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Federal Aviation Administration
800 Independence Avenue SW
Washington, DC 20591

Docket Operations: U.S. Department of Transportation (DOT)
1200 New Jersey Avenue SE
West Building, 5th Floor (W58-213)
Washington, DC 20590-0001

Re: Waiver of Specified Statutory Requirements for Commercial Space Launch and Reentry Actions; Docket ID No. FAA-2026-8614

To Federal Aviation Administration:

DarkSky International, Public Employees for Environmental Responsibility, and American Bird Conservancy (collectively “Conservation Organizations”) offer the following comments regarding Waiver of Specified Statutory Requirements for Commercial Space Launch and Reentry Actions, 91 Fed. Reg. 47997 (July 30, 2026) (“Proposed Rule”). The Conservation Organizations represent a broad spectrum of citizens engaged in, and concerned with, protection of public health and the environment, and responsible, transparent government action.

The Proposed Rule purports to waive application of 13 environmental protection laws, including the Clean Air Act, Clean Water Act, National Environmental Policy Act, National Historic Preservation Act, Marine Mammal Protection Act, and Endangered Species Act, to commercial space launch and reentry actions. *Id.* at 47998. The Conservation Organizations object to the Proposed Rule as contrary to the plain language of the Commercial Space Launch Act of 1984, as an improper expansion of the authority granted under the law, and as arbitrary and capricious based upon the extensive record of commercial space activity that demonstrates significant harms to public health, safety, national security, and to the environment.¹ Furthermore, as explained below, the rule cannot go forward until the FAA complies with the National Environmental Policy Act (“NEPA”) and Endangered Species Act (“ESA”). In short, the Proposed Rule is ill-advised, unsupported, and illegal in multiple respects. It should be withdrawn in its entirety.

¹ To illustrate such harms, the Conservation Organizations cite to over a hundred studies and reports herein. All cited literature is submitted simultaneously with these Comments as exhibits and identified in an accompanying index.

I. THE PROPOSED RULE IS NOT LEGALLY SUPPORTABLE.

A. The Proposed Rule Is Contrary to the Plain Language of the Statute.

The FAA claims authority under 51 U.S.C. § 50905(b)(2)(C) (the “Waiver Provision”) to waive the application of 13 environmental, public health, and cultural resource protection laws to commercial space launches and reentries, launch and reentry sites, and experimental permits. But the Proposed Rule exceeds the authority granted in the Waiver Provision and is contrary to the plain language of that authority. Simply put, the FAA does not have legal authority to wholesale waive application of the 13 environmental protection laws to the designated space activities, and has not complied with the statutory requirements even if the law is read to allow such broad waiver.

The Waiver Provision is part of Title 51, Chapter 509, concerning commercial space launches and reentry. Under the statute, a license or permit is required for all commercial launches or reentry. 51 U.S.C. § 50904(a). The Secretary, in issuing the required license or permit, must protect public health and safety, safety of property, and national security, and the required permit is to include all requirements of the laws of the United States applicable to the launch or reentry of a vehicle, or operation of a site. *Id.* § 50905(a)–(b). The law allows for so-called “one stop shopping” for permits, authorizing the Secretary to include in the single permit any provisions from all laws that are necessary to protect public health and safety. *See id.* § 50905(b)(2).

The Waiver Provision is largely unchanged since its passage in 1984, only a few years into the space shuttle era. The Waiver Provision allows the Secretary to determine, by rule, that a “requirement of a law of the United States not be a requirement for a license or permit,” but *only* after consultation with the appropriate executive agency, e.g., the Administrator of the Environmental Protection Agency or Director of the U.S. Fish and Wildlife Service, and after the Secretary finds “that the requirement is not necessary to protect the public health and safety, safety of property, and national security and foreign policy interests of the United States.” *Id.* § 50905(b)(2)(C). Nothing in the language of the Waiver Provision suggests or supports a broad, complete waiver of an entire law’s application across the board, much less waiver of all provisions of 13 environmental protection laws as set forth in the Proposed Rule. Rather, the language refers to “*a requirement of a law of the United States*” and “*a license or permit*,” indicating a much narrower application than the FAA is attempting with the Proposed Rule here.

The Congressional debate and legislative history of Chapter 509 support this narrower reading. The statements on the House Floor in June of 1984 concern consolidating decision-making and regulation into a single permit, not wholesale exemption from the Nation’s laws. Various speakers addressed the desire for consolidated permitting but also reinforced the need for that permit to include all requirements from other laws that are necessary to protect the public health and safety. Specifically, Rep. Volkmer, an author of the bill, described the Waiver

Provision and other attempts to streamline permitting for commercial space enterprises as follows:

The DOT Secretary would be authorized, after consulting with the appropriate agencies, to waive *specific requirements on an individual basis* with respect to *any launch* and to halt any licensed operation on an immediate basis if such action were necessary for public safety, foreign policy, or national security reasons.

130 Cong. Rec. 14874, 14900 (1984) (emphasis added). Not one speaker suggested a desire or intent to exempt all commercial space launches from the application of any law in its entirety, much less all 13 environmental protection laws.

The FAA's rules regarding waiver provide that persons may petition the Associate Administrator to issue, amend, or repeal a regulation to eliminate as a requirement for a license or permit any requirement of Federal law that would apply to a launch or reentry or waive any such requirement for a specific license or permit. 14 C.F.R. § 404.3. Nowhere do the rules contemplate wholesale waiver for all licenses and permits of entire laws, or 13 entire laws.² Any petition for a rule or waiver for a single permit must state "the specific section or sections of 14 CFR chapter III [commercial space permitting and licensing] from which the petitioner seeks relief," *Id.* § 404.5(b)(1), and "the reason why granting the request for relief is in the public interest and will not jeopardize the public health and safety, safety of property, and national security and foreign policy interests of the United States" *Id.* § 404.5(b)(3).³

Moreover, even if read broadly, it is plain from the language that any waiver decision must be made by the Secretary only after consultation and only after making a reasoned determination with respect to all of a particular launch or reentry's possible impacts on public health and safety and other enumerated values. The sweeping proposal to exempt all launches and reentries, launch and reentry sites, and experimental permits from 13 environmental, public health, and cultural resource protection statutes does not comport with this statutory directive. First, there is no evidence that the Secretary has "consulted" in any meaningful way with the agencies responsible for implementing those statutes. The FAA should release any and all records documenting those consultations. The Conservation Organizations are skeptical that these consultations—if they occurred at all—would support the other statutory prerequisites. Second, while the statute may provide for case-specific or provision-specific exemptions, it does

² The Proposed Rule also appears to propose waiver on behalf of other agencies, such as "the National Aeronautics and Space Administration (NASA), the U.S. Department of the Air Force (DAF), and other agencies." 91 Fed. Reg. at 47998. To the extent the Proposed Rule would do so, this is, plainly, an additionally improper reading of the statute. *See Union Pac. R.R. Co. v. Surface Transp. Bd.*, 863 F.3d 816, 822–23 (8th Cir. 2017); *Bayou Lawn & Landscape Servs. v. Sec'y of Labor*, 713 F.3d 1080, 1084–85 (11th Cir. 2013).

³ The rules provide that licenses must comply with NEPA and other applicable environmental laws and applicants are responsible for supplying information sufficient to assess environmental impacts and requirements. *See, e.g.*, 14 C.F.R. §§ 420.17, 433.7.

not authorize exemptions from all laws applicable to all launch-related activities. For the same reasons, the FAA has not even complied with its own rules for petitions to waive applicable laws. *See* 14 C.F.R. § 404.5(b). A more targeted approach is required by both the statute and the rules, which this Proposed Rule violates.

B. The Proposed Rule Is an Improper Expansion of the Agency’s Authority.

The Proposed Rule is not merely contrary to its plain language and Congress’ stated intent and purpose but also exceeds the FAA’s authority and thereby intrudes on the separation of powers between the executive and legislative branches of government. The Proposed Rule purports to waive completely the application of all provisions of 13 major federal acts, on the claimed authority set out in one subsection of one part of the Commercial Space Launch Act, originally passed in 1984—at a time when commercial space activities were in their infancy. Today, as the science of space launches and reentries is rapidly evolving, the FAA proposes to forever forfeit the requirement that it consider the environmental and cultural impacts of space technology that might not even exist yet. As noted above, the specific language of that provision, and statements made in the House at its passage, do not provide for complete waiver of entire federal acts. The FAA, therefore, is claiming to find authority for the extremely broad Proposed Rule in these more specific provisions.

The U.S. Supreme Court has made clear that administrative agencies do not have the power to decide “major questions” like this without clear Congressional authorization. *West Virginia v. Env’t Prot. Agency*, 597 U.S. 697, 732 (2022). Specifically, the statutory authority to waive provisions or specific requirements of applicable laws in specific permitting instances does not authorize basic, fundamental changes to the entirety of the Congressional statutory scheme and structure for protection of the environment. *See e.g. Biden v. Nebraska*, 600 U.S. 477, 494 (2023). The power to order a complete waiver of 13 laws, duly passed by Congress decades ago, with respect to all commercial space launches and reentries, launch and reentry sites, and experimental permits is exactly the kind of authority that Congress would have reserved to itself; it could have provided for complete waiver in the Commercial Space Launch Act, but it did not. Further, Congress is not unaware of recent developments in commercial space operations and could have, but has not, expanded the original Waiver Proposal. Here the FAA has arrogated to itself the authority to effectively rewrite a more-than-40-year-old law in a completely novel way and to unilaterally jettison application of 13 major federal environmental laws. That, under Supreme Court case law, is authority it does not have. *See Biden*, 600 U.S. at 496–97; *West Virginia*, 597 U.S. at 723–24. The Proposed Rule changes the regulatory scheme with respect to licensing and permitting commercial space activities, purporting to transform one kind of structure (pointed and specific individualized waivers) to another (broad, wholesale waiver of entire statutory programs and protections). The economic and public health implications are staggeringly broad. The Proposed Rule violates the separation of powers enshrined in the Constitution and should be abandoned.

In sum, in the more-than 40 years that the Waiver Provision has existed, it has never been interpreted or applied as allowing a sweeping waiver of all environmental law provisions that protect public health and safety. The Proposed Rule marks a significant change in the way the agency will address commercial space licensing and permitting and lacks Congressional authority to do so. The Proposed Rule is an unauthorized, illegal, and unconstitutional expansion of the FAA's authority. It must be withdrawn on that basis too.

C. The Proposed Rule Waiver Differs from the Waivers for the Border Wall.

Case law concerning broad waivers in other contexts does not apply here and cannot be relied upon by the FAA to justify the Proposed Rule. In the border wall cases, *see, e.g., Ctr. for Biological Diversity v. Noem*, No. CV-25-00365-TUC-AMM- JEM, 2025 WL 4083346, at *7–*8 (D. Ariz. Dec. 2, 2025); *In re Border Infrastructure Env't Litig.*, 284 F. Supp. 3d 1092, 1132–33 (S.D. Cal. 2018); *Def. of Wildlife v. Chertoff*, 527 F. Supp. 2d 119, 127 (D.D.C. 2007), litigants challenged the broad waiver of environmental and other laws by the Department of Homeland Security (“DHS”) in its quest to build a barrier between the United States and Mexico. While courts have upheld DHS's actions, the statutory language underlying those waivers is very different than here.

The waiver language at issue in the border wall cases directs the Secretary of DHS to build a border wall “in areas of high illegal entry” and gives the Secretary in their “sole discretion” the “authority to waive all legal requirements” as “necessary to ensure expeditious construction” of the wall. 8 U.S.C. § 1103 note. Unlike here, the border wall waiver language addressed a specific outcome and applied this provision to a specific region of the country. Unlike here, the border wall waiver language did not depend on an express finding with respect to public health, safety, national security, or any other factor.⁴

Here, Congress expressed a desire to have licensing and permitting of commercial space launches and reentry be more streamlined and consolidated, but Congress did not countenance the issuance of the licenses and permits at any cost, without regard to environmental laws, and did not assign a specific task or outcome to which the waivers would or should apply. Congress did not direct waiver in all instances aimed at a particular project or purpose like a border barrier. Rather, Congress expressed the waiver in terms that confined the FAA to waiver of specific requirements of applicable laws to “a permit or license” and only after ensuring that such a waiver does not contradict protection of public health and safety, property, or national security

⁴ In recognizing such distinctions, the Conservation Organizations do not concede the constitutionality of the border wall waiver provision or its applications. To the contrary, the Conservation Organizations alert the Agency to the fact that litigants have raised serious constitutional questions concerning recent applications of the border wall waiver language. *See, e.g., Pls.' Emergency Mot. for TRO or Prelim. Inj., Friends of the Ruidosa Church v. Mullin*, No. 3:26-cv-01099-KC (W.D. Tex. Aug. 17, 2026), Dkt. No. 34.

and foreign policy interests. The Proposed Rule’s wholesale waiver of the application of 13 laws to all commercial space launch and reentry, launch and reentry sites, and experimental permits is unsupported by the statutory language and cannot find justification in the border wall cases.

II. EXEMPTING COMMERCIAL SPACE LAUNCH AND REENTRY ACTIVITIES WILL ADVERSELY IMPACT PUBLIC HEALTH AND SAFETY, SAFETY OF PROPERTY, AND THE NATIONAL SECURITY AND FOREIGN POLICY INTERESTS OF THE UNITED STATES.

The Proposed Rule is deficient in yet another way. Regardless of the scope of the waiver, it can only be made after a finding that a particular legal requirement “is not necessary to protect the public health and safety, safety of property, and national security and foreign policy interests of the United States.” 51 U.S.C. 50905(b)(2)(C). Yet the Proposed Rule offers virtually no explanation for why this sweeping waiver meets such a statutory prerequisite. That alone renders the Proposed Rule invalid. More to the point, it would be all but impossible for FAA to make such a finding. That is because the waived statutes are critical to protecting the statutorily enumerated values and waiving their application threatens such values in myriad ways.

A. Public health and safety

The Proposed Rule poses significant threats to public health and safety by clearing the way for future commercial space activities the effects of which are unknown, and without any process to analyze or impose mitigation measures that might reduce those effects. First, the Proposed Rule threatens to cause an increase in skin cancer, ocular diseases, and a range of other medical conditions due to its potential to degrade the ozone layer. Rocket launches release exhaust emissions that contain pollutants such as aluminum oxides (alumina) and soot particles designated as black carbon. Rockets are “unique” among anthropogenic sources of pollution because they inject pollutants directly into all atmospheric layers. Ex. 88. At the end of their lives, spent rocket bodies reenter the stratosphere, further releasing alumina and other metallic compounds. Exs. 74 & 93. Indeed, a recent study documented a lithium plume from the uncontrolled reentry of *a single* SpaceX Falcon 9 rocket. Ex. 100. One chemical consequence of such launches and reentries is depletion of the ozone layer. This is, according to a recent analysis, the “most immediately concerning” environmental impact of space launches. Ex. 14. Almost all of the pollutants emitted during rocket launches and reentries deplete stratospheric ozone. Exs. 15, 56, 66, 82, 84–88. The depletion of the ozone layer, in turn, allows more ultraviolet solar radiation to reach earth and thereby increases the risk of skin cancer, cataracts and other ocular diseases, and other UV-radiation-related health effects. Ex. 77.

Second, the Proposed Rule risks increasing quantities of unmitigated toxic pollutants inherent in commercial space activity, which could likewise harm human health and public safety. Rocket propellants contain chemicals that pose a risk to the safety of human drinking water and bodily functions. Hydrazine, for instance, can cause pulmonary injuries, damage to the soft tissue, seizures, coma, and even death. Ex. 75. The allowance of unanalyzed, unmitigated launches threatens the widespread deposition of such contaminants and the health consequences

that would ensue. *See* Exs. 18, 79, 92. Further, the operation of launch and reentry sites themselves may pose additional risks of contamination. *See, e.g.*, Ex. 52. Some evidence suggests that the workers at these launch sites are at a disproportionate risk of dying from a range of cancers. Exs. 14 & 81; *see also* Ex. 9. Such risks cannot be squared with the clear direction in the statute to ensure the protection of public health and safety.

Third, the Proposed Rule introduces grave threats to human safety by facilitating commercial space activity that has never been analyzed for risks of danger. In the absence of appropriate safety measures and risk management, spacecraft can blow up. One recent commercial rocket launch ended in a fiery explosion, illustrating its profound threats to human safety (as well as property). Ex. 47. Another launch in 2023 resulted in an “explosive plume of debris” that “sent sand, soil, chunks of metal and concrete flying through the air to land up to 10 km (6.2 miles) away.” Ex. 51. Moreover, the approval of new launch and reentry sites without adequate environmental review poses its own problem. The recent SpaceX proposal to construct a massive spaceport in Vermilion Parish, Louisiana, for instance, risks harming or eroding a vital coastal marsh, rendering the entire region, and its inhabitants, more vulnerable to hurricanes and accompanying storm damage. Ex. 99. (This also has significant implications for the safety of property.) The waived laws provide precisely the kind of regulatory oversight needed to protect people from such dangers.

Even when spacecraft remain intact during the launch, their bodies routinely fall back to earth, representing an additional threat to public health and safety. Of the 180 launches during 2022, for instance, over 70 percent resulted in an uncontrolled rocket body plummeting back to earth. Ex. 102. In fact, returning rocket bodies present a greater risk than reentering satellites, because rocket bodies “are often large and less likely to burn up entirely.” Ex. 103; *see also* Ex. 53. Experts have warned that such returning rocket bodies pose a material threat, particularly as the numbers of commercial space activities increase. An open letter signed by the leading experts of reentering debris warned space agency leaders that “uncontrolled reentry of space objects presents a significant, cumulative, fast-growing risk to human beings around the world,” with rocket bodies presenting a “particular concern.” Ex. 78. Indeed, scholars have documented a risk of collision with *aircraft in flight*, especially because over 2,300 rocket bodies are already in orbit and will eventually return to earth via uncontrolled reentry. Ex. 103. Despite these risks, there are currently active proposals to increase the number of orbiting bodies into the millions—dramatically increasing risks still further. Such risks are particularly concerning because the FAA recently scuttled a rule proposed during the previous administration that would have obliged commercial space companies to remove spacecraft within 25 years of launch. Ex. 97. FAA cannot ignore these dangers—and cannot reasonably exempt commercial space activity from the very statutes designed to analyze and reduce these dangers.

B. Safety of property

As discussed above, the Proposed Rule similarly threatens the safety of property because of the potential for commercial spacecraft to explode during launch and for rocket bodies from commercial space activity to fall back to earth, without any requirement to analyze or reduce

such risks. Not only humans but property can be—and in fact routinely is—struck by falling debris. As recently as 2024, a piece of debris from a SpaceX spacecraft fell from the sky and struck a house in North Carolina. Ex. 104. Environmental review statutes, which would require analysis and mitigation of such risks, are intended to address precisely this kind of impact. It is not possible for FAA to waive their application and find that it has no impact on the protection of property.

C. National security and foreign policy interests

Finally, the Proposed Rule poses critical risks to U.S. national security and foreign policy. The principal such risk is due to the likelihood that unanalyzed, unmitigated commercial space activity would impair the ionosphere and thereby impede radio communication, imperiling critically important military and government work. Many studies have shown that commercial rocket launches can deplete the ionosphere, the electrically charged region of Earth's upper atmosphere. Exs. 4, 10, 12–13, 39, 43, 64, 71–72, 90. An intact ionosphere plays a critical role in “radio communication, navigation, positioning, and over-the-horizon radar detection,” as many radio signals bounce off the ionosphere. Ex. 11; *see also* Ex. 39. Harm to the ionosphere can adversely affect the propagation of radio waves, which in turn can harm shortwave communication, satellite navigation, and positioning services. Ex. 8. This has obvious implications for national security. “If you’re broadcasting on the ground through a disturbed ionosphere, other spacecraft may receive radio signals you’re trying to send securely,” one space physicist recently told the press. Ex. 73. Interference with the positioning on which munitions, aircraft, and naval vessels depend is another likely outcome of ionospheric depletion. *Cf.* Ex. 13 (describing an ionospheric hole resulting from a rocket launch that could lead to ~1 meter range errors in GPS navigation and positioning system). The very statutes that FAA seeks to waive are necessary to analyze and reduce the risks of harm to the ionosphere flowing from commercial space activity.

An additional risk that the Proposed Rule poses to U.S. national security and foreign policy stems from the potential for the Proposed Rule to facilitate a significant increase in orbital debris. The Proposed Rule seems virtually certain—indeed, designed—to expedite and increase commercial space launches, particularly because commercial space companies are rapidly taking steps to expand their operations just as the FAA is proposing to relieve them of regulatory burdens. *See* Exs. 62 & 99. This threatens to significantly increase debris in space, as a great number of objects will be entering orbit and subject to collisions, explosions, erosion, and obsolescence, which results in debris. According to the S7 Academies (the coalition of national science academies from the G7 nations), “[t]here are already in Earth orbit, ten thousand tons of debris, 28,000 objects over 10 centimeters in size, half a million marble-sized pieces of debris, one hundred million measuring about one millimeter.” Ex. 89 at 14. Further increasing orbital debris, with no consideration of the consequences, has national security implications because debris poses significant risks to the usability of space for military satellites, military and secure communications, and national or international exploration. In short, debris can strike, and thereby interfere with, these important applications. Indeed, since the 1970s, scientists have posited that if the quantity of orbital debris becomes too great, collisions among debris could

create an effectively unstoppable chain reaction, a perpetual pinballing effect known as the “Kessler Syndrome,” which would render space unusable for further satellites or crewed missions. Ex. 59. Excusing commercial space companies and the FAA itself from common-sense review processes is, in this context, an unwarranted risk.

The proposal threatens national security and U.S. foreign policy in yet another way. A cascade of unregulated burning debris raining down from the sky around the world will undermine our relationships with allies and heighten tensions with our adversaries. Other space-faring governments take considerably more care in overseeing commercial activities and ensuring that they do not threaten their people or those of other nations. The FAA’s proposal to walk away from oversight of the fast-changing area of commercial space activities will undermine our relationships with such countries.

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In light of the examples of adverse impacts outlined above, the Proposed Rule is arbitrary, capricious, and unlawful. Under Section 706(2)(A) of the Administrative Procedure Act (APA), an agency action that is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law” must be set aside. 5 U.S.C. § 706(2)(A). To be satisfactory under that statutory standard, FAA’s action must be both “reasonable and reasonably explained.” *FCC v. Prometheus Radio Project*, 592 U.S. 414, 423 (2021). FAA must “articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” *Motor Vehicle Mfrs. Ass’n of United States, Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quoting *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962)).

FAA cannot “rel[y] on factors which Congress has not intended it to consider” or “entirely fail[] to consider an important aspect of the problem,” nor can it proffer “an explanation for its decision that runs counter to the evidence before the agency.” *Id.* Further, FAA “must consider the ‘alternative[s]’ that are ‘within the ambit of the existing [policy].’” *Dep’t of Homeland Sec. v. Regents of the Univ. of Cal.*, 591 U.S. 1, 30 (2020) (quoting *State Farm*, 463 U.S. at 51). When departing from prior positions, FAA must provide “a reasoned explanation . . . for disregarding facts and circumstances that underlay or were engendered by the prior policy.” *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515–16 (2009); *see also FDA v. Wages & White Lion Invs., LLC*, 604 U.S. 542, 568 (2025); *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 222 (2016).

Simply put, the FAA must connect the dots between the extensive evidence in the administrative record and its findings. And the evidence in the record reveals that commercial space launches and reentries, and the operation of launch and reentry sites, pose numerous threats to public health and safety, to property and cultural sites, and to national security. In its final rule, the FAA must explain why its proposal meets the statutory standard in light of this evidence. Because it cannot, it should withdraw the Proposed Rule.

III. THE PROPOSED RULE IS A MAJOR FEDERAL ACTION WITH SIGNIFICANT ENVIRONMENTAL EFFECTS, TRIGGERING AN EIS UNDER NEPA.

The Proposed Rule is invalid for still another reason: failure to comply with the requirements of the National Environmental Policy Act (“NEPA”). The Proposed Rule offers a mishmash of incoherent excuses for failing to comply with NEPA. The proposed rule variously “does not constitute a major Federal action,” “qualifies for [a] categorical exclusion,” has no “environmental effects,” and finally—absurdly—is not yet a “final decision,” and NEPA analysis will be made later. 91 Fed. Reg. at 48000. This nonsensical and contradictory set of claims does not excuse FAA’s failure to comply with NEPA.

NEPA is the lodestar of America’s environmental conscience and actions. In NEPA, Congress articulated environmental policies and goals for the United States while acknowledging the “worldwide and long-range character of environmental problems.” 42 U.S.C. § 4332(I). Fully implemented, NEPA can help the nation meet its central environmental challenges, including climate change, the collapse of biological diversity, and the ongoing failure to achieve environmental justice. While full implementation of NEPA has yet to be realized, NEPA’s procedural requirements have changed the nature of federal decisionmaking for the better by providing thorough analysis and public involvement.

NEPA requires all agencies of the federal government to prepare a “detailed statement” analyzing the environmental effects of, and reasonable alternatives to, all “major Federal actions significantly affecting the quality of the human environment.” *Id.* § 4332(C). Since NEPA’s inception, courts, agencies, and other authorities have uniformly recognized that new or revised agency rules or regulations fall within the category of “major federal actions.” *See, e.g., California ex rel. Lockyer v. U.S. Dep’t of Agric.*, 575 F.3d 999 (9th Cir. 2009) (holding that nationwide rule removing substantive protections from specific Forest Service areas had a potentially significant environmental effect, triggering NEPA); *Calvert Cliffs’ Coordinating Comm., Inc. v. U.S. Atomic Energy Comm’n*, 449 F.2d 1109 (D.C. Cir. 1971) (rules for licensing nuclear power plants); *Nat. Res. Def. Council, Inc. v. U.S. Dep’t of the Interior*, 397 F. Supp. 3d 430 (S.D.N.Y. 2019) (interpretive rule declaring that the Migratory Bird Treaty Act’s take prohibition does not apply to incidental takes was a major federal action); *see also* 40 C.F.R. 1502.4(b) (1978) (“Environmental impact statements may be prepared, and are sometimes required, for broad Federal actions such as the adoption of new agency programs or regulations”); 40 C.F.R. § 1508.1(q)(3)(i) (2024) (major federal action includes “[a]doption of official policy, such as rules, regulations, and interpretations adopted under the Administrative Procedure Act”). As the leading treatise on NEPA states, “Federal agency rules and regulations are federal actions that require the preparation of an impact statement.” Daniel R. Mandelker et al., *NEPA Law and Litig.* § 8:31 (2d ed. 2025).

Even under FAA’s own NEPA standards, issuance of this rule is a “major federal action” subject to NEPA. *See* FAA Order 1050.1G app. B at B-2.6(f) (excluding from FAA’s categorical exclusions “[r]egulations . . . that if implemented may cause a significant impact on the human

environment”). Accordingly, the FAA must comply with NEPA by either preparing an EA or EIS, or by invoking a categorical exclusion. The latter is clearly inapplicable, as it is meant for actions that have no or truly de minimis environmental effects. The FAA’s current procedures require, at a minimum, preparation of an EA for a “commercial space launch site operator license for operation of a launch site at an existing facility on developed (e.g., co-located with a Federal range or municipal airport)”; or a “commercial space vehicle operator license or experimental permit to operate a vehicle to/from an existing launch or reentry site.” *Id.* § 1.5(c)(15)(i)–(ii).

In fact, even if a categorical exclusion were theoretically applicable, “extraordinary circumstances” exist that prevent its invocation. Under FAA procedures, extraordinary circumstances exist when actions “may have a significant effect” or where specified factors may exist. FAA Order 1050.1G app. B at B-1. Those factors in turn read like a list of likely impacts here—for example, as noted above, space launches have consistently been found to have adverse impacts on air and water quality, endangered species, cultural resources, public lands, noise, and many other resources. The way those impacts are typically addressed is via compliance with the very laws that FAA seeks to waive.

The environmental effects likely to result from the Proposed Rule are sweeping and profound. The Proposed Rule exempts commercial space activities from any process to assess impacts, and any substantive standards that could reduce or mitigate impacts. Indeed, its very purpose appears to get such standards out of the way to expedite commercial space activities. It follows that, necessarily, those activities will have adverse impacts.

Many of the potential environmental effects of the Proposed Rule—specifically those likely to affect human health and safety—are discussed above. Other well-known environmental effects include⁵:

- Climate impacts: Through the emission of black carbon, metals, and other elements, commercial rocket launches (and reentries) pose profound risks of radiative forcing and other climatic changes. Exs. 3, 14, 54, 58, 61, 66–67, 82–83. The warming potential is massive: warming per unit mass of black carbon from rocket launches is approximately *500 times greater* than surface or aviation sources. Ex. 88. In fact, even reusable rockets can result in significant climatic consequences. Ex. 17. Detailed consideration of climatic impacts is especially important as new information emerges concerning the full suite of rocket launch emissions. *See* Exs. 6 & 40. The waiver of any requirement for such consideration represents a significant and unjustified threat to the climate.

⁵ Notably, FAA itself has repeatedly documented such impacts and potential impacts in its NEPA analyses over the years. *See, e.g.*, Exs. 22–27, 29–30, 33–37; *see also* Exs. 28, 31–32, 38.

- Harm to vegetation and water resources in the vicinity of launches: Commercial rocket launches can harm soil quality, vegetation, and other aspects of the local ecosystem by emitting hydrochloric acid and metallic substances from rocket exhaust. Ex. 14 at 8 & Ex. 91. NASA itself has acknowledged that space launches have resulted in “the accumulation of aluminum particulates, damage to vegetation and temporarily reduced pH in adjacent waters.” Ex. 51. Launch and reentry sites themselves also present concerns: for instance, the much-publicized SpaceX proposal to construct a spaceport in 136,000 acres of Vermilion Parish, Louisiana, risks harming a sensitive coastal marsh due to saltwater intrusion, runoff, hydrologic alteration, and direct wetland loss. *See* Ex. 99. Once again, waiver of any requirement to analyze and determine ways to reduce such harms is unjustifiably risky.
- Harm to wildlife in the vicinity of launch sites: The artificial light present at commercial launch sites poses a threat of harm to a range of species, including imperiled turtles. *See, e.g.*, Exs. 65 & 101. Studies show, for instance, that anthropogenic light impairs the ability of birds to migrate at night (especially concerning for birds that navigate by starlight), which can result in exhaustion or even mortality, and can disrupt their perception of day length, causing them to breed earlier in the spring than is optimal. Ex. 57 at 2. This is especially concerning in Vermilion Parish, site of the recently proposed SpaceX spaceport, which is a key wintering site for migratory birds and a link in the Mississippi and Central flyways. Indeed, construction of such a launch/reentry site itself threatens birds and a range of other species, due to the potential for debris, dewatering, construction, dredging, and other alterations to sensitive lands and waters. *See* Ex. 99. Rocket launches can also induce rapid declines in pH, which has resulted in fish kills and can also render forests vulnerable to pests and frosts, Exs. 14, 19, 48, 50, while the ground cloud and other disturbances produced by rocket launches can kill nearby burrowing animals, Ex. 14 at 9, and birds. Ex. 63 (documenting damage to bird nests protected under the Migratory Bird Treaty Act by a June 6, 2024, launch); *see also* General Provisions; Revised List of Migratory Birds, 88 Fed. Reg. 49310, 49326 (July 31, 2023). The waiver of statutes that are designed to reduce such threats is unwarranted.
- Noise pollution: Scientific observers have long been aware that rocket launches, reentries, and landings produce significant noise and sonic booms. Exs. 1–2, 21, 41, 45, 69, 95; *see also* Exs. 44, 96, 98. The prospect of a growing number of commercial space flights permitted without environmental analysis risks greatly increasing the noise pollution from spacecraft; in fact, one study showed that a recent commercial launch (by SpaceX’s “Starship”) produced significantly more acoustic energy than past comparators. Ex. 46. This poses significant environmental risks because even relatively low levels of noise (i.e., well below the 65 dBA significance threshold FAA applies to human communities) can impair wildlife. Ex. 94. Especially concerning to

wildlife is unpredictable noise, such as that from a launch or reentry, which many species perceive as a threat, inducing stress responses. *See* Ex. 42 at 309; *see also* Exs. 5 & 16. The waiver of any requirement that commercial space companies take steps to minimize or mitigate noise pollution is indefensible.

- Harm to oceans and marine organisms: The International Marine Organization has documented “[c]oncerns about the potential marine impacts of debris falling from rocket launches,” which “include the release of toxic substances; disturbances to the seabed and seabed organisms; marine litter and underwater noise.” Ex. 55. Yet again, the waiver of statutes that are designed to minimize or eliminate such concerns is unreasonable.
- Environmental justice implications: The environmental impacts resulting from the Proposed Rule are likely to be especially burdensome for marginalized communities, particularly because many commercial space sites are already located in communities with disproportionate health challenges. *See* Ex. 68. In fact, it appears that marginalized people are at greater risk of harm due to falling rocket bodies. *See* Ex. 7. To waive statutes designed to protect the health, safety, and resources of these people is inexcusable.

FAA’s NEPA procedures make clear that an EIS is required for the issuance of a single operator license. FAA Order 1050.1G § 2.1(a)(2). The notion that exempting *all* such licenses from NEPA has no environmental impact is facially absurd and contradictory—with no explanation provided for the contradiction. In fact, the procedures further provide for programmatic EISs to address proposals just like this one—that would implicate NEPA reviews for a large number of future projects. *Id.* § 3.1. Again, the Proposed Rule makes no mention of this pathway for NEPA compliance.

One impact of crucial importance is for the FAA to consider cumulative impacts. *See* Exs. 60 (specifically noting the potential for significant cumulative effects) & 20 (discussing quantification of cumulative deposition from rocket launches). Other agencies like the FCC are weakening their oversight over space-related activities, resulting in less oversight government-wide while the number of objects in orbit is growing exponentially. *See, e.g.,* Space Modernization for the 21st Century, 90 Fed. Reg. 56338, 56339 (Dec. 5, 2025).

The notion that NEPA does not attach until a final rule is issued is particularly absurd. FAA’s own NEPA procedures direct that “[e]nvironmental issues should be identified and considered *early in a proposed action’s planning process* to ensure efficient, timely, and effective environmental review.” FAA Order 1050.1G § 1.3(a) (emphasis added); *Andrus v. Sierra Club*, 442 U.S. 347, 350–51 (1979) (citing National Environmental Policy Act—Regulations, 43 Fed. Reg. 55978, 55992 (Nov. 29, 1978)) (purpose of the law is to insert NEPA

review into the agency decisionmaking process and to do so early enough that the agency can and does utilize the information in making choices); *see also Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989); *City of Dania Beach v. FAA*, 485 F.3d 1181, 1185–86 (D.C. Cir. 2007); *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000).

In short, under the FAA’s own standards, the proposal has significant enough impacts to trigger a full EIS. An EIS must disclose:

(i) reasonably foreseeable environmental effects of the proposed agency action; (ii) any reasonably foreseeable adverse environmental effects which cannot be avoided should the proposal be implemented; (iii) a reasonable range of alternatives to the proposed agency action, including an analysis of any negative environmental impacts of not implementing the proposed agency action in the case of a no action alternative, that are technically and economically feasible, and meet the purpose and need of the proposal; (iv) the relationship between local short-term uses of man’s environment and the maintenance and enhancement of long-term productivity; and (v) any irreversible and irretrievable commitments of Federal resources which would be involved in the proposed agency action should it be implemented.

42 U.S.C. § 4332(C). Failure to prepare an adequate NEPA analysis will violate NEPA and render the final rule arbitrary and capricious.

IV. THE PROPOSED RULE VIOLATES THE ENDANGERED SPECIES ACT.

The Proposed Rule also violates the Endangered Species Act (“ESA”). Section 7(a)(2) of the ESA requires that each federal agency, in consultation with the U.S. Fish and Wildlife Service (“FWS”) and/or the National Marine Fisheries Service (“NMFS”), ensure that any action authorized, funded, or carried out by the agency is not likely to jeopardize the continued existence of any threatened or endangered species or result in the destruction or adverse modification of critical habitat of such species. 16 U.S.C. § 1536(a)(2). Action is defined to include “(a) actions that are intended to conserve listed species or their habitat; (b) the promulgation of regulations . . . [and] (d) actions directly or indirectly causing modifications to the land, water, or air.” 50 C.F.R. § 402.02.

If a federal agency determines that a proposed action—like issuance of a rule or regulation—“may affect” listed species or critical habitat, the agency must engage in “formal consultation” with FWS and/or NMFS, depending on the species involved. *Id.* § 402.14. Courts have recognized that the “may affect” hurdle is extremely low, encompassing any possible effect, whether beneficial, benign, adverse, or of an undetermined character. *Karuk Tribe of Cal. v. U.S. Forest Serv.*, 681 F.3d 1006, 1027 (9th Cir. 2012) (en banc); *National Parks Conservation Assoc. v. Jewell*, 62 F. Supp. 3d 7, 12–13 (D.D.C. 2014).

Formal consultation includes the preparation of a biological assessment to identify any listed species likely to be affected by the action at issue and concludes with the preparation of a biological opinion by FWS and/or NMFS addressing whether the proposed action will jeopardize threatened or endangered species or result in the destruction or adverse modification of critical habitat and setting forth any necessary measures for avoiding, minimizing, and mitigating any adverse impacts. 16 U.S.C. § 1536(a)–(c). An action agency may avoid formal consultation by engaging in “informal consultation” with FWS and/or NMFS and obtaining a written concurrence that the project is not likely to adversely affect threatened or endangered species or critical habitat. 50 C.F.R. § 402.13(a), (c).

The act of exempting a series of foreseeable future actions from the ESA is itself an action likely to have adverse effects on listed species. Even if it were lawful to exempt such activities from the ESA—which it is not—FAA must still consult to ensure that the impacts of such an exemption do not jeopardize listed species or adversely modify their critical habitat. This includes FAA’s own preparation of a biological assessment to ensure the provision of basic scientific data essential to public awareness and to the preparation of the biological opinion. Until that consultation is complete, the rule cannot be finalized. Indeed, the absence of fulsome consultation potentially exposes a commercial space company to the liability inherent in harming or harassing a listed species without an adequate permit.

Here, the Proposed Rule is likely to jeopardize the continued existence of a great many threatened and endangered species and their habitats. Many space launch sites are on or near important migratory pathways for birds and many, particularly along the Gulf Coast, are in close proximity to national (and state) wildlife refuges. *Cf. Ctr. for Biological Diversity v. FAA*, 804 F. Supp. 3d 86, 97 (D.D.C. 2025) (“It is undisputed that Boca Chica is an important wintering ground for several species of migratory birds . . .”). The Gulf itself is home to a number of listed species where launch and reentry could harm or jeopardize those species, *see* Ex. 76, particularly if the Proposed Rule increases the number of launches and reentries (as it appears intended to do). For instance, Pecan Island and the coastal marshes of Louisiana, in which SpaceX is proposing to site the world’s largest spaceport, provide habitat for the imperiled whooping crane, the piping plover (which winters on Louisiana’s coastal islands), and Kemp’s ridley sea turtle, the smallest and rarest sea turtle in the world. *See* Endangered and Threatened Wildlife and Plants; Establishment of a Nonessential Experimental Population of Endangered Whooping Cranes in Southwestern Louisiana, 76 Fed. Reg. 6066 (Feb. 3, 2011); Endangered and Threatened Wildlife and Plants; Final Determination of Critical Habitat for Wintering Piping Plovers, 66 Fed. Reg. 36038 (July 10, 2001).

Scholarly research and past agency analysis documents the risks to threatened and endangered species from commercial space activity, especially activity undertaken without environmental analysis or mitigations. There are in-progress studies of the impacts of rockets at Vandenberg Space Force Base (in California) presently analyzing potential adverse effects to multiple threatened and endangered species in the vicinity from rocket launch and landing noise. Exs. 49 & 70. NMFS itself has acknowledged that launches at Vandenberg alone will cause tens of thousands of instances of harm and harassment of protected marine mammals over five years.

See Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to U.S. Space Force Launches and Supporting Activities at Vandenberg Space Force Base, Vandenberg, California, 89 Fed. Reg. 25163, 25172–76 (Apr. 10, 2024). Moreover, the recent explosion of a Blue Origin rocket occurred at Cape Canaveral (in Florida), which “is surrounded by internationally important plants and wildlife, including the Merritt Island National Wildlife Refuge—one of the most biologically diverse areas in the world.” Ex. 51. According to a NASA employee, the region “has approximately 1,133 species of plants, 141 species of fish, 74 amphibians and reptiles, 318 birds and 29 different mammals within its boundaries Twenty-one of these species are federally protected, such as manatees, sea turtles and American bald eagles.” *Id.* The waiver of measures designed to reduce threats to these protected species is unwarranted—especially without legally required consultation.

V. THE PUBLIC COMMENT PROCESS FOR THE PROPOSED RULE IS INADEQUATE.

The FAA has proposed an unprecedented, sweeping exemption for a range of highly consequential commercial activities from every major environmental and cultural protection law in the United States. Even so, the FAA has provided only 30 days for comment, a grossly inadequate amount of time for such a consequential rule—especially during the month of August when many professionals and citizen commenters take time away from their desks.

The FAA typically gives more time to comment on less meaningful actions. FAA’s list of recent rulemaking documents show FAA routinely gives 60 days, and sometimes 90 days, for comments even on minor matters. Its decision to provide such a short comment period on such a consequential action reveals that it is far more interested in finalizing the hasty and ill-conceived rule than considering public and agency input into the proposal.

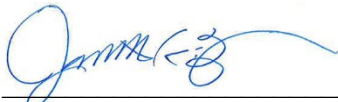
The FAA should pause its haste to finalize the rule. At the very least, FAA is required to address each and every point raised in this comment letter—and the many others like it—before finalizing the rule. Under the APA, agencies are required to “adequately explain [their] result,” as well as “respond to relevant and significant public comments.” *Pub. Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993) (citation modified) (citations omitted); *see also Ohio v. Env’t Prot. Agency*, 603 U.S. 279, 292–94 (2024) (finding EPA was likely to have acted arbitrarily and capriciously because it failed to respond to concerns raised in the notice and comment period). A failure to respond to substantive comments itself amounts to a violation of a substantive guarantee of the APA. *W. Coal Traffic League v. Surface Transp. Bd.*, 998 F.3d 945, 954 (D.C. Cir. 2021).

CONCLUSION

When an agency makes a decision, it must “give adequate reasons” for that decision. *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221 (2016). Where an “agency has failed to provide even that minimal level of analysis,” its decision cannot stand. *Id.* With this reckless

proposal, the FAA has run afoul of that standard. It should immediately withdraw the Proposed Rule and continue complying with all environmental, human health, and cultural resource protection statutes for commercial space activities.

Sincerely,



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*On behalf of DarkSky International,
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