staff for the Office of Commercial Space Transportation initially stated that the FAA planned to conduct a new environmental impact statement (EIS) for the Starship/Super Heavy Launch Vehicle Program to analyze the environmental impacts of the program pursuant to the National Environmental Policy Act (NEPA); however, the FAA subsequently delegated that decision to SpaceX and did not prepare an EIS to analyze the launch program, even though permitting SpaceX to launch the largest rockets known to humankind is the type of significant federal action that requires full analysis in an EIS. Rather, based on SpaceX's preference, FAA relied on a programmatic environmental assessment (PEA) prepared by SpaceX for NEPA compliance—a considerably less thorough analysis intended only to determine whether an EIS is required—and issued a mitigated finding of no significant impact (FONSI). A mitigated FONSI suggests that the proposed action would have significant environmental impacts, but that certain required mitigation efforts would reduce those impacts such that an EIS is not required.

10. The proposed mitigation measures in the PEA are insufficient in many respects, and the FAA failed entirely to explain how the proposed mitigation measures would reduce the considerable environmental impacts of the launch program below the level of "significance" for purposes of NEPA.

11. Many of the proposed mitigation measures are inadequate to prevent the SpaceX launch program from causing significant environmental harm. For example, FAA failed to ensure that the environmental impacts from "anomalies" would be sufficiently mitigated, requiring only after-the-fact consultation with expert agencies, such as the Fish and Wildlife Service, about recovering exploded rocket fragments from adjacent habitat areas. No mitigation efforts have been imposed to prevent or minimize "anomalies" from occurring in the first place,

or to reduce the direct impacts from debris raining down on ESA-designated critical habitat or the resulting brush fires. Likewise, the PEA does not include adequate mitigation to address impacts to sensitive wildlife, such as the restoration and enhancement of habitat affected by the noise, heat, and light from rocket launches.

12. FAA also violated NEPA by failing to consider a reasonable range of alternatives. It considered only SpaceX's proposed project and a "no action" alternative. It did not consider an alternative with fewer launches per year to minimize and mitigate the impacts of the launch program, nor did it provide sufficient support for eliminating the Kennedy Space Center as a viable alternative location to the Boca Chica site, even though SpaceX has apparently been modifying a launch pad at Kennedy Space Center to accommodate Starship rockets and has itself suggested Kennedy as an alternative launch site.

13. FAA also failed to take a hard look at the environmental impacts of the SpaceX launch program, as NEPA requires, including increased light, heat, and environmental pollution, as well as risk of wildfires, damage to critical habitat, and the launch program's contribution to climate change.

14. In sum, the environmental impacts of the Starship/Super Heavy Launch Vehicle Program cannot be reduced through mitigation such that FAA can ensure that there will not be significant harm from the launch program, and FAA failed entirely to even address how the proposed mitigation could achieve that level of protection. Therefore, the FAA's failure to fully consider and address the impacts of the Starship/Super Heavy Launch Vehicle Program through an EIS (including the impacts of the failed April 20 launch), and its failure to consider alternatives that would reduce the impacts of the launch program, was arbitrary and capricious, in violation of NEPA and the Administrative Procedure Act (APA). The Court should vacate the

FONSI and accompanying Record of Decision, and remand with instructions that the FAA perform a full EIS.

JURISDICTION AND VENUE

15. This case arises under the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 et seq., and the Administrative Procedure Act (APA), 5 U.S.C. §§ 701-706. This Court has jurisdiction over this action pursuant to 28 U.S.C. § 1331 (federal question) and 28 U.S.C. § 1346 (action against the United States). The Court may grant the relief requested under the APA, 5 U.S.C. §§ 701–706, and 28 U.S.C. § 2201-02 (declaratory and injunctive relief).

16. Venue is appropriate in this Court under 28 U.S.C. § 1391(e)(1) because FAA resides in this judicial district.

PARTIES

Plaintiffs

17. Plaintiff Center for Biological Diversity (the Center) is a national nonprofit organization that works through science, law, and policy to secure a future for all species, great or small, hovering on the brink of extinction. The Center has over 87,000 members worldwide. The Center has worked for decades to safeguard habitats for people, plants, and animals. The Center's members value and benefit from rare species' continued existence in the wild and are harmed by industrial development and associated trends like global climate change, water degradation, and habitat loss that threaten wild species' survival and recovery. The Center has worked for years to protect wildlife that will be harmed by SpaceX's Starship/Super Heavy Launch Vehicle Program, including migratory birds and other protected species that rely on the Boca Chica area.

18. Plaintiff American Bird Conservancy (ABC) is a nonprofit organization dedicated to conserving wild birds and their habitats throughout the Americas. ABC has been working for nearly thirty years to protect threatened birds from population decline. ABC members derive recreational, conservation, aesthetic, and other benefits from the ecosystems and species of the Gulf of Mexico and its coastline, including Boca Chica Beach, the Lower Rio Grande Valley National Wildlife Refuge, Brazos Island State Park, and Las Palomas Wildlife Management Area – Boca Chica Unit, which all surround the Space X site.

19. Plaintiff Surfrider Foundation is a grassroots, nonprofit organization dedicated to the protection and enjoyment of the world's ocean, waves and beaches for all people. Surfrider has more than 350,000 supporters and members, 79 local chapters, and 92 school clubs in the United States, and maintains five local chapters in Texas, including the South Texas Chapter based on South Padre Island. Surfrider members reside, recreate, use, and otherwise regularly access Boca Chica Beach and have been negatively impacted by the SpaceX operations, including the frequent beach closures. Surfrider members also look for, study, photograph, and enjoy marine and terrestrial species in Cameron County, including the piping plover and several species of sea turtles that are likely to be harmed by SpaceX activities. For example, Surfrider has members who visit Boca Chica Beach and the South Texas coast often to surf, fish, and otherwise explore the coast. Surfrider member's future use and enjoyment of Boca Chica Beach and the Cameron County coastline depends on healthy coastal ecosystem and accessible beaches.

20. Plaintiff Save RGV is a nonprofit organization that advocates for environmental justice and sustainability through addressing the causes and consequences of habitat loss and climate change that affect the health and well-being of the entire Rio Grande Valley community.

Through its advocacy, research, and publications, Save RGV promotes, monitors, and preserves

wildlife and its habitat and protects air and water quality and the natural resources of the Rio Grande Valley. Save RGV also serves to protect and defend the public's right to access public lands, which includes Boca Chica State Park and beach.

21. Plaintiff the Carrizo/Comecrudo Nation of Texas, Inc. is a Texas nonprofit membership organization dedicated to serving the cultural, social, educational, spiritual, linguistic, economic, health, and traditional needs of its members and descendants of the Carrizo/Comecrudo Nation of Texas and other indigenous or Native American groups. The Tribe members live by their mission of preserving, maintaining, protecting, and offering services that will better their tribal communities to overcome the erasure of the Original People of Texas. The Tribe promotes wellness and health by providing services in times of crisis. The Tribe seeks to protect ancestral lands and relatives and to honor their ancestors. Boca Chica Beach and the area surrounding the beach are vital and sacred to the Carrizo/Comecrudo People and their ancestral traditions. The Tribe regularly holds ceremonial life ways at Boca Chica Beach, including during the equinox and solstice. These ceremonies typically involve between 20 and 30 of the Tribe's members, during which the members leave offerings for ancestors at the beach.

22. In bringing this lawsuit, Plaintiffs stand in the shoes of members who live, work, and recreate in places threatened by SpaceX's activities at Boca Chica and who use, study, and cherish the land, water, wildlife, and other resources that will be irrevocably damaged by the activities permitted by the FAA. Plaintiffs have numerous members who live in areas directly affected by these activities and/or visit the area to observe wildlife, and Plaintiffs' members and staff include individuals who study and advocate for better protection of wildlife and other resources threatened by SpaceX's activities permitted by FAA. The FAA's failure to comply

with the requirements of NEPA delays, avoids, and undermines protections that are necessary to secure Plaintiffs' interests in the habitats and wildlife impacted by the SpaceX launch program.

23. Plaintiffs have members whose interests are adversely affected by direct, indirect, and cumulative harm from the FAA-authorized activities to habitat areas that such members use and enjoy, including as habitat for ESA-listed wildlife. For example, Mary Angela Branch—who grew up in Brownsville and is a member of the Center, ABC, and Save RGV—regularly visits the Boca Chica area to enjoy the beach and to swim, picnic, fish, and view wildlife, including protected birds. She plans to continue visiting the area; however, her ability to enjoy Boca Chica beach and the surrounding areas and the wildlife they support has been, and will continue to be, adversely affected by SpaceX activities, including through closures to accommodate SpaceX construction and launch activities as well as from the noise, heat, light, explosions, and fires associated with such activities.

24. Plaintiffs also have members that have researched, studied, observed, and sought protection for habitats and species that are adversely affected by the SpaceX activities authorized by FAA. For example, Jim Chapman, a member of Save RGV who lives in Weslaco, TX, works to protect the Santa Ana and Lower Rio Grande Valley National Wildlife Refuges, and advocates for the animals that use the tracks of brush and forest habitat to migrate between populations. Mr. Chapman is highly invested in the preservation of the Boca Chica area, as it is essential for many of the native wildlife which he seeks out and enjoys. Mr. Chapman regularly visits the Boca Chica area to view wildlife, particularly birds such as the protected plovers and migratory species that rely on the area. Mr. Chapman is passionate about the native wildlife and enjoys exposing people to the unique ecosystems of the region. His interests in observing and protecting the Boca Chica area have been, and will continue to be, adversely affected by the SpaceX

activities permitted by FAA, including harm from closures, increased vehicle traffic and resulting collisions with wildlife, the intense noise, heat, and light from rocket launch and testing activities, and “anomalies.”

25. Plaintiffs’ members have visited and observed or sought out species that are imperiled by SpaceX activities, and enjoy hiking, fishing, and observing wildlife in areas that are impacted by such activities. Plaintiffs’ members intend to continue to visit and observe, or attempt to visit and observe, these areas and species in the near future. For example, Bryan Newman—a member of the Center—lives in Minnesota, but has travelled to south Texas, including the Laguna Atascosa National Wildlife Refuge directly adjacent to the SpaceX facility at Boca Chica, in order to observe wildlife, including ESA-listed piping plovers as well as the many migratory bird species that rely on the Boca Chica area, and he plans to return to the area in the Spring of 2023 to once again observe wildlife. While visiting the area in March of 2021, Mr. Newman watched a SpaceX rocket launch from Isla Blanca, which ended up exploding in a fiery blast. Mr. Newman derives personal, aesthetic, moral, and recreational benefits from the continued existence of wildlife in the Boca Chica area. The degradation of habitat or the loss of wildlife from SpaceX’s activities will harm Mr. Newman’s interests in observing and protecting the wildlife of this critically important area.

26. FAA’s approval of the SpaceX launch program at Boca Chica therefore threatens the use, enjoyment, and economic value of property owned by Plaintiffs’ members, as well as the lands and waters that members use and enjoy both as a resource and for the habitat they provide for plants and animals. The impacts from SpaceX construction activities and rocket launches, including “anomalies,” would interfere with members’ use and enjoyment of the Boca Chica area and the wildlife it supports.

27. Plaintiffs' ability to use and enjoy the area around the SpaceX launch facility—including public lands and beaches that are intended for public use, such as state parks and National Wildlife Refuge lands—is also directly impeded by the SpaceX launch program due to closures of the area to accommodate construction of the facility as well as rocket launches. These closures adversely affect Plaintiffs' members' interests in continuing to use these areas for recreation. For example, the closures have adversely affected Mrs. Branch, who regularly visits Boca Chica Beach, and whose visits have been cut short or cancelled due to unannounced closures.

28. The beach closures have also impacted the Carrizo/Comecrudo Nation's ability to hold their traditional ceremonial life ways and leave offerings for their ancestors. For example, Juan Mancias, a member of the Tribe, has been prevented from accessing the beach, a space sacred to him, to leave offerings to his ancestors, because of the frequent beach closures that have occurred for purposes of SpaceX activities. Participating in activities that are spiritually sacred to him depends upon his ability to access Boca Chica Beach; therefore, the closures directly affect Mr. Mancias's cultural, social, and spiritual interest in the area.

29. Plaintiffs' members thus derive scientific, recreational, spiritual, and aesthetic benefits from the areas affected by SpaceX activities. Their interest in maintaining the wildlife and habitats that would be affected by SpaceX activities is entirely dependent on the continued existence of healthy, sustainable, and accessible ecosystems and populations. Any activities that degrade or diminish these areas, or that kill, injure, harm, harass, or displace wildlife or that close beach access, interfere with Plaintiffs' members' use and enjoyment of the areas and species.

30. Plaintiffs' members include scientists who study various threatened and endangered species, and whose interests in studying and enjoying these species and their habitats are entirely dependent on the continued existence of such species. Any action that interferes with and harms these species also harms those members' interests and enjoyment in studying those species. Any loss of individuals or habitat from SpaceX activities would hamper their ability to undertake such research in the future, thereby harming their academic and aesthetic interests in those species.

31. Plaintiffs have also suffered procedural and informational injuries from Defendants' violations. These injuries are connected to Plaintiffs' substantive recreational, scientific, spiritual, and aesthetic interests. Plaintiffs' members and staff rely on Defendants to comply with the requirements of NEPA. Plaintiffs rely on laws such as NEPA to achieve their organizational purposes, including monitoring the impacts of agency actions on the environment and species; monitoring legal compliance concerning environmental management; educating members, directors, staff, and the public concerning species management and the state of the environment; and advocating for policies that protect habitats and wildlife.

32. Plaintiffs include non-profit conservation organizations with limited resources that can be dedicated to their core mission to protect the environment, imperiled species, and the habitats upon which they rely. Defendants' actions impede Plaintiffs' ability to carry out their fundamental missions, and directly undercut decades of successful work by Plaintiffs to enforce environmental laws that protect the interests of their members.

33. Defendants' actions have also stifled the flow of data on impacts to the environment from SpaceX activities that are vital to Plaintiffs' efforts to conserve and protect the environment. The FAA's failure to comply with its NEPA obligations is therefore harming, and

will continue to harm, Plaintiffs by interfering with Plaintiffs' core organizational missions and by requiring them to divert their limited resources and personnel away from other activities in an attempt to fill the gap left by the FAA.

34. These are actual, concrete injuries to Plaintiffs, caused by the FAA's failure to comply with NEPA. The interests and organizational purposes of Plaintiffs and members are directly and irreparably injured by Defendants' violations of law as described herein. Unless this Court grants the requested relief, harm to the environment will continue to accrue, and the aesthetic, recreational, educational, professional, scientific, spiritual, and conservation interests of Plaintiffs and their members will continue to be adversely affected.

35. The relief Plaintiffs seek will redress their injuries by requiring the FAA to comply with NEPA. This relief will give Plaintiffs and their members more comprehensive and complete information by requiring the FAA to complete an EIS and thereby provide Plaintiffs and their members with more information regarding SpaceX's threats to habitats, protected species, and other valued resources. It will allow Plaintiffs, their members and supporters, and others who are concerned about SpaceX activities, to advocate more effectively for changes to mitigate the adverse impacts of the Starship/Super Heavy Launch Vehicle Program.

Defendants

36. Defendant FAA is the federal agency charged with administering permits for commercial space launch activities. The FAA is headquartered in Washington, D.C. It is required to comply with NEPA when taking any action significantly affecting the environment.

37. Defendant Billy Nolen is the acting Administrator of the FAA, and is headquartered in Washington, D.C. Plaintiffs bring this action against Mr. Nolen in his official

capacity only. The Administrator of the FAA is required to comply with NEPA when taking any action significantly affecting the environment.

LEGAL BACKGROUND

The National Environmental Policy Act

38. NEPA is “our basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). NEPA’s goals are to (1) “prevent or eliminate damage to the environment and biosphere,” (2) “stimulate the health and welfare” of all people, and (3) “encourage productive and enjoyable harmony between [hu]man[kind] and [the] environment.” 42 U.S.C. § 4321.

39. In creating NEPA, Congress recognized that “each person should enjoy a healthful environment” and the statute therefore requires that the federal government use all practicable means to “assure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings,” and to “attain the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences.” *Id.* § 4331(b)–(c).

40. To fulfill these purposes, NEPA requires that: (1) agencies take a “hard look” at the environmental impacts of their actions before they occur, thereby ensuring “that the agency, in reaching its decision, will have available, and will carefully consider, detailed information concerning significant environmental impacts,” and (2) “the relevant information will be made available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.” *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

41. NEPA seeks to ensure “that environmental information is available to public officials and citizens before decisions are made and before actions are taken” and to “help public

officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.” 40 C.F.R. § 1500.1(b), (c).

When the federal government acts before fulfilling its NEPA obligations, courts may set the action aside until the government complies with NEPA.

42. The purpose of the NEPA process is also to inform federal agency decision-makers and the public of the “reasonable alternatives” that would “avoid or minimize adverse impacts or enhance the quality of the human environment.” *Id.* § 1502.1. This analysis of alternatives is the “heart” of NEPA, where the agency should “present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options.” *Id.* § 1502.14. The agency must “[r]igorously explore and objectively evaluate all reasonable alternatives.” *Id.* § 1502.14(a), (d).

43. NEPA accordingly requires all federal agencies to prepare a “detailed statement” for any “major Federal actions significantly affecting the quality of the human environment.” 42 U.S.C. § 4332(2)(C). This statement—the EIS—must describe the environmental impacts of the proposed action. *Id.* § 4332(2)(C)(i), (ii). The EIS is an “action-forcing device” that ensures NEPA’s goals “are infused into the ongoing programs and actions” of the federal government. 40 C.F.R. § 1502.1.

44. To determine whether a proposed action significantly affects the environment, and therefore whether an EIS is required, the lead federal agency may first prepare an environmental assessment (EA). *Id.* §§ 1501.5.

45. The lead agency must take a “hard look” at the relevant environmental concerns and alternatives to the proposed action, and must consider short and long-term effects, both

beneficial and adverse effects, effects on public health and safety, and effects that would violate Federal, State, Tribal, or local law protecting the environment. 40 C.F.R. § 1501.3.

46. If the agency determines, after preparing the EA, that the proposed action does not require preparation of an EIS, it must then prepare a finding of no significant impact (FONSI) detailing why the action “will not have a significant effect on the human environment.” 40 C.F.R. § 1501.6. Courts have allowed agencies to prepare a “mitigated FONSI” where the action would otherwise have significant impacts if the agency can show that they can be mitigated so that that they no longer pose significant environmental harm. However, if the EA indicates that the federal action may significantly affect the quality of the human environment, the agency must prepare an EIS.

47. In determining whether to prepare an EIS, the agency must “consider every significant aspect of the environmental impact of a proposed action.” *Baltimore Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). A determination that significant effects on the environment will in fact occur is not essential: an EIS must be prepared if substantial questions are raised whether a project *may* have a significant effect upon the environment. *See* 42 U.S.C. § 4332(2)(C) (requiring an evaluation of “any adverse environmental effects which cannot be avoided should the proposal be implemented,” which must examine the environmental impact of the proposed action “to the fullest extent possible”) (emphasis added); 42 U.S.C. § 4332(2)(F) (requiring agencies to consider the “worldwide and long-range character of environmental problems”).

48. NEPA requires federal agencies to analyze both the probability of a given harm occurring and the consequences of that harm if it does occur. *New York v. Nuclear Regulatory Comm’n*, 681 F.3d 471, 482 (D.C. Cir. 2012). Agencies cannot avoid their responsibility to

consider future effects by claiming they are uncertain, because NEPA requires some element of predictive behavior. *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (“NEPA analysis necessarily involves some ‘reasonable forecasting,’ and . . . agencies may sometimes need to make educated assumptions about an uncertain future.”) (citation omitted).

49. NEPA compliance requires federal agencies to provide an opportunity for public participation. *See* 40 C.F.R. § 1506.6 (the agency must “[m]ake diligent efforts to involve the public” in preparing environmental documents, give “public notice of . . . the availability of environmental documents so as to inform those persons . . . who may be interested or affected,” and “[s]olicit appropriate information from the public”).

50. The NEPA regulations also require an agency to supplement its analysis where new information or circumstances result in significant environmental impacts not evaluated in the prior documents. 40 C.F.R. § 1502.9., FAA Order 1050.1F, 9-3.

The Administrative Procedure Act

51. The APA provides for judicial review of agency actions such as those at issue here pursuant to NEPA. A reviewing court shall “hold unlawful and set aside” any agency action found to be “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law,” or that was promulgated “without observance of procedure required by law.” 5 U.S.C. § 706(2)(A), (D).

52. The APA confers a right of judicial review on any person who is adversely affected by agency action. 5 U.S.C. § 702.

FACTUAL BACKGROUND

The Boca Chica Area

53. The SpaceX facility is surrounded by publicly owned conservation, park, and recreation lands including Boca Chica State Park, Brazos Island State Park, the Lower Rio Grande Valley National Wildlife Refuge, the South Bay Coastal Preserve, and the Las Palomas Wildlife Management Area (Boca Chica Unit). These conservation areas are home to some of the country's most diverse wildlife communities, including wind tidal flats, mid-delta thorn forest, and mid-valley riparian woodlands that support rare, threatened, and endangered species, including imperiled migratory birds and sea turtles.

54. The Lower Rio Grande Valley National Wildlife Refuge (LRGV)—directly adjacent to the Boca Chica launch site—is considered one of the most biologically diverse regions in North America and it provides some of the most important habitat for migratory birds in the U.S. During migration, bird species from the Central and Mississippi flyway converge on this area, making it an essential stopover for migratory birds.

55. The Boca Chica tract of the Refuge is a particularly important link of the Lower Rio Grande Valley Wildlife Corridor. It provides important habitat for migratory birds and is one of the few places where the Kemp's Ridley sea turtle, the most critically endangered sea turtle in the world, comes ashore to nest on refuge beaches in the spring and summer.

56. The area surrounding the SpaceX launch site contains critically important and sensitive habitat for many wildlife species, including the federally threatened piping plover. The U.S. Fish and Wildlife Service has designated critical habitat for piping plovers that directly overlaps with the Project site. Other federally protected species rely on the area as well, including red knots, northern Aplomado falcons, Gulf Coast jaguarundi, ocelots, and Kemp's Ridley, hawkbill, leatherback, loggerhead, and green sea turtles.

57. The Boca Chica area and its wildlife are sacred to the Carrizo/Comecrudo People. Boca Chica is considered by the Tribe to be the actual birthing place of their first woman and is therefore a central part of their creation story. Indeed, many of the Tribe's prayers and ceremonies are connected to the Boca Chica area and its wildlife, such as the ocelot, which is a sacred animal to the Tribe.

58. Boca Chica State Park and Beach is a popular public beach on an 8-mile stretch of sand on the South Texas coast. The Beach is a significant coastal resource for the community to enjoy surfing, fishing, wildlife viewing, beach walking, picnicking and other beachgoing activities and coastal recreation. The Beach offers an open space site for residents of nearby Brownsville and South Padre Island, as well as other residents and visitors to Cameron County on the South Texas coast. The Beach provides the public with free wildlife-dependent recreation, including wildlife observation, photography, fishing, environmental education, and interpretation.

59. Other lands in the vicinity of the SpaceX facility that the FAA acknowledges would be impacted by SpaceX activities likewise provide important habitat for wildlife, including federally listed species. For example, the nearby Laguna Atascosa National Wildlife Refuge provides habitat for the endangered ocelot, jaguarundi, and northern aplomado falcon as well as threatened and endangered sea turtles and shorebirds. It is also a premier bird-watching destination with more recorded species of birds than any other refuge in the National Wildlife Refuge System. The Refuge also provides habitat for the largest population in the United States of ocelots, making it the center for conservation and recovery efforts for this endangered cat.

The Environmental Impacts of the SpaceX Launch Program

60. FAA issued a its Final PEA and Finding of no Significant Impact/Record of Decision (FONSI/ROD) on June 13, 2022. The ROD approved SpaceX's plan to launch 20 Starship/Super Heavy rockets per year over the next 5 years, including suborbital launches and orbital launches, along with tank tests, static fire engine tests, and construction of additional launch related infrastructure.

61. The Super Heavy Rocket is the world's most powerful rocket. It holds up to 3,700 metric tons of liquid methane for propulsion, a potent greenhouse gas that would routinely be vented into the atmosphere by SpaceX.

62. The operation of the SpaceX facility will harm wildlife through noise, heat, and light pollution, including from the firing of booster rockets and intense lighting to support ground operations. Noise and light associated with SpaceX operations can harm or harass listed species, including piping plovers in their critical habitat, endangered ocelot and jaguarundi in some of their last remaining habitat, and Kemp's Ridley sea turtles, the most critically endangered sea turtle in the world. Light from the facility negatively affects nesting sea turtles because it could cause adult females to false crawl or hatchlings to become disoriented and reduce nesting success and hatchling survival. Endangered red knots and threatened piping plovers could be killed if they are within the heat plume created by engine ignition during testing and launches, and noise disturbances displace plovers from their ESA-designated critical habitat.

63. Since 2014, SpaceX has operated a rocket launch program at Boca Chica under a prior permit from FAA which addressed only 12 launches per year. SpaceX has undertaken many activities not covered by that permit, including a higher frequency of road closures

extending well beyond the allowed 180 hours, large explosions from “anomalies,” the appearance of significantly larger staffing than anticipated, as well as 24/7 operations, traffic, and construction activities not addressed by the FAA.

64. Rocket launches and testing often result in explosions. The first launch of the Starship/Super Heavy Rocket on April 20, 2023, ended in a fiery explosion of the rocket just after liftoff. The rocket also destroyed the launch pad, spewing chunks of concrete and metal, as well as ash and sand, over a large area, including adjacent tidal flats that provide habitat for protected species such as piping plovers and other migratory birds.

65. There have been at least eight other rocket explosions at Boca Chica over the last several years, including one in March of 2021 that spewed debris as far as five miles from the launch site and took nearly three months to clean up. FAA acknowledges that several more “anomalies” from tank tests and launches are expected to occur over the next five years. These explosions spread debris across surrounding habitat and can cause brush/forest fires, putting people and wildlife at great risk. FAA has accordingly acknowledged that an “anomaly” represents the greatest risk to the environment from the SpaceX activities at Boca Chica.

66. There have been several fires attributable to SpaceX anomalies. For example, two SpaceX incidents on July 25, 2019, and again in August 2019 resulted in wildfires of 150-acres and 11-acres, respectively, burning coastal prairie and dune habitats on National Wildlife Refuge managed land. Explosions in November 2019, February 2020, and December 2020 likewise scattered debris onto Refuge managed lands. Another 68 acres of Refuge were burned in September of 2022, when a rocket exploded during a static fire test.

67. Operations to retrieve the debris have further damaged the Refuge. According to FWS, falling debris has damaged sensitive wind-tidal flats and debris retrieval methods damaged

the sensitive alkaline flat and refuge cable fencing installed to protect the area from disturbance. The vehicles or machinery used to retrieve debris have created rutting and damage that interrupts tidal water sheet flow across these flats.

68. The U.S. Fish and Wildlife Service has found that SpaceX's operations have significantly diminished its ability to maintain the biological integrity, diversity, and environmental health of Refuge resources at the Boca Chica tract. These activities have prevented or constrained public access year-round, hampered biological and monitoring studies including sea turtle patrols, interfered with refuge management and law enforcement patrol, increased road mortality of wildlife at all hours of daytime and nighttime, damaged sensitive habitats such as the wind tidal flats and the salt prairie from explosions and fires, and adversely impacted nesting habitat for sensitive species.

69. The SpaceX launch program has also increased vehicle traffic causing mortality of wildlife, with carcasses of snowy plover, common nighthawk, Harris's hawk, rose-breasted grosbeak, and eastern meadowlark found over the past two years—all species designated as Birds of Conservation Concern by the U.S. Fish and Wildlife Service.

70. The increased traffic also exposes jaguarundis and ocelots to collisions. According to the FAA, there will be an extra 505 vehicles per day from the FAA-permitted activities moving through potential travel corridors for the Gulf Coast jaguarundi and ocelot. The project will harm those species by increased collisions and/or by displacing them and causing them to expend additional energy in seeking alternative north-south travel corridors.

71. The FAA itself acknowledges that the construction and operation of the project would result in adverse impacts from noise, light, traffic, heat and debris from rockets (that can explode and cause wildfires), and is therefore likely to adversely affect several protected species,

including piping plovers, red knots, northern aplomado falcons, gulf coast jaguarundi and ocelots, as well as Kemp's Ridley, loggerhead, green, hawksbill, and leatherback sea turtles. Furthermore, the PEA acknowledges the potential for significant environmental harm from SpaceX activities due to the unique and/or unknown risks of rocket launches (including "anomalies").

72. The frequent Beach closures with little or no public notice also cause a large impact on the community. In 2021, Boca Chica Beach was closed or inaccessible for approximately 500 hours or more, based on the notices of closure provided by Cameron County, with a Beach or access point closure occurring on over 100 separate days.

73. SpaceX activities restrict the ability of the public to access and enjoy the Texas coastline adjacent to the project site, including Boca Chica State Park and Beach, a popular public beach on an 8-mile stretch of sand near the city of Brownsville, Texas. Beach access is guaranteed by local, state, and federal law. This loss of access disproportionately impacts environmental justice communities and infringes upon the ability of the Carrizo/Comecrudo Nation of Texas to access lands and waters that are part of their ancestral heritage.

FAA's Review of the SpaceX Launch Program

74. The Commercial Space Launch Act of 1984 authorizes the Secretary of Transportation to regulate commercial launch and reentry activities within the United States. *See* 51 U.S.C. §§ 50901-50923. The Secretary has delegated that authority to the FAA Administrator. *See* 49 CFR § 1.83(b).

75. In 2014, the FAA prepared an EIS and issued a permit to SpaceX to launch so-called Falcon vehicles at the Boca Chica site. Since then, SpaceX has applied to FAA for a new

permit to use the Boca Chica Launch Site for the Starship/Super Heavy program. The project includes associated tank tests, static fire engine tests, expansion of the vertical launch area and construction of additional infrastructure.

76. In June of 2020, the FAA's Chief of Staff for the Office of Commercial Space Transportation stated in an email that the agency planned to conduct a new EIS for the Starship/Super Heavy program. However, the FAA subsequently deferred to SpaceX and only analyzed the Starship/Super Heavy program through an EA that was prepared by SpaceX under the supervision of the FAA.

77. The FAA released a draft PEA on the project for public review on September 17, 2021.

78. The FAA received many comments on the draft PEA from Plaintiffs and others—including local and national organizations—discussing the significant environmental and community impacts of the SpaceX launch program at Boca Chica and setting forth concerns about the FAA's failure to adequately analyze those impacts and to require mitigation to protect the environment, including vital wildlife habitat, from undue harm.

79. The FAA issued its Final PEA and Finding of no Significant Impact/Record of Decision (FONSI/ROD) on June 13, 2022. The FONSI/ROD states that FAA finds the action to be consistent with NEPA, and therefore it "directs that action be taken, together with the necessary related and collateral actions, to carry out the agency decisions as detailed in this Mitigated FONSI/ROD, including: A determination under 14 CFR Part 450 as to SpaceX's application for a vehicle operator license."

80. In deciding whether to prepare an EIS, the FAA has a duty to take a hard look at whether the proposed activities will significantly affect the environment. Yet the FAA failed to

take the requisite hard look at the proposed project and has concluded that significant adverse effects will not occur due to purported mitigation measures.

81. In refusing to prepare an EIS, the FAA failed to consider and ensure adequate mitigation for the full range of impacts associated with the proposed action, including impacts to the wildlife refuge lands and protected wildlife, energy use and contribution to climate impacts, impacts on migration patterns for impacted species, and community impacts due to frequent beach closures.

82. While the PEA contains a list of around 70 purported “mitigation measures,” the proposed measures are inadequate to address the extensive environmental impacts of SpaceX’s activities. Many of the measures are not actually mitigation imposed specifically by FAA, but are actions required under other laws, such as stormwater permitting under the Clean Water Act. Other measures are meaningless as a practical matter, such as a requirement to turn off lighting that adversely affects wildlife when the lighting is not needed, since the PEA makes clear that such lighting will likely be required nearly 24/7.

83. The PEA does not include mitigation measures to address impacts to sensitive wildlife such as the restoration and enhancement of ocelot or plover habitat affected by the noise, heat, and light from rocket launches, as well as the adverse impacts of “anomalies.” The PEA provides no mitigation to address the direct impacts of explosions and resulting fires, and only provides for uncertain after-the-fact mitigation—i.e., consultation with other agencies to discuss

debris removal—which does nothing to address the extensive direct damage that may occur from explosions and fires.

84. The FAA never explained anywhere in the PEA/FONSI/ROD how the proposed mitigation could or would reduce the anticipated environmental impacts to such a degree that they would not be considered “significant” for purposes of NEPA and thereby require an EIS.

85. The PEA considered only two alternatives, including the preferred alternative and a “no action” alternative. The FAA failed to analyze other options, including a less-intensive use of the Boca Chica site (i.e., fewer launches per year), or the use of other sites for the proposed launches, such as the Kennedy Space Center, which SpaceX itself has suggested as an alternative.

86. The FAA provided no analysis in the PEA as to the impacts the proposed project would have on the climate—including through the burning and venting of liquid methane, a potent greenhouse gas—and how that will impact people and the environment. The FAA simply claimed that the emissions will not be significant, based only on comparing SpaceX to the total GHG emissions of the US. The FAA thereby ignored that every contribution of GHGs to the atmosphere causes cumulative harm, and that NEPA requires a consideration of climate impacts.

87. The PEA does not provide a full analysis of the environmental impacts to the publicly owned conservation, park, and recreation lands that are of inestimable conservation value for a range of federally and state listed species and other protected species such as migratory birds. Rather, the PEA provides only cursory statements about the potential for environmental harm – including passing reference to potentially catastrophic harm from rocket

explosions that may cause extensive wildfires – but fails to provide any real analysis of the actual impacts to the people, habitats and wildlife that will be adversely affected.

88. The PEA acknowledges that FAA anticipates further “anomalies” from the Starship/Super Heavy program, which will cause explosions and the spread of debris. The blast danger area for the debris spread includes the adjacent wildlife refuge and park lands, though the analysis was limited to a 700-acre debris study area, and the rocket explosion/launch pad destruction on April 20 indicates that debris was not limited to that area. Regardless, the PEA provides no analysis of what the actual environmental impacts of these explosions could be on nearby wildlife and habitats – just conclusory statements about the potential for some unknown amount of harm.

89. The FAA also failed to address the harm to wildlife and habitats from debris recovery efforts, which have caused undue adverse impacts to wildlife, including listed species. The PEA suggests future debris recovery would be done on foot, rather than using vehicles, but fails to address the potential for harm from having debris removed in that manner, such as increased human presence and the trails that would be created through the sensitive tidal flats.

90. The FAA also failed to address the potential for hazardous material contamination from “anomalies” and storms. Launch propellant and commodities (including gaseous and liquid methane) will be stored in aboveground tanks at the Boca Chica site. This includes thousands of metric tons of propellants, which by definition are explosive, and have been shown to be carcinogenic and toxic. The Boca Chica site may be hit by hurricanes coming off the Gulf of Mexico, which have been increasing in recent years. The Federal Emergency Management Agency’s flood risk map shows that all SpaceX facilities at Boca Chica are at risk of flooding.

The FAA failed, however, to consider the potential impacts of storm damage, including a worst-

case scenario tank rupture, and the harm that would result in the habitat areas surrounding the SpaceX site.

91. FAA failed to adequately analyze the impacts of noise and light pollution on wildlife, and in fact it could not do so because the FAA acknowledged that detailed information about some of the proposed launch-related infrastructure (*e.g.*, exact location and design) was not made available for review. FAA also failed to require sufficient mitigation for noise and light pollution, such as season/time lighting restrictions during the crucial hatching season for sea turtles. Rather, FAA acknowledged that harmful white lights may need to be used continually for several days.

92. FAA failed to consider and analyze the impacts to the surrounding community from the closures that would be necessary to accommodate construction and launch activities. The only coastal access to Boca Chica Beach is Texas State Highway 4—locally known as Boca Chica Boulevard—which would be closed up to 500 hours per year to accommodate SpaceX construction and launch activities, with additional closures to respond to anomalies. These closures have a significant impact on the local community, including the cultural, social, and spiritual interests of the Carrizo/Comecrudo Nation of Texas, which the FAA failed entirely to address in the PEA.

93. On April 14, 2023, the FAA issued a Commercial Space Transportation License to SpaceX, which allows the company to launch the first flight of the Starship-Super Heavy vehicle from Boca Chica, Texas, as well as to undertake pre-flight ground operations, such as tank testing and static fire tests, over the next 5 years. Despite the recent explosion of the rocket and launch pad during its first launch on April 20, 2023, SpaceX has stated its intent to move forward with additional launches in the next few months.

94. The FAA included with the License a Written Re-evaluation of the Final PEA for the SpaceX Starship/Super Heavy Launch Vehicle Program, which provided an analysis of new information regarding the use of deluge water and launch vehicle ocean landings, including information which was not considered in the PEA and never subject to public review and comment. The Written Re-evaluation is intended to consider whether a supplemental EA is warranted; however, it does not re-evaluate the environmental impacts discussed in the PEA and thus does not cure any of the failures identified herein regarding FAA's violations of NEPA.

FIRST CLAIM FOR RELIEF

The FAA violated the National Environmental Policy Act, 42 U.S.C. §§ 4321 et seq., applicable regulations, and the Administrative Procedure Act, 5 U.S.C. §§ 701-706

95. Plaintiffs reallege, as if fully set forth herein, each and every allegation contained in the preceding paragraphs.

96. The FAA's authorization of the Starship/Super Heavy Launch Vehicle Program at Boca Chica, Texas is a major federal action that requires compliance with NEPA. *See* 42 U.S.C. § 4332(2)(C). The FAA determined in the FONSI/ROD that the SpaceX Starship/Super Heavy Launch Vehicle Program was consistent with NEPA without the need for an EIS, and further stated that the agency was making an affirmative decision to approve SpaceX's application for a vehicle operator license and to allow the activities as detailed in the FONSI/ROD, which include 20 launches over the next 5 years as well as ground operations such as tank and static fire tests (which also may result in explosions and otherwise cause environmental harm).

97. The FAA issued the PEA and FONSI/ROD even though the action will have significant adverse environmental impacts, requiring the preparation of an EIS. Indeed, the FAA's Chief of Staff for the Office of Commercial Space Transportation acknowledged that a new EIS was warranted for the Starship/Super Heavy Launch Vehicle Program, but the agency

subsequently allowed SpaceX to conduct an EA rather than an EIS, thereby unlawfully delegating this important determination under NEPA to the self-interested applicant.

98. The mitigation measures set forth in the PEA are inadequate to compensate for the significant adverse impacts that SpaceX launch program will cause. The Boca Chica area provides some of the most important habitat in the U.S., yet FAA failed to require meaningful measures to protect the species that rely on the surrounding habitat.

99. The FAA violated NEPA by failing to take the requisite hard look at the significant environmental effects of the project. *See, e.g.*, 40 C.F.R. §§ 1502.1, 1502.16(a), (b), 1501.9(e). Among other things, the FAA failed to adequately analyze the project's contribution to climate change; the impacts of beach closures on the community, including on environmental justice communities and the Carrizo/Comecrudo Nation of Texas; the impacts of "anomalies" including the potential for highly destructive wildfires; and the impacts to wildlife from increased traffic, lighting, and the noise and heat associated with rocket launches.

100. The FAA failed to consider an adequate range of alternatives, as NEPA requires, including an alternative with fewer launches per year to mitigate the impacts of the launch program by reducing harm from noise, heat, lighting, and closures of public lands directly related to launch activities, and an alternative launch site altogether.

101. Furthermore, the FAA's FONSI/ROD for the launch program was arbitrary and capricious since the agency failed to set forth a reasonable basis for concluding that the impacts of the launch program can and will be mitigated such that they would no longer be considered "significant" under NEPA. The environmental impacts associated with the SpaceX launch program are undoubtedly "significant," even with the proposed mitigation—particularly from ongoing "anomalies"—and thus by preparing an EA/FONSI rather than an EIS for its issuance of

a permit for the SpaceX launch program, the FAA violated NEPA, 42 U.S.C. § 4332(2)(C), and its implementing regulations.

102. The FAA has not announced that it will undertake any further review pursuant to NEPA in light of the April 20 failed launch. Failure to supplement the prior analysis to take the requisite hard look at the human health and environmental impacts of the failed April 20 launch—including the destruction of the launch pad and resulting chunks of concrete being ejected into adjacent tidal flat habitat, as well as the spread of debris, including ash that may pose significant health risks—is a clear violation of NEPA and the APA. *See* 40 C.F.R. § 1502.9; 5 U.S.C. § 706(1). This explosion further undermines the FAA’s “finding of no significant impact,” and reinforces the need for an EIS for the Starship/Super Heavy Launch Program.

103. For the reasons set forth above, the FAA’s decision to approve SpaceX’s application for a vehicle operator license for the Starship/Super Heavy Launch Vehicle Program violates NEPA and is arbitrary and capricious, an abuse of discretion, or otherwise not in accordance with law, and contrary to the APA. *See* 5 U.S.C. § 706(2)(A).

PRAYER FOR RELIEF

WHEREFORE, Plaintiffs respectfully request that this Court:

- a) Declare that the FAA’s PEA/FONSI/ROD for the Starship/Super Heavy Launch Vehicle Program violate NEPA and applicable regulations;
- b) Vacate and remand the FAA’s decision to approve SpaceX’s application for a vehicle operator license for compliance with NEPA and applicable regulations; and
- c) Award Plaintiffs their costs, expenses, and attorneys’ fees under applicable law; and

d) Provide for such other relief as the Court deems just and appropriate.

May 1, 2023

Respectfully submitted,

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