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July 26, 2021

Gen. Wayne Monteith
Associate Administrator for Commercial Space Transportation
Federal Aviation Administration
800 Independence Avenue, SW
Washington, DC 20591

RE: Comments on Final Environmental Impact Statement for Spaceport Camden

Dear General Monteith:

On behalf of the Center for a Sustainable Coast, the Coalition to Protect America's National Parks, Georgia Audubon, the National Parks Conservation Association, the National Trust for Historic Preservation, One Hundred Miles, and Wild Cumberland, the Southern Environmental Law Center submits the following comments regarding the Final Environmental Impact Statement ("FEIS") for the proposed Spaceport Camden project in Camden County, Georgia. Given its immediate proximity to populated areas and a national park, Spaceport Camden may be the most dangerous launch site license application ever considered by the FAA.

Yet the FAA has comprehensively mismanaged its review of this proposal by failing to: release necessary information to the public; evaluate the full range of alternatives and adverse environmental impacts; and prepare a supplemental draft EIS when the project was revised. The FEIS stands as the culmination of the FAA's review gone awry.

Beyond these obstacles, the FAA's ongoing failure to provide access to records under the Freedom of Information Act has further obstructed the public's ability to participate meaningfully in the review of this project. In 2018, the Southern Environmental Law Center was forced to seek judicial intervention to obtain documents related to Spaceport Camden, including documents the FAA now relies on in the FEIS. But the FAA continues to delay access to documents and information requested under FOIA. The public cannot evaluate this project meaningfully without access to information as required by NEPA and FOIA. Accordingly, all documents responsive to any outstanding FOIA requests should be presumptively included in the administrative record for this decision.

This letter, all prior correspondence submitted by the Southern Environmental Law Center, all prior correspondence submitted by the Little Cumberland Island Homes Association, and all documents attached to that correspondence should be included in the administrative record for any Record of Decision released by the FAA for this project. All documents attached to this letter may be obtained through the following document transfer link:

<https://southernenvironment.sharefile.com/d-s10524b4ab3614f339a2fc6d54c1020b0>

To avoid any confusion, an index of documents attached to this and prior correspondence is provided as Exhibit 1.

I. Background

The Camden County Board of Commissioners (“Camden County”) has proposed Spaceport Camden, a commercial launch site for rockets and satellites. Launch activities would include up to twelve launches (including one nighttime launch), plus twelve associated wet dress rehearsals and twelve static fire engine tests, per year. Spaceport Camden would be located immediately inland from Cumberland Island and launches from the site would travel eastward across the northern end of Cumberland Island.

Cumberland Island National Seashore was created by Congress as one of only ten national seashores in the nation and includes 10,500 acres of Potential Wilderness and 9,886 acres of Designated Wilderness, the highest level of conservation protection for Federal lands. Five historic districts and two archaeological sites listed on the National Register of Historic Places are located on the Park’s northern end. According to the FAA, Spaceport Camden’s close proximity to the Park and populated areas on Little Cumberland Island make it the “closest population overflight ever proposed” for a Launch Site Operator License. Feb. 15, 2019 Memorandum from W. Monteith to D. Elwell.

Despite overwhelming public concern with this project, the FAA’s public engagement regarding this project has been inadequate. Although the FAA held public meetings and public comment periods for the project’s scoping and the release of the Draft Environmental Impact Statement (“DEIS”), the agency also withheld numerous public records from review and only released those records following litigation.

Since the release of the DEIS in 2018, both the proposed project and the information available to the FAA have changed significantly without correspondence public engagement. In January 2019, Camden County submitted its Launch Site Operator License (“LSOL”) application for a medium-large rocket launch site. In December 2019, Camden County asked the FAA to “toll” its review of the project and changed its application to focus exclusively on small rockets. In January 2020, Camden County submitted a revised LSOL application focused on small rockets. And now, in late June 2021, the FAA released the FEIS without any intervening engagement with the public.

II. Reliance on 2020 CEQ Regulations

As a threshold matter, the FAA has failed to identify whether the FEIS’ analysis was reached under the 2020 Council on Environmental Quality’s (“CEQ”) National Environmental Policy Act (“NEPA”) regulations or the prior 1978 regulations. The CEQ requires all federal agencies to identify the version of its regulations relied upon in reaching NEPA decisions. *Final Rule on Update to Update to the Regulations Implementing the Procedural Provisions of the National Environmental Policy Act*, Council on Environmental Quality, 85 Fed. Reg. 43304, *43340 (July 16, 2020) (“Agencies should clearly indicate to interested and affected parties

which procedures it is applying for each proposed action.”). The FEIS does not comply with this requirement.

Given that the CEQ is currently reevaluating its 2020 NEPA regulations and the fact that most of Spaceport Camden’s NEPA review was undertaken prior to the implementation date of the 2020 Regulations, the FAA should rely on the 1978 regulations in its review of this project.

III. The FAA’s Decision Not To Prepare A Supplemental Draft EIS Is Unlawful

The FAA has erred by not preparing a supplemental draft EIS for this project. When first presented with Spaceport Camden’s revised small rocket application, the FAA announced that a “revised draft EIS” would be prepared and an additional public comment period would be held. May 26, 2020 Email from S. Zee. But the FAA changed course several months later and announced that it would finalize the prior DEIS despite the changes to the project. Sept. 11, 2020 Email from W. Monteith. The FAA’s explanation for this change relies on a now-rescinded Executive Order and “revised analyses” concluding that all potential environmental impacts are “subsumed” within the DEIS. In response to a contemporaneous FOIA request for the “revised analyses” cited in this document, the FAA stated that no responsive documents exist.

As the FAA is well aware, the decision is a result of political interference from the White House directing the FAA not to prepare the supplemental draft EIS. In internal correspondence, the FAA advised Spaceport Camden’s lobbying team that:

Going forward without conducting the revised environmental [sic] would probably be subject to a legal challenge from Little Cumberland Island residents who oppose this; and there's a pretty good chance, as I understand, that they would win challenging the action on process grounds if we didn't perform the revised environmental.

May 29, 2020 Email from N. Rodgers to S. Howard. Yet the FAA has proceeded with this precise course of action, with knowledge that it violates NEPA.

The FEIS offers a similar explanation for not preparing a supplemental draft EIS, explaining that the changes were not “substantial,” but then contradicting itself by presenting new or additional potential impacts beyond the scope already addressed in the DEIS. FEIS Exec. Summ. at 1. This decision is legally improper in several respects. First, as described below, the change to small rockets increases the project’s potential environmental impacts in ways that are significant, substantial, and of great concern to the public. Second, the FAA improperly interprets 40 C.F.R. § 1502.9(d) to impose a single requirement, rather than alternative provisions, and erroneously conflates these two standards. Finally, the FEIS contains virtually no analysis comparing the relative environmental impacts of the two proposals.

- a. Both the change to focus on small rockets and the submission of the Launch Site Operator License Application require a supplemental draft EIS

Under CEQ regulations, an agency must prepare a supplemental EIS if the agency makes substantial changes to the proposed action that are relevant to environmental concerns. 40 C.F.R.

§ 1502.9(d)(1)(i) (2020). Alternatively, supplementation is also required if there are significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its impacts. *Id.* § 1502.9(d)(1)(ii). The FEIS' conclusion that a supplemental document is not required because the changes are "not 'substantial' in the context of presenting new or additional potential impacts beyond the scope already addressed in the Draft EIS," FEIS Exec. Summ. at 1, misreads and conflates the language of the regulation.

Further, this statement is factually wrong. The LSOL application was submitted after the DEIS, so all information contained in that document constitutes new information for purposes of the regulation. Information from the LSOL application is cited throughout the FEIS, demonstrating its relevance to environmental concerns. The FEIS itself states that certain environmental impacts were not evaluated in the DEIS "because information regarding the launches, including important launch variables such as trajectory, size, and payload of the launch vehicle, was not available at the time." FEIS at 4-34. All of this information was provided in the LSOL application subsequent to the DEIS, and therefore triggered the supplementation requirement. Correspondence between the FAA and Spaceport Camden further underscores this point. Feb. 12, 2019 Letter from K. Wong to J. Starline (stating that the LSOL application needed additional information "pertaining to the environmental review"). That the FAA initially claimed the LSOL application was exempt from release under FOIA further demonstrates the degree to which relevant information has been withheld from the public throughout this process.

The change in vehicle size separately triggers the supplemental EIS requirement. The FAA has stated consistently that vehicle size, fuel capacity, and thrust are among the "important parameters in the analysis of environmental impacts." FEIS Exec. Summ. at 4; DEIS at 2-22, 2-21 n.18, & Exec. Summ. at 1; Aug. 10, 2017 Email from D. Murray to K. Branham, et al., RE Camden Agenda ("If they want to change their approach to only small launch vehicles to satisfy the location review, then I think they need to change the approach to the EIS."). The change to focus on small rockets is a change in vehicle size, and includes changes in fuel capacity and thrust.

Further, a change in the expected failure rate is certainly relevant to environmental concerns. As discussed in more detail below, the change to small rockets likewise increased the expected failure rate. Accordingly, as stated in the FAA's own correspondence, "any prior analyses of the medium-large launch vehicle is no longer relevant to the ongoing licensing review." Jan 3, 2020 Letter from K. Coleman to J. Starline.

Finally, there appears to be little, if any, actual analysis supporting the FAA's conclusion that these changes are inconsequential. An agency cannot deem new information insignificant simply by disregarding relevant information in the record without any reasoned analysis. *Marsh v. Or. Nat. Res. Council*, 490 U.S. 360, 378 (1989). But here, in response to a FOIA request seeking information comparing the environmental impacts of the two proposal, the FAA stated that no responsive documents exist.

To the extent the FAA has found that the change to a small rocket reduces the project's environmental impacts, those beneficial changes should be disclosed. The FAA's own guidance

makes clear that “agencies can, and should, address beneficial impacts.” *Guidelines for Compliance with the National Environmental Policy Act and Related Environmental Review Statutes for the Licensing of Commercial Launches and Launch Sites*, FAA (Feb. 22, 2001) at 20; 40 C.F.R. § 1508.27(b)(1) (1978) (“Impacts that may be both beneficial and adverse.”). In virtually all cases, the FEIS has simply carried forward the analysis from the DEIS without any comparison of how the small rocket change impacts the analysis. By not disclosing the nature of the changes, the FAA has further deprived the public of the ability to understand the consequences of the change or to offer public comment on impacts that the FAA might not have considered.

IV. The FAA Has Failed To Properly Define The Project’s Purpose And Need

The FEIS’ statement of purpose and need also falls short of NEPA requirements.

- a. The statement of purpose and need is so narrow that it forestalls consideration of alternative actions.

The FEIS offers a two-part statement of purpose and need that offers no discernable need for FAA action, unreasonably favors Camden County’s private goals, and unlawfully constrains the possible range of alternatives. 40 C.F.R. § 1502.5 (2020) (“The [environmental impact] statement ... will not be used to rationalize or justify decisions already made.”). “[A]gencies are not permitted to define the objectives of a proposed action so narrowly as to preclude a reasonable consideration of alternatives.” *Wyoming v. U.S. Dep’t of Agric.*, 661 F.3d 1209, 1244 (10th Cir. 2011), *cert. denied*, 568 U.S. 928 (2012).

The FEIS presents two competing statements of purpose and need: one for Camden County and one for the FAA. The FEIS describes Camden County’s statement of purpose as “to enhance Camden County’s economic diversification through the construction and operation of a commercial space launch site” that “would allow the County to offer the site to small, orbital, vertical-launch vehicle operators to conduct commercial launches from the east coast of the United States.” FEIS at 1-4 to 1-5. As for the County’s statement of need, the FEIS states that the “proposed commercial space launch site is needed to enhance the County’s economic diversification” and “to further the County’s vision” of “developing a world-class spaceport that would also attract businesses to support its operation.” *Id.* at 1-5. The County’s statement concludes by asserting “the proposal is also needed to increase launch site robustness on the east coast.” *Id.*

The agency’s statement of purpose and need is much broader. Essentially, the FAA’s stated purpose and need is to provide “oversight of commercial space launch activities, including issuing Launch Site Operator Licenses for the operation of commercial space launch sites” and “to protect the public health and safety, safety of property, and national security ... and to encourage, facilitate, and promote commercial space launch and reentry activities by the private sector.” *Id.*

Although the FAA’s purpose and need statement generally describes the agency’s regulatory role, it fails to identify any specific agency needs, goals or objectives. In particular,

the FAA has failed to identify any parameters for balancing competing needs. Spaceport Camden illustrates this problem, as the new launch capacity is apparently unneeded and is less safe than existing locations. Without a statement of the FAA's own agency interests, it has abdicated any role in balancing competing interests and the agency's interests against those of the applicant. By failing to identify any meaningful statement of purpose and need statement, the FAA has improperly adopted Camden County's overly-constrained statement in the FEIS.

The County's statement is too narrow and unreasonably forestalls consideration of alternative actions. The County's statement requires consideration of only those alternatives in which a license is issued to construct and operate a commercial space launch site, located on County property, for small launch vehicles. The County's statement of purpose and need also references other site-specific requirements and evaluation criteria which further limit the range of alternatives to the County's preferred alternative. Indeed, the FEIS meaningfully considered only two alternatives: the proposed action and a "no action" alternative. Although the FEIS purportedly considered other alternatives in Section 2.3, a careful review of those alternatives shows that none of them could meet the site-specific requirements and criteria deemed necessary by the County and were never intended to be viable options.

Such a narrowly drawn purpose and need statement foreordains approval of the launch site and is improper under NEPA.

b. The revised purpose and need statement is not justified.

Next, the FAA revised the purpose and need statements in the FEIS to reflect Camden County's decision to change the project to focus on small rockets based on "perceived market demand," FEIS Exec. Summ. at 1, without evaluating the veracity of this statement. The FAA "must independently evaluate any information or analysis submitted by an applicant before using it to support a NEPA review." Order 1050.1F at 2-5. Camden County has not provided any supporting analysis showing that there is a market demand for new sites to launch small rockets. The fact that Spaceport Camden has not identified a private partner to launch rockets from the site calls into question whether the site is needed.

The FAA possesses information regarding the number of small rocket launches and the number of small rocket launch slots available, but has not conducted any analysis into the need for this site. As set forth in the tables below and attached, publicly available information indicates that the number of small rocket launch sites currently available vastly exceeds the need for small rocket launch sites. As a result, most small rocket launch sites remain unused.

LAUNCH SLOTS								
Orbital Liquid-fueled Small-lift Class Rockets								
Launch Site	Pad ID	Status	Annual Slots Active	Total Annual Slots Approved/ Planned	Total Launches since 1/1/2015	Last Launch	Commercial Space Company	Note
Totals>			164	315	18			
Kodiak, AK Pacific Spaceport Complex								
	LP-2	Active	8	8	2	2018	Multi-user	FAA-licenced
	LP-B	Active	8	8	1	2020	Astra	FAA-licenced
Vandenberg								
	SCL2	Active	12	12	0	none	Firefly	
	B-330	Planned	0	12	0	none	Relativity	
9 New Commercial Pad Sites		Planned	0	0	0			
Wallops MARS								
	OB	Active	8	8	0	none	Multi-user	FAA-licenced
	OC	Active	8	8	0	none	Rocket Lab	FAA-licenced
Cape Canaveral								
	LC-16	Planned	0	11	0	none	Firefly	
	LC-20	Planned	0	24	0	none	Multi-user	FAA Final EA May 2020
	LC-48A	Approved	0	52	0	none	Multi-user	
	LC-48B	Approved	0	52	0	none	Multi-user	
12 Sites Inactive								
Kennedy Space Center								
	LC39C	Inactive	0	0	0	none	Multi-user	
Mahia								
	LP-1	Active	120	120	15	2020	Rocketlab	FAA-licenced launches
	LP-2	New	0	0	0	none	Rocketlab	FAA-licenced launches
Naval Outlying Airfield San Nicholas Island, CA.								
	LP1	Inactive	0	0	0	none	Multi-user	Available for DARPA
Omelek, Marshall Islands								
	LP1	Inactive	0	0	0	2009	Multi-user	FAA-approved launches

Prepared by Steve Weinkle

The FAA's own documents forecasting expected launches in the future underscores this same conclusion. *The Annual Compendium of Commercial Space Transportation*, Federal Aviation Administration (2018). This concern about the need for new launch capacity has been raised in comments previously, but is not addressed in the FEIS or its response to comments.

The FEIS' failure to properly define the project's purpose and need, and its overreliance on an overly narrow statement submitted by the project applicant, falls short of the review required under NEPA and other statutes.

V. The FAA Has Failed To Conduct A Proper Alternatives Analysis

The alternatives analysis is the heart of the NEPA review. Here, the FAA's alternatives analysis has been so comprehensively coopted by Spaceport Camden that both the DEIS and FEIS consider only a single "action" alternative, despite the fact that the alternatives in the two documents are different. Throughout its NEPA review, the FAA has improperly delegated critical decisions to the applicant, relied on unverified information, and adopted an unlawfully narrow view of its role under NEPA. June 8, 2016 Email from S. Zee to S. Howard re Camden – issues from the project. The FEIS manifests these errors in many different ways.

a. The FAA erred by not considering alternate sites outside of Camden County.

To the extent there is any need for new small rocket launch sites, the FEIS erred by failing to consider the use of other, safer launch sites. The FEIS ignores this critical issue by concluding that “only locations within Camden County were considered.” FEIS at 2-36. However, NEPA requires agencies to balance agency interests with those of project applicants. Even it is not the applicant’s preferred option, NEPA requires the FAA to compare the environmental impacts of launching small rockets from other facilities to the impacts of operating Spaceport Camden. By not scrutinizing the need for additional launch capacity or alternative sites outside the county, the FEIS’ alternatives analysis has been reduced to considering whatever Spaceport Camden is proposing at its predetermined site.

b. Camden County’s purchase option for the site has biased the alternatives analysis.

Both CEQ regulations and FAA guidance prohibit an applicant from using prior financial investment to dictate the results of the alternatives analysis. Here, Camden County entered a purchase option for the Union Carbide site, and the County’s budget documents show that it has invested over \$3 million in real estate acquisition costs for the Union Carbide road property. FAA guidance requires the agency to “review a proposed action by an applicant that has acquired land ... without prior approval by the FAA to determine whether the action ... has limited full and objective consideration of alternatives.” FAA Order 1050-1F § 2-7.

But instead of conducting this required analysis, the FEIS cites financial considerations and the putative inability to acquire other properties as a basis for excluding alternate sites. FEIS at Table 2.3-1. These conclusions, in turn, appear to be based on the self-serving and unverified analysis prepared by the applicant. Andrew Nelson, Spaceport Camden Site Analysis – UCC-BCS Site at 4 (July 18, 2016) (“The [Union Carbide] site has been determined affordable by the County, which has entered into an option to purchase the UCC site, and is actively engaged with [Bayer] for the sale of the other piece of property....”). The FEIS contains no supporting analysis to ensure that Camden County’s prior financial investment in this preferred location has not predetermined its alternatives analysis.

c. The FEIS should have reevaluated alternate launch sites in light of the revised proposal.

The FAA also erred by failing to reconsider alternate sites in light of the project’s change to focus on small rockets. Both the DEIS and FEIS make clear that the FAA’s Part 420 requirements were considered in evaluating potential alternative sites. FEIS at 2-37 to 2-38. Several alternate sites were excluded because they lack “clear potential to satisfy FAA regulations, 14 CFR Parts 450 or 420.” FEIS at Table 2.3-1. The FEIS does not indicate the specific requirements that are not met, but at the DEIS stage these same sites were excluded because they did not meet the site radius requirement in 14 C.F.R. § 420.21 for medium class rockets. Andrew Nelson, Spaceport Camden Site Analysis – West Site / Ceylon at 3 (July 15, 2016) (“...the site does not meet the 14 CFR 420.21 Table 2 requirement for no potential persons in the immediate 10,500 feet radius of the launch pad.”). But the Section 420.21 site radius

requirements for small rockets are smaller, and FEIS does not indicate that this analysis was revisited.

The FEIS also should have considered an alternative that reduced onsite facilities to be consistent with the single rocket/single azimuth discussed in the current LSOL application. Many of the onsite facilities (such as onsite fuel storage) were not reduced to be consistent with the launch vehicle/single azimuth the FEIS purports to consider. This error is most easily illustrated by the Coast Guard Limited Access Area (“Coast Guard LAA”). This safety zone was designed to accommodate launch azimuths “from 83 to 115 degrees for vehicles up to and including medium-large lift class.” 83 Fed. Reg. 45,864, 45,865 (Sept. 11, 2018). The FEIS acknowledges this fact, describing the proposed LAA as “a composite proposed LAA for a variety of launch trajectory scenarios.” FEIS at 1-8. Although the FEIS purports to consider only the 100-degree azimuth, the Coast Guard LAA has not been reduced accordingly. There is no question that a smaller Coast Guard LAA would limit the impacts of the proposed project, but such an alternative was not considered.

d. The preferred alternative does not meet its own criteria

One of the primary criteria for site selection is that the site must have “the clear potential to satisfy FAA regulations, 14 CFR Part 420.” FEIS at 2-37. As discussed in more detail below, the proposed launch site does not meet the requirements of 14 C.F.R. § 420.21(a).

e. The small rocket alternative is not a logical outgrowth of the DEIS

The FEIS is also flawed because the current preferred alternative is not a logical outgrowth of the DEIS. The DEIS’ statement of purpose and need was to construct a medium-large rocket launch site. Sites that could not meet this criterion were eliminated, and the DEIS did not consider a small rocket-only alternative. Therefore, the current preferred alternative is not a logical outgrowth of the DEIS and its analysis.

VI. The FAA Has Failed To Evaluate Spaceport Camden’s Environmental Impacts

The FAA has used its Part 420 regulations to improperly constrain the scope of NEPA review by excluding reasonably foreseeable effects, planned expansion of the facility, and connected actions.

a. The FAA has improperly segmented its review of Spaceport Camden.

CEQ regulations and NEPA case law prohibit agencies from segmenting projects to minimize their apparent environmental impact. “The rule against segmentation was developed to insure [sic] that interrelated projects the overall effect of which is environmentally significant, not be fractionalized into smaller, less significant actions.” *Taxpayers Watchdog, Inc. v. Stanley*, 819 F.2d 294, 298 (D.C. Cir. 1987).

Here, the FEIS only considers the impacts of Spaceport Camden’s construction and partially considers the effects of a single hypothetical rocket launched on a single launch azimuth. The FAA is fully aware that Spaceport Camden will not (and cannot) operate in this fashion, and instead will seek additional licenses and approvals from the FAA in the future. The

FEIS' repeated references to additional NEPA review are an implicit acknowledgement of this inevitability. The project considered in the FEIS does not meet the standard for independent utility, because the current single rocket/single azimuth configuration is not viable and the rocket considered in the application does not exist and is not known to be operational.

In short, the FEIS is a trojan horse - a project artificially reduced in scope and scale to understate environmental impacts with full knowledge that Spaceport Camden will seek additional authorizations for more dangerous uses of the site in the future.

a. Evaluating a single, non-existent rocket is unreasonable.

The FEIS' analysis focuses on the environmental impacts of a single launch vehicle described in Spaceport Camden's LSOL application. The FEIS states that launch vehicles, launch azimuths, or launch trajectories that fall outside the single option described in the LSOL would require additional NEPA review. FEIS Exec. Summ. at 3. Focusing on a single launch vehicle and a single azimuth tracks the FAA's approach to launch site licensing, which only requires an applicant to demonstrate that a single "notional" rocket can be launched from the site. But no spaceport operates in this fashion. Instead, they allow launches of different sized vehicles and different azimuths.

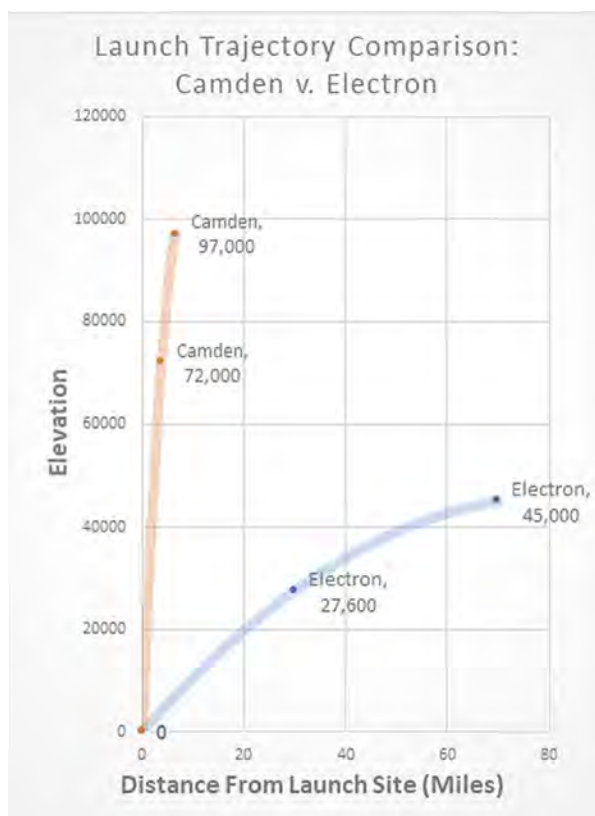
Further, as the FAA is well aware, there is no rocket in operation that meets the specifications of the "notional" rocket described in the LSOL and purportedly evaluated in the FEIS. Instead, Spaceport Camden has invented those parameters for the sole purpose of obtaining the launch site license. The specifications of the rocket described in Spaceport Camden's LSOL application are substantially smaller than any other small class rocket that has been launched successfully, including the Rocket Lab Electron cited in the FEIS as a comparison. FEIS Exec. Summ. at 10; FEIS at 2-22. The differences include "important parameters in the analysis of environmental impacts," like fuel capacity and thrust. FEIS at 2-22. Further, there is no company seeking to launch the fictional Spaceport Camden rocket at this or any other location. In short, the FEIS purports to evaluate the environmental impacts of a rocket that does not exist. NEPA reviews must be premised on facts, not science fiction.

The table below compares the specifications outlined in the Spaceport Camden application to publicly available data regarding other small rocket launch vehicles.

US SMALL-LIFT CLASS ROCKETS					
Lift Class*	Rocket	Thrust ft-lbs.	Larger Than Camden	Payload lbs LEO	Status
SLV	Spaceport Camden	18,500		100	hypothetical
SLV	Astra 1.0-3.2**	32,500	176%	224	development
SLV	Phantom Daytona^	35,000	189%	990	proposed
SLV	Rocket Lab Electron	43,000	232%	660	operational
SLV	Vector - R Reborn	56,000	303%	704	proposed
SLV	Astra 5.0^	55,500	300%	898	proposed
SLV	Launcher 1	88,000	476%	1,704	development
SLV	Falcon 1	102,000	551%	400	retired
SLV	RS1	117,000	632%	2,970	development
SLV	Alpha	150,104	811%	2,231	development
SLV	Terran 1	228,600	1236%	2,750	development
MLV	Rocket Lab Neutron^	700,000	3784%	17,600	proposed
MLLV	Falcon 9 v1.1***	1,323,000	7151%	28,990	retired
* SLV = Small Lift Vehicle MLLV = Medium Heavy Lift Vehicle					
^ thrust values are estimates					
**smallest rocket under development					
***specification of rocket originally proposed for Spaceport Camden					

Concerns about the viability of the proposed launch vehicle have been raised in prior correspondence with the FAA, but are not addressed in the FEIS.

Further, the FEIS and LSOL application rely on a launch trajectory for the Spaceport Camden rocket that is significantly more vertical than the launch trajectory utilized for the Rocket Lab Electron and other rockets. This more vertical trajectory is less advantageous because it delays use of the “gravity turn,” requiring more fuel to reach the same altitude as a rocket launched on a less vertical trajectory. Spaceport Camden proposed this implausible launch trajectory to game the FAA’s safety regulations. But NEPA requires the proposal described in a FEIS to stand on its own, and the FAA knows that the launch trajectory relied on for the FEIS’ environmental review is implausible. The image below illustrates the launch trajectory of the fictitious Spaceport Camden rocket to the launch trajectory of the Rocket Lab Electron, the rocket cited by the FEIS as a frame of reference.



Limiting the FEIS to a single rocket that does not currently exist, and was proposed by the applicant for the specific purpose of understating its potential environmental impact, is improper under NEPA.

b. The FEIS does not properly consider the risk and effects of rocket failures.

Perhaps the most important issue in the environmental review of Spaceport Camden is the issue of rocket failure. NEPA directs agencies to focus their environmental review on the most important issues. 40 C.F.R. § 1500.4(b), (c) (2020). Yet throughout the FEIS, the issue of rocket failure is addressed in a generic fashion and in relation to the Rocket Lab Electron rocket. FEIS at 2-35. More concerning, the FEIS’ analysis turns on the applicant’s unverified assumption that:

[T]he probability of a failure occurring that would have the potential to adversely affect the environment or public health and safety is a significantly lower percentage of the overall failure rate.

FEIS at 2-35. The FEIS provides no support for this assumption, does not seek to verify it, or explain why the FAA’s review of this critical issue is premised on an “assumption.” 40 C.F.R. § 1502.24 (1978) (professional and scientific integrity of EIS analysis).

Spaceport Camden’s own consultant states, “Launch vehicle reliability is an important component in the launch risk analysis.” *Aerospace Corporation Presentation*. See also, *Public Safety Analysis for Launch Operations*, FAA. The FAA has performance information for small

rockets generally and the Rocket Lab Electron specifically. The FAA’s internal discussion of small rocket failure rate (including the Electron) likewise supports the conclusion that the change to focus on small rockets means a higher expected failure rate. Email from T. Braun to D. Murray, RE: Camden Ec study for pops on Cumberland Island (Oct. 31, 2018); *see also* Email from T. Braun to S. Jackson, RE: Camden LCI pop number (Oct. 12, 2018) (“Note, a smaller vehicle (i.e. Rocket Lab) would reduce the casualty area, but the reliability would be less (increasing the [probability of failure]).”).

Although the FAA has information on the performance of specific rockets, this information is not readily available to the public. However, based on public information it appears that the Rocket Lab Electron’s failure rate is significantly higher than the rate identified in the DEIS. “*Electron launch fails*,” by Jeff Foust for Spacenews (May 15, 2021)(“The launch is the second failure of the Electron in less than a year, and the third in 20 launches.”). Further, although the FEIS consistently relies on information submitted in the LSOL application, it ignores the failure rate disclosed in that document (20%) without explanation. This issue has been raised repeatedly with the FAA, yet is not addressed in the FEIS.

The void created by the FAA’s silence on this issue has been filled with unverified statements by the project applicant. Specifically, the Georgia Department of Natural Resources relied on failure data submitted by the applicant in its coastal consistency determination that is inconsistent with the FEIS’s limited treatment of the failure rate issue. Coastal Consistency Certification, Georgia Dept. of Natural Resources (July 8, 2021) at 14.

c. The FEIS fails to consider the impacts of debris damage from rocket failures

One concern with rocket failures is falling debris, yet the FEIS does not address this issue. This omission is particularly striking because information regarding the likely location of debris from a failed launch exists and has been selectively provided to certain federal agencies. But this information is not included in the FEIS, and has not been provided to other coordinating federal agencies or the public.

For instance, memos provided to the U.S. Navy contain a map with statistical modeling showing where debris from a rocket failure is likely to land.

ATTACHMENT A
Impacts for 100-deg Reference Trajectory (100,000 failure cases)



This image shows that inert debris from a failed launch may land across most of Cumberland and Little Cumberland Islands. But neither this map, nor any comparable information, is provided in the FEIS. In fact, the FEIS never discusses where debris from a failed launch might land or what the environmental impacts of falling debris might be to private property, historic structures, or sensitive resources on Cumberland Island National Seashore.

d. The FEIS does not disclose the risk this project poses to human health.

CEQ regulations broadly demonstrate the importance of human health and safety considerations in NEPA analysis. For instance, the FAA must “consider . . . the degree to which the proposed action affects public health or safety” when determining whether to prepare an EIS. 40 C.F.R. § 1501.3. And when analyzing the environmental effects of a proposed action or alternatives in an EIS, the FAA must include “health effects.” 40 C.F.R. § 1508.1.

But here, the FAA omitted from the FEIS any analysis of human health effects resulting from spaceport operations, including the risk of injury or death, despite having received a substantial amount of data concerning this subject from the applicant in the LSOL application. The FEIS states that an LSOL application contains “rigorous public safety analyses that account for the launch vehicle and its reliability statistics, the associated fuel types, payload, and individual trajectory.” FEIS at 2-35. For example, Spaceport Camden’s LSOL application contains information relating to expected casualty rates, debris fields, and areas that must be cleared of the public before a launch for safety reasons. Exhibits 24 and 25 to the LSOL

application, copied below, show information regarding the “Ec” – expected casualties – for launches from Spaceport Camden.

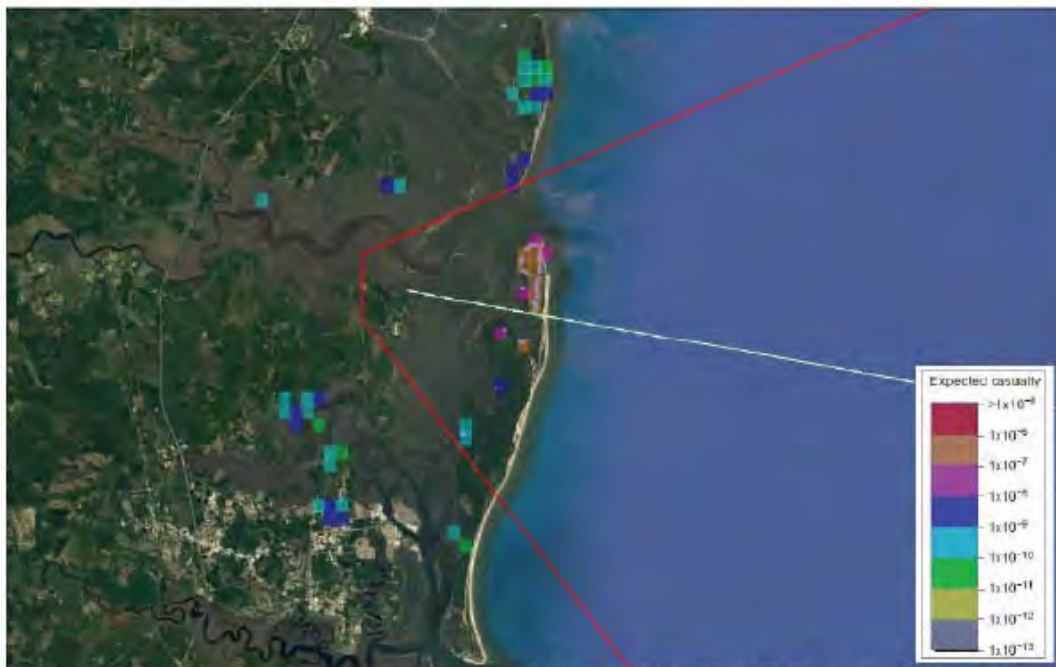


Exhibit 24. Spaceport Camden 100 Degree Azimuth Launch Trajectory with AFTS Limit Lines – First Stage Estimated Ec Represented as Colored Population Grid Squares

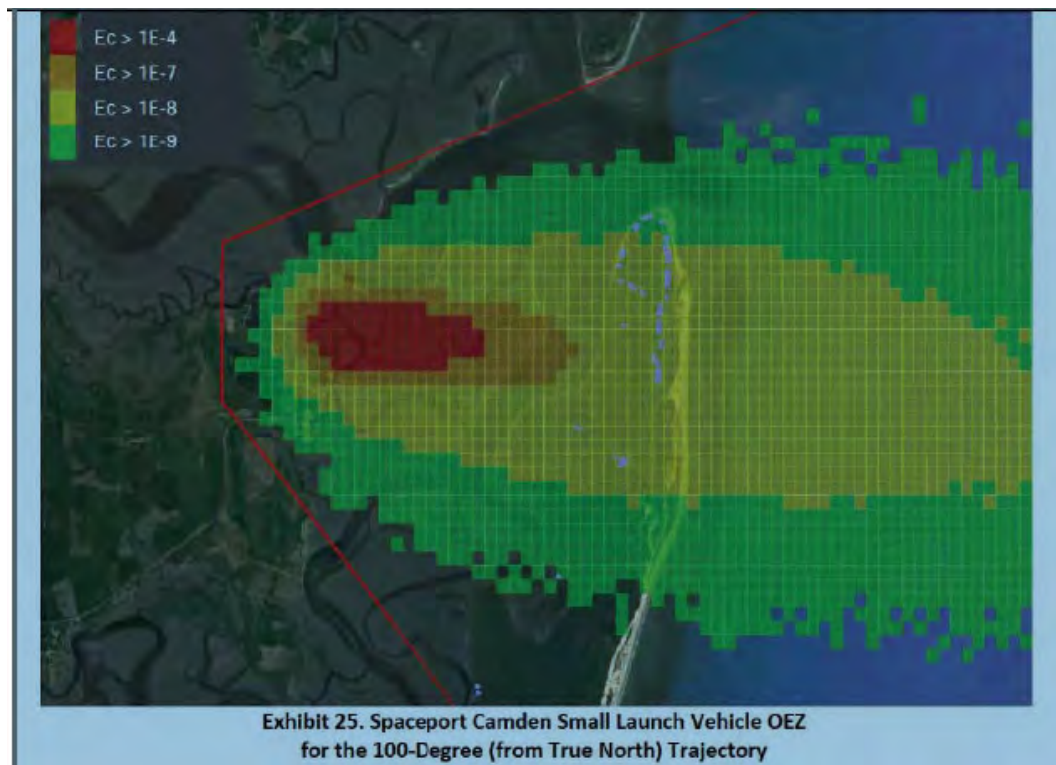


Exhibit 25. Spaceport Camden Small Launch Vehicle OEZ for the 100-Degree (from True North) Trajectory

These images show that debris from an exploding rocket could land in populated areas over which Camden County has no control, including Little Cumberland Island and Cumberland Island. The FEIS should have analyzed and disclosed information like this illustrating how the spaceport's operation could impact human health and safety. Importantly, this critical safety information was submitted to the FAA after the release of the DEIS. The FAA never made this or comparable safety information available to the public through the NEPA process, and it is not contained in the FEIS. In fact, the FAA apparently has an agency practice of improperly excluding safety information from its NEPA review of launch site licenses. *Licensing and Safety Requirements for Operation of a Launch Site, Federal Aviation Administration*, 65 Fed. Reg. 62,812, 62,817 (Oct. 19, 2000).

NEPA does not allow the FAA to withhold important information relating to human health and the environment just because the agency is considering the information in a different context. Further, it is difficult to imagine information more integral to the NEPA process than the risk a project poses to human health and safety.

- e. The FEIS does not evaluate the risk of wildfire, its environmental impacts, or appropriate mitigation measures.

Another primary concern is that a launch failure could trigger a wildfire on Cumberland or Little Cumberland Islands. The FAA voiced this precise concern, including the fear that a failed launch could trigger an “uncontrollable” wildfire. Dec. 16, 2019 Letter from K. Wong (FAA) to J. Starline (Camden County). The issue of wildfire was not addressed in any fashion in the DEIS. The FEIS attempts to address this omission by noting that: the overflight exclusion zone does not overlap with the island; a Wildland Fire Management and Burn Plan would be prepared in coordination with the U.S. Fish and Wildlife Service (“FWS”) and Georgia Department of Natural Resources (“GA DNR”); and a Fire Mitigation Plan was prepared as part of the LSOL application. FEIS at 4-29.

This lack of meaningful analysis does not correspond with the FAA's assessment of the risk posed by wildfire. As discussed above, the risk of rocket failure is not limited to the overflight exclusion zone. The Wildfire Management and Burn Plan has not yet been prepared, so the FAA cannot evaluate the degree to which this future plan will address the potential risk of wildfire or whether it could be implemented within the national park. The Fire Mitigation Plan, another attachment to the LSOL application that post-dates the DEIS, is devoid of meaningful analysis of the wildfire risk and potential response.

Environmental impact statements routinely evaluate the risk of wildfire and potential mitigation measures, and the FAA cannot ignore this issue simply because it is unfamiliar with wildfires. For example, the attached “*Wildfire Risk Assessment Framework for Land and Resource Management*” describes “a general framework with which to assess wildfire risk and explore mitigation options, and illustrates a process for implementing the framework.” Although

the FAA need not follow this precise process,¹ the FEIS does not contain the basic elements described in the framework includes analysis to quantify the risk, identify mitigation measures, and evaluate the likely environmental effects if mitigation measures are implemented. There are numerous examples of environmental impact statements prepared by other agencies that actually undertake this type of analysis.²

Here, the FAA failed to identify a critical threat to Cumberland Island National Seashore and private property in the DEIS, conducted no meaningful analysis of the problem in the FEIS, and instead relies on the promise of a future, undefined plans to address this threat. This approach is completely at odds with the purpose and requirements of NEPA.

f. The FEIS does not address issues related to climate change and climate adaptation.

The FEIS fails to take a hard look at the impacts of climate change on the proposed action. FAA guidance requires a FEIS to discuss the extent to which a proposed action or alternatives could be affected by future climate conditions, which includes sea level rise, based on published sources applicable to the study area. FAA Order 1051.1F Desk Reference § 3.5. The discussion should also consider ways to adapt to sea level rise and more powerful storm surges. *Id.*

Here, the FEIS reasons that “sea level rise and other climatological changes such as an increase in extreme weather events, may or may not impact the spaceport in the coming years.” *See, e.g.*, FEIS at 4-26. This conclusory statement offers no actual analysis and falls short of the

¹ Other examples include *Fire Hazard Planning from California Governor’s Office of Planning and Research: Considerations When Developing Fire Hazard Policies for the General Plan* at 15-26. http://opr.ca.gov/docs/Final_6.26.15.pdf

Draft Workbook for the Development of Cultural Resource Management Protocols for Fuel Management Projects. National Park Service <https://www.nps.gov/articles/upload/Fuels-Management-Workbook-2.pdf>.

² *Everglades Park Fire Management Plan EA* <https://parkplanning.nps.gov/showFile.cfm?projectID=19541&MIMETType=application%252Fpdf&filename=ENP%20FMP%20EA%20Oct%202014%205FCover%2C%20Summary%2C%20Chapter%201%20Purpose%20and%20Need%20for%20Action%20pdf&sfid=195110>

Pinto Valley Mine, AZ Final EIS at Section 3.8.3 Fire and Fuels Management Affected Environment. <https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?downloadAttachment=&attachmentId=325649>

Ten Cent Community Wildfire Protection Project Final EIS at Section 3.2, Fire and Fuels. <https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?downloadAttachment=&attachmentId=234305>

Trinity Post Fire Hazard Reduction and Salvage Final EIS: Fires and Fuels at pages 69-92. <https://cdxnodengn.epa.gov/cdx-enepa-II/public/action/eis/details?downloadAttachment=&attachmentId=239047>

FAA’s own requirements. In its response to comments, the FEIS addresses the issue of climate change in more detail, but this discussion of climate change, sea level rise, and coastal resiliency is inadequate and rife with scientific flaws. FEIS at A-1787. Further, it does not analyze or identify any specific measures to protect the site against sea level rise beyond noting that the final siting and engineering would consider the issue. *Id.*

As a threshold matter, the FEIS’ discussion of sea level rise in its response to comments misinterprets the 2014 Intergovernmental Panel on Climate Change (“IPCC”) report. The FEIS quotes the IPCC report for the proposition that “there is a 95% probability that sea level rise will be less than one meter by 2100,” but fails to acknowledge the IPCC report’s caveat that sea level rise will not occur uniformly across the globe, and its sea level rise estimations are global averages not intended to apply to a single region.

In fact, the Georgia coast experiences a higher rate of sea level rise than the global average. The National Oceanic and Atmospheric Administration (“NOAA”) has produced localized sea level rise scenarios that improve upon the 2014 IPCC report and consider local factors that affect the rate of sea level rise, such as subsidence and ocean currents. William V. Sweet, et al., *Global and Regional Sea Level Rise Scenarios for the United States*, NOAA (Jan. 2017). The NOAA 2017 scenarios, a product of the U.S. Global Change Research Program Interagency Task Force and part of the 4th National Climate Assessment, provide the most advanced and applicable sea level rise scenarios available for the Georgia coast.³ The FEIS acknowledges the existence of this data, but instead relies on the older, global-level estimates found in the 2014 IPCC report.⁴

Applying this NOAA data to the Spaceport Camden site—as the FEIS should have—shows that higher sea levels would inundate portions of the proposed Spaceport site and put the project at increased risk from flooding during a rainfall, storm surge, or tidal flooding event.⁵

³ These methods and projections update research that formed the 3rd National Climate Assessment, and incorporate more advanced models and techniques from federal agency and academic publications to create hybrid results. The NOAA 2017 report incorporated models such as USACE 2013, Kopp et al. 2014, and CARSWG 2016 to create estimations using probability on a gridded scale to form localized projections. NOAA 2017.

⁴ Local data sea level rise data is also available in the National Park Service’s 2018 projections on sea level rise, which includes projections for nearby Cumberland Island National Seashore. Caffrey, M. A., R. L. Beavers, and C. H. Hoffman. 2018. *Sea level rise and storm surge projections for the National Park Service*. Natural Resource Report NPS/NRSS/NRR—2018/1648. National Park Service, Fort Collins, Colorado. But, again, this information was not considered in the FEIS.

⁵ “Increasing warming amplifies the exposure of small islands, low-lying coastal areas and deltas to the risks associated with sea level rise for many human and ecological systems, including increased saltwater intrusion, flooding and damage to infrastructure (high confidence).” IPCC, 1.5 Degrees: Summary for policy makers, (2018), B.2.3., <https://www.ipcc.ch/sr15/chapter/spm/>.

The NOAA 2017 Intermediate-High scenario curve projects over 6 feet of sea level rise near the Spaceport Camden site by 2100, compared to baseline sea levels in the year 2000. This scenario is consistent with observations of sea level rise along the Southeast coast, and it models a future with emission levels similar to today.⁶ Images applying this NOAA data to the site were submitted to the FAA in comments on the DEIS but are not addressed in the FEIS in any fashion.

The FEIS glibly reasons that the issues of climate change, sea level rise, and storm surges do not need to be addressed in a substantive way because “climate change may be halted or even eventually reversed.” FEIS at A-1788. No evidence is cited to support this claim, because it is contrary to the scientific consensus that the unavoidable effects of climate change are already set in motion.⁷ Sea level rise is among the climate change processes that will play out for centuries regardless of interventions to curb further warming, and therefore presents a major threat to coastal infrastructure sites like Spaceport Camden.

More is required. The FAA’s decision to ignore directly applicable information and not consider the potential impacts of climate change on the project are improper under NEPA, the FAA’s own guidance, and the new executive orders requiring agencies to address climate change.⁸ Further, the FEIS fails to consider mitigation measures and the extent to which they may be required to protect the site from sea level rise. In comparison, the FAA’s discussion of these issues in the Final Programmatic EIS for the Wallops Island Flight Facility spanned multiple pages, but is completely absent here.⁹

g. Failure to Consider Effects on Boat Traffic

Spaceport Camden plans to use the Coast Guard LAA to limit public access to areas under the flight path of rocket launches from the site. But the FEIS fails to consider the impact of these closures on shipping and other boat traffic in the area. Each closure event implemented by Spaceport Camden would interrupt or prevent:

- All boat traffic on approximately 10.5 miles of the Intercoastal Waterway;
- All boat traffic on the Satilla River;
- Access to Cumberland and Little Cumberland Islands;
- All boat traffic off the Georgia coast for approximately 17 miles; and

⁶ NOAA 2017 at page 35. Comparing the observed local sea level rise trends and local projections in several U.S. locations, NOAA found that “in most circumstances, the range of interannual relative sea level change/variability since 2000 has been bounded (to date) by the trajectory of the Intermediate-High scenario.”

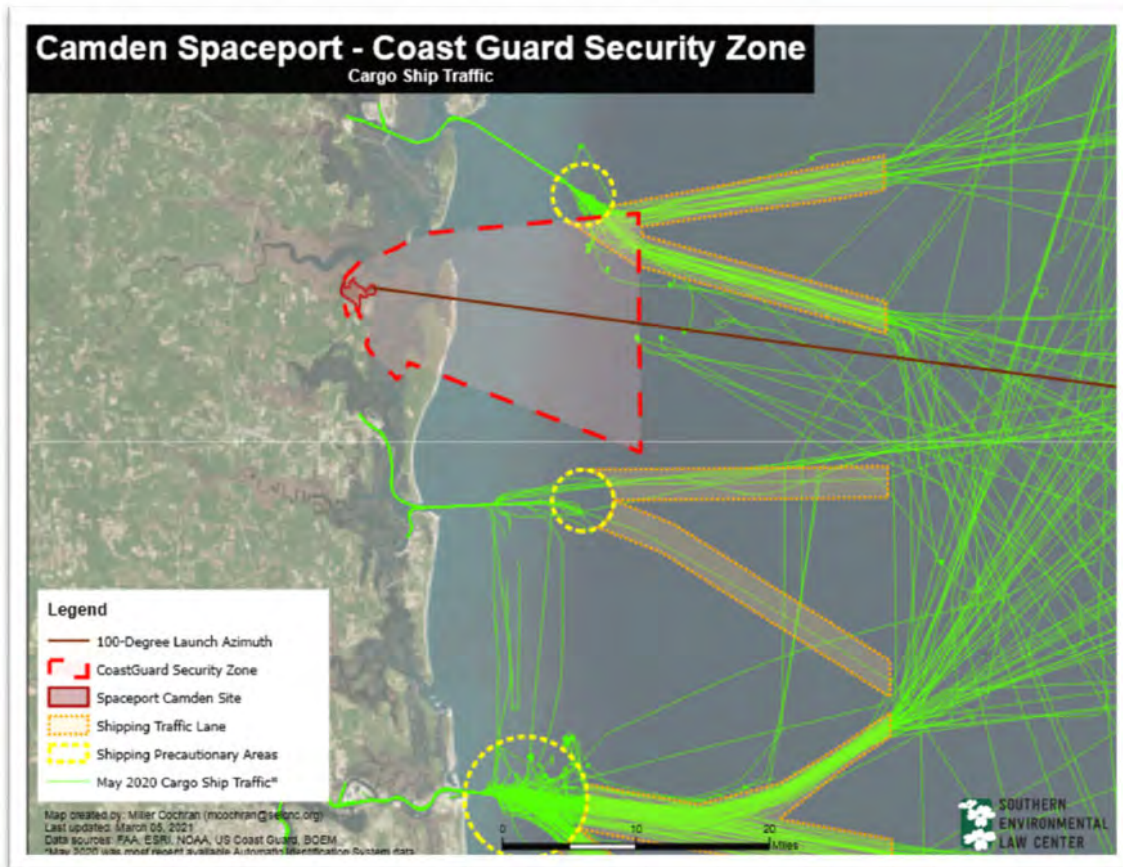
⁷ IPCC, Special Report: Global Warming of 1.5 Degrees, Chapter 1, (2018), <https://www.ipcc.ch/sr15/chapter/chapter-1/>.

⁸ <https://www.whitehouse.gov/briefing-room/presidential-actions/2021/05/20/executive-order-on-climate-related-financial-risk/>.

⁹ *Wallops Flight Facility Final Site-wide Programmatic Environmental Impact Statement*, National Aeronautics and Space Administration (May 2019) at 3.5.1.9, https://code200-external.gsfc.nasa.gov/sites/code250wff/files/inline-files/wff_final_site-wide_peis.pdf.

- Freight traffic approaching or departing the Port of Brunswick.

Specifically, the navigation restrictions will have significant impacts on freight, recreational, and fishing vessel traffic in the area. The map below illustrates shipping traffic in relation to the proposed closure area, and shows substantial overlap between the closure area and freight traffic entering and existing the Port of Brunswick, including shipping traffic lanes and shipping precautionary areas.¹⁰ The FEIS does not evaluate how closure of these areas and resulting delays will impact shipping traffic in the Port of Brunswick.



Similar mapping demonstrates that these closures will impact boat traffic on the Intracoastal Waterway and will exclude key fishing areas.

Further, the FEIS does not address how the Coast Guard LAA restrictions could be minimized to reduce their impacts on boat traffic. The Coast Guard LAA is based on a range of launch azimuths between 83 to 115 degrees, rather than the single 100-degree azimuth discussed in the FEIS. Thus, limiting the Coast Guard LAA to the single 100-degree azimuth would

¹⁰ Data in the maps below was sourced from the Automatic Identification System provided by US Coast Guard, NOAA, and BOEM through Marine Cadastre and aggregated for visualization and sharing by ESRI.

dramatically reduce its scope and therefore the areas impacted by closures and other access restrictions.

With respect to commercial fishing, research has found that a large percentage of the annual commercial shrimp catch in the area occurs on a limited number of days. *Shrimps in Space: Charting Contentious Spatialities Between Commercial Shrimping and Spaceport Industries*, Ian Rossiter (University of Georgia Master of Science Thesis) (2017) (A shrimper “may make 20% of their season’s catch in a singular prime condition day.”). The FAA could minimize impacts on commercial fishing by prohibiting rocket launches during these peak fishing periods. The FAA could limit the impact on recreational boat traffic by prohibiting launch closures during the tidal periods most conducive to boat traffic.

- h. The FEIS does not consider the impacts to cultural, archaeological, and historic resources, and improperly relies on the incomplete Section 106 review

Under NEPA, the FAA is required to consider the project’s impact on archaeological, cultural, and historic resources. Although this requirement is independent of its obligations under Section 106 of the National Historic Preservation Act, there is substantial overlap in the subject matter. “Agencies should consider their section 106 responsibilities as early as possible in the NEPA process, and plan their public participation, analysis, and review in such a way that they can meet the purposes and requirements of both statutes in a timely and efficient manner.” 36 C.F.R. § 800.8(a)(1).

The FEIS was released despite the fact that the Section 106 process is unfinished. This created a disconnect between the two processes, in that the FEIS purports to reflect a completed evaluation of the project’s impacts on historic properties under NEPA yet the agency’s review of the same subject matter under Section 106 is incomplete. In particular, the FEIS excludes potential impacts on historic structures, archaeological resources, and cultural resources located downrange from the site and within the projected debris field for rocket failures.

The FEIS omits a large amount of correspondence submitted by consulting parties in the Section 106 process raising concerns about the sufficiency of the FAA’s historic preservation review. This includes correspondence from the Advisory Council on Historic Preservation, the National Park Service, the Little Cumberland Island Homes Association, the National Trust for Historic Preservation, and the Gullah-Geechee-Sea Island Coalition. These parties have disputed much of the FAA’s historic preservation review including: the Area of Potential Effects; the consideration of operational effects such as rocket debris; the consideration of indirect effects like wildfire; the consideration of cumulative effects; the failure to justify conclusions with necessary information; and mitigation measures that could protect historic properties. *See, e.g.*, May 18, 2021 Letter from Little Cumberland Island Homes Association to D. Murray (FAA) re Section 106 Review for Proposed Spaceport in Camden County, Ga.; June 10, 2021 Email from J. Loichinger (ACHP) to S. Zee, K. Andrus, and D. Murray (FAA) re Spaceport Camden Section 106 Consultation Meeting – 6/10 Cancellation. The FEIS’s failure to attach this correspondence or address the concerns they raise gives a misleading view of the status of the Section 106

review, and improperly suggests that the FAA’s consideration of these same issues under NEPA is sufficient.

The FAA’s willingness to ignore the opinions and recommendations of the Advisory Council on Historic Preservation—the federal agency with expertise in this subject matter—is particularly troubling. The National Historic Preservation Act directs that federal agencies “shall take into account the effect of the undertaking on any historic property ... [and] shall afford the [Advisory] Council a reasonable opportunity to comment.” 54 U.S.C. § 306108. Further, federal agencies should “comply to the fullest extent possible with, *and in the spirit of*, the Section 106 consultation process.” *Id.* (emphasis added). Likewise, consulting parties should be involved “early in the NEPA process, when the purpose of and need for the proposed action as well as the widest possible range of alternatives are under consideration.” 36 C.F.R. § 800.8(a)(2).

The FEIS does not address the potential impacts of debris from a failed launch to damage historic structures on Cumberland and Little Cumberland Islands. This omission is significant, as Spaceport Camden’s own modeling shows that debris could land over much of the islands, including near historic features. *See supra*. But in the Section 106 consultation, the FAA relies on the human casualty analysis found in the LSOL application as a proxy for the risk of debris striking historic resources. Unfortunately, this human casualty analysis is premised on the likelihood of striking a three-square-foot area under the flight path. Based on the number of three-square-foot areas assumed to be occupied by people, the FAA concludes that the launch described in the LSOL application meets its safety standards.

Three square feet may be a reasonable assumption for the size of a person, but not a historic structure. The table below contains the actual dimensions of historic features on Cumberland and Little Cumberland Island, and converts those areas into the number of people that would need to be assumed for modeling purposes.

Size	Feature	Square Feet	Equivalent Population 3 square ft = 1 person
700 acres	Half Moon Historic District	30,490,000	10,163,333
510 x 57 meters	Abraham Point Archaeological Site	312,906	104,302
281 x 57 meters	Terrapin Point Archaeological Site	17,179	5,726
914 x 38 meters	Hush Your Mouth Archaeological site	373,852	124,617
5 acres	Size of Half Moon Bluff Development Tract in NRHP Nomination Form	217,800	72,600

These numbers far exceed the number of people assumed to be on the islands for purposes of the FAA’s LSOL safety standards. The bottom line is that a building is a much larger target than a person, and therefore has a higher likelihood of being struck by debris. In both the

FEIS and the Section 106 review, the FAA has not adjusted their analysis to acknowledge this fact.

The incomplete nature of the Section 106 review also means that any changes made in that process will not be reflected in the FEIS or disclosed to the public until the release of the Record of Decision. The most obvious example of this shortcoming is the Section 106 programmatic agreement. The FEIS relies on this document as part of its historic preservation review, despite the fact that the version of the document attached to the FEIS is a draft and has not been executed by the consulting parties. In fact, after the release of the FEIS, virtually all consulting parties submitted comments critical of this document. In the likely event that changes are made to this draft document, those changes will not be disclosed to the public until the Record of Decision.

- i. The FEIS fails to consider connected and related actions that the FAA assumes other federal agencies will implement as part of Spaceport Camden

CEQ regulations require an EIS to include “the range of actions, alternatives, and impacts to be considered,” including “connected actions.” 40 C.F.R. § 1508.25. Connected actions are those that: (1) “cannot or will not proceed unless other actions are taken previously or simultaneously;” or (2) “are interdependent parts of a larger action and depend on the larger action for their justification.” *Id.* at § 1508.25(a)(1).

Here, the FEIS assumes that other federal agencies will undertake a number of subsequent actions to implement the assumptions made in Spaceport Camden’s LSOL application. These predicate actions—like monitoring visitors on Cumberland Island Seashore by the National Park Service or the U.S. Coast Guard excluding the public from area waterways—are critical to the FAA’s safety review of this project. But these predicate actions have not been adequately defined and are not examined as part of the FEIS. These actions likely require their own NEPA analysis and in some cases may not be possible or legal. NEPA requires all of these interrelated agency actions to be consolidated into one comprehensive NEPA review, but that was not conducted here.

One example illustrating this disconnect is the potential management of wildfires on Cumberland Island. As discussed above, the FAA has not yet identified what measures it will require to minimize and mitigate the threat of wildfires from failed launches. But, according to the FEIS, these future plans include “a prescribed fire program in the Wildland Fire Management and Burn Plan that details the frequency, timing, and location of prescribed burns to reduce potential wildfires.” FEIS at 6-3. But Cumberland Island already has a Fire Management Plan, and the National Park Service conducted a NEPA review to adopt that plan in 2015.¹¹ The FEIS references that these plans would need to be reconciled, FEIS at 5-3, but does not address the fact that the FAA’s decision will trigger a cascade of other NEPA reviews to implement its decision.

¹¹ *Cumberland Island National Seashore Fire Management Plan*, National Park Service (Jan. 2015) <https://www.nps.gov/cuis/learn/management/upload/FMP-2015-signature.pdf>.

Implementing the Coast Guard LAA will likewise require additional steps. The FEIS describes the Coast Guard LAA as a determination regarding the feasibility of future possible actions, and will require additional actions from the Coast Guard to implement. FEIS at 1-8. These additional actions include defining the meaning of “authorized persons,” and actually authorizing specific closures.

The Coast Guard LAA also illustrates another problems with the FAA approach, because other agencies may be unable or unwilling to implement the actions assumed in the FEIS. The Coast Guard LAA extends across the width of Cumberland Island National Seashore and Wilderness Area, and the Coast Guard itself lacks authority to manage the public in these upland areas. It is likely that the National Park Service may be unwilling to restrict park visitors in this fashion, or that they are legally able to do so under the Wilderness Act. The National Park Service repeatedly requested more specific information regarding these assumed actions but the FAA has failed to provide this information time and again. These omissions not only undermine the integrity of the NEPA review, but of the FAA’s license itself.

- j. The FEIS does not consider how Spaceport Camden will impact existing hazardous waste issues at the proposed site.

The FEIS fails to take a hard look at numerous issues concerning hazardous waste on and surrounding the site. This issue is particularly important because Camden County seeks to operate an inherently dangerous facility on property that already has contaminated soils and groundwater as well as unexploded munitions, and remedial actions are both ongoing and planned for existing contaminated areas.

Critically missing is any discussion of whether the release of hazardous materials from spaceport activities could make existing contaminated areas worse. The FEIS identifies areas on both the Union Carbide and Bayer CropScience properties that are contaminated, yet the document does not evaluate how the potential release of additional hazardous materials—whether through a launch failure, spill, or other event—would affect those contaminated areas.

As the attached study from the Wallops Spaceport illustrates, one of the concerns in the event of a rocket failure is the potential to pollute the groundwater on the site. The Union Carbide site is already subject to an environmental cleanup covenant, and the FEIS does not evaluate whether these existing obligations would impact the ability to clean up groundwater on the site after a spill or failed launch. This issue is further complicated by the fact that the launch site is adjacent to “Areas with UXO/Contamination Concerns.” The acronym “UXO” presumably indicates unexploded ordinance from the site’s prior use for munitions manufacturing.



In addition, the FEIS does not address existing contamination on the Bayer property. In August 2016, FAA officials learned that Bayer was “not forthcoming” with how much contamination is on the site and had ordered Camden officials to “immediately destroy any written notes” about onsite contamination. Today, the FEIS lists ten sites on the Bayer property that are likely contaminated with benzene, toluene, pesticides, munitions waste, acids, and other pollutants, but the analysis ends there. Despite the fact that those contaminated sites are located a stone’s throw from the proposed launch pad and located within the improvement area for the site, the FEIS fails to evaluate how spaceport construction or operation could impact the contaminated areas on Bayer’s property.

The FEIS also fails to analyze whether all contaminated areas can be successfully remediated before spaceport construction and operation to prevent additional releases of hazardous materials from making existing conditions worse. Nor does the FEIS evaluate whether

the release of hazardous materials from spaceport construction or operation may interfere with or prevent ongoing or planned remediation of contaminated parts of the proposed site. Instead, the FEIS punts to future plans and procedures that must be followed in the event of hazardous waste releases.

Notably, the FEIS omits any consideration of the actual environmental consequences from the release of hazardous materials. At most, the document states that possible outcomes include fires, explosions, or releases of propellants and notes that debris would be expected to be cleaned up in accordance with environmental regulations and emergency response plans. FEIS at 4-48 to 4-49. Moreover, the FEIS states that “[a] Spill Prevention Plan and Hazardous Waste Management Plan would be developed prior to construction and operation, *but are not required elements of the EIS.*” FEIS at A-1800 (emphasis added). But the FEIS does not discuss the short-term or long-term effects of hazardous releases into the surrounding environment, and this flaw is fatal to the NEPA analysis.

k. The FEIS does not address the special protections afforded to designated wilderness areas and the legality of the proposed actions under that statute

The FEIS also reflects a misunderstanding regarding the legal protections afforded to wilderness areas. The FEIS assumes that a variety of activities will be conducted in and over the Cumberland Island Wilderness Area, including the operation of visitor checkpoints, monitoring visitor locations by truck, and use of aircraft (including drones) to monitor visitor locations. FEIS at 2-29 to 2-31. But the FEIS fails to address whether any of these activities are actually legal under the Wilderness Act. They are not.

The Wilderness Act prohibits any activities that disrupt the wilderness character of the area, including unfettered access to those areas. 16 U.S.C. § 1133(b). Commercial activities and motor vehicles are prohibited within wilderness areas, and the use of aircraft is prohibited unless already established. 16 U.S.C. §§ 133(c), (d)(1). Simply put, the FEIS assumes that Spaceport Camden will engage in activities within the Cumberland Island Wilderness Area that are legally prohibited under the Wilderness Act and cannot be authorized by the National Park Service.

VII. The FEIS Fails To Consider Potential Mitigation Or Mitigation Representations Made In Other Contexts

The FEIS fails to include all appropriate mitigation measures as required by NEPA, 14 C.F.R. §§ 1502.14(f), 1502.16(h) (1978), and instead impermissibly relies on future “plans” to identify appropriate mitigation. For instance, rather than identifying means to mitigate the proposed spaceport’s environmental impacts on biological species, the FEIS relies on a Protected Species and Habitat Management Plan, Wildlife Lighting Management Plan, and Wildland Fire Management and Burn Plan. None of these documents have been prepared yet, and all purportedly will contain mitigation measures that NEPA requires to be included in the FEIS itself. FEIS at 6-2; *see also Id.* at 6-5 (relying on planned Hazardous Materials Emergency Response Plan), 6-8 (planned Visual Resources Management Plan).

The FEIS also impermissibly defers to ongoing agency consultation to identify mitigation measures and states that any mitigation measures identified through such consultation will be included either in the FEIS (despite having been issued already) or in the Record of Decision (foreclosing the opportunity for public comment). *See, e.g.*, FEIS at 6-2 (“The Final EIS will include any additional measures included in the consultation with NMFS once completed.”); *id.* at 6-6 (“Any additional mitigation measures for any potential adverse effect to cultural resources identified through [Section 106] agency consultation will be included in the Record of Decision.”).

When the FEIS includes mitigation measures, they are often so vague as to be meaningless. For example, in the discussion of mitigation measures for climate impacts, the FEIS states that “changes to more fuel-efficient equipment, delay reductions, use of renewable fuels, and operational changes could serve to minimize GHG emissions,” but the document fails to explain or identify the equipment that could be changed to be more fuel efficient, what types of renewable fuels could be used and for what application, or what operational changes could be made. FEIS at 6-4.

Finally, the FEIS fails to include mitigation measures that Spaceport Camden has adopted or purports to adopt in order to obtain other agency approvals or certifications. For example, in a May 2021 concurrence letter, the U.S. Navy requires the FAA and Camden County to “incorporate and/or maintain the processes, mitigation measures and supporting documents” referenced in that letter. Yet those measures are not identified in FEIS and the correspondence itself is not attached to the FEIS. May 11, 2021 Correspondence from J. Hill to W. Monteith. Similarly, GA DNR issued conditions to its coastal consistency concurrence shortly after the FEIS was released, including several mitigation measures not included in the FEIS. *See*, GA DNR, Spaceport Camden Consistency Certification, at 9-11 (July 8, 2021).¹² Strangely, the FEIS states the exact opposite: “Any additional mitigation measures resulting from GA DNR coastal consistency review will be included in the Final EIS.” FEIS at 6-4.

In addition, there are discrepancies between some of the proposed mitigation measures in the GA DNR coastal consistency certification and statements in the FEIS. For instance, the GA DNR coastal consistency certification requires plans for hazardous waste management and spill prevention, control, and countermeasure to minimize the accidental release of pollutants that could enter stormwater runoff. GA DNR, Spaceport Camden Consistency Certification at 11. But the FEIS specifically states that the hazardous waste management and spill prevention plans “are not required elements of the EIS.” FEIS at A-1800.

¹² Mitigation measures included in GA DNR’s coastal consistency concurrence but not included in the FEIS include: requiring launch site operators to carry insurance to cover environmental clean-up costs within marshlands and waterbodies out to 3 nautical miles, in the event of a catastrophic failure; protocols developed by Spaceport Camden to monitor potential impacts from launches during bird nesting season; and mandatory plans on hazardous waste management and spill prevention, control, and countermeasure. *See* GA DNR, Spaceport Camden Consistency Certification at 9-11.

In addition, discrepancies exist between proposed mitigation measures and FEIS' statements about financial liability for environmental clean-up costs. The GA DNR coastal consistency certification requires launch operators to obtain insurance for environmental clean-up costs, but limited to costs incurred "in the event of a catastrophic failure." GA DNR, Spaceport Camden Consistency Certification at 9. The FEIS, in contrast, does not require insurance of launch operators but requires that "*any* launch vehicle debris landing in tidally-influenced marsh or State waters, out to 3 miles, must be recovered when feasible." FEIS at 4-30 (emphasis added).

The FAA's failure to engage with the public also means that the agency has failed to involve the public in developing appropriate mitigation measures. *See, e.g.*, May 4, 2021 Email from K. Moore (GA DNR) to E. Mize (Kimley Horn) (Discussing need to "start developing specific conditions/alternative measures that can be incorporated into the LSOL application (rather than the FEIS)"). The lack of public engagement in developing mitigation measures is contrary to the FAA's own guidance. *FAA Order 1050.1F Desk Reference* (Feb. 2020) at 12-13 ("In addition to including public outreach efforts as part of the NEPA process, it may also be beneficial to include the public in identifying possible mitigation measures.").

VIII. The FAA Failed To Discharge Its Obligations Under Other Statutes

In addition to NEPA, the FEIS purports to fulfill the agency's obligations under other statutes. Yet the FEIS is equally deficient under these statutes as well.

a. Section 4(f)

With respect to Section 4(f) of the Department of Transportation Act, the FEIS concludes that there will be no constructive use of Section 4(f) properties including Cumberland Island National Seashore, despite repeated objections from the Department of the Interior that the FAA's conclusion is "not substantiated." *See, e.g.*, Dec. 10, 2020 Letter from S. Austin (DOI) to D. Murray (FAA), at 2; June 12, 2018 Letter from J. Stanley (DOI) to S. Zee (FAA), ER 18/0130, at 1-2, *citing* 23 C.F.R. § 774.15(e)(3). Instead, the FEIS's Section 4(f) conclusion relies solely on the facts that the proposed overflight exclusion zone does not extend to Cumberland Island and the public will not be *completely* excluded from the park. FEIS at 4-34.

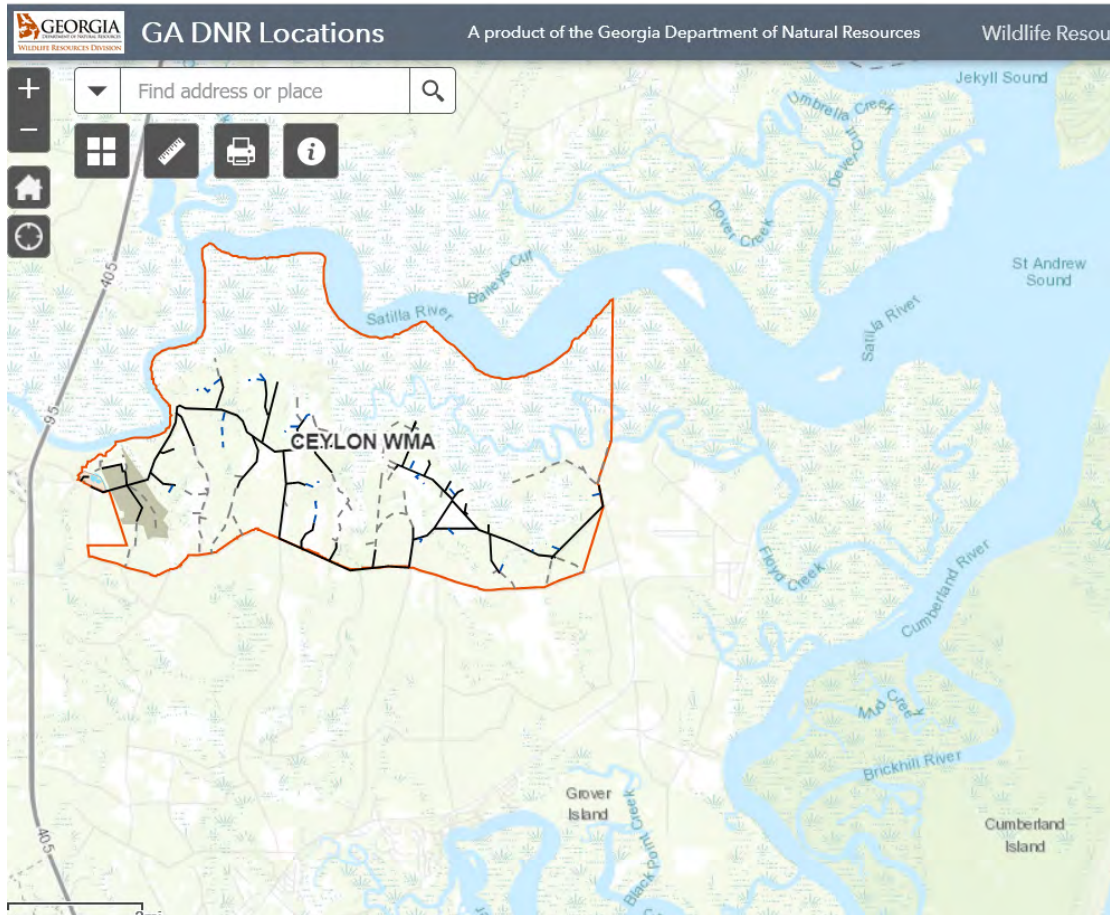
With respect to the Coast Guard LAA, the FEIS states that "Camden County proposes to monitor and control public access in accordance with the Comprehensive Launch Plan." FEIS at 2-26. In some areas outside the Coast Guard's jurisdiction, this could include "coordinat[ing] with the Camden County sheriff's office to remove the individual" such as "a wading fisherman or swimmer." FEIS at 2-34. *See also* Mar. 18, 2021 Email from K. Perez (FAA) re FAA Discussion with USCG and GA DNR *and* Mar. 8, 2021 Meeting Minutes.

But when discussing this same issue in the Section 4(f) context, the FEIS states the exact opposite with respect to controlling public access: the Coast Guard LAA would not impose any access limitations on Section 4(f) properties. FEIS Exec. Summ. at 13 & 4-34. This inconsistent explanation of the Coast Guard LAA is not surprising; the FEIS does not discuss how the Coast Guard LAA would work in the upland portions of Cumberland Island, what legal basis the Coast

Guard or Camden County has to implement it, or what actions would be required of the National Park Service to implement it. With such important questions unresolved, the Department of the Interior has disagreed with the FAA's Section 4(f) conclusion. The FEIS also fails to consider how the Coast Guard LAA will restrict access to the island through personal watercraft not utilizing the Sea Camp and Dungeoness Docks.

Beyond access restrictions, the Section 4(f) analysis is also deficient because it fails to consider the other ways Spaceport Camden will substantially diminish the use of Section 4(f) properties. The Section 4(f) constructive use analysis turns on the nature of the property itself and expectations for how it will be used. Given the heightened protections for federally designated wilderness areas, the monitoring and access limitations discussed in the FEIS will substantially diminish the use of these areas even if access is not completely prohibited. Further, other impacts resulting from a failed launch could trigger Section 4(f) impacts including: risk of wildfire damaging the areas; injury to visitors during their visit; risk of damage from debris to the park; risk of damage from debris to historic properties; and decreased willingness to utilize the park during launch events. None of these other potential impacts are considered in the FEIS.

The FEIS has also erred by not considering new Section 4(f) areas that were created during the duration of this project. Since the release of the DEIS, two new state wildlife management areas have been created that are immediately adjacent to the project site. Prior correspondence to the FAA raised this exact issue, but the FAA has not updated its evaluation of Section 4(f) properties. FEIS at 3-37. These areas, which are used for public hunting, fishing and recreation, would be impacted by the light, vibration, noise, access restrictions, wildfires, or other impacts of Spaceport Camden. Yet the FAA failed to consider these potential impacts in any fashion. FEIS at 3-38 and 3-39.



Finally, the FAA has erred by reaching its Section 4(f) determination prior to completing its review under Section 106 of the National Historic Preservation Act. Courts have made clear that an agency must complete its Section 106 review prior to reaching a determination under Section 4(f). *Corridor H Alternatives, Inc. v. Slater*, 166 F.3d 368, 370–71 (D.C. Cir. 1999). But here, the FEIS states that there will be no impacts to Section 4(f) historic properties based on a future programmatic agreement that has not yet been drafted or executed. FEIS 4-35. In fact, the FEIS was released before the consulting parties even had the opportunity to comment on the draft programmatic agreement attached to the FEIS. Since that time, a number of consulting parties have raised serious concerns about the adequacy of that document and the FAA’s Section 106 review more broadly. These concerns include the potential impacts to properties on Cumberland Island that are listed on the National Register of Historic Places and are protected under Section 4(f). The fact that the FAA has already reached its Section 4(f) conclusion despite the ongoing and incomplete historic preservation review demonstrates that the FAA has predetermined its conclusions and is reverse-engineering its analysis to support them.

b. Section 106

The shortcomings in the FAA’s Section 106 review have already been discussed previously. The Section 106 review is ongoing and a number of consulting parties, including the Advisory Council on Historic Preservation and the National Park Service, have raised questions

about the sufficiency of the FAA’s review. The FEIS does not address these critical questions, and in many cases has not included the related correspondence. All correspondence from Section 106 consulting parties, including correspondence critical of the FAA’s review and correspondence submitted via email, should be included in the administrative record.

Beyond the substance of the FAA’s Section 106 review, consulting parties have also challenged the sufficiency of the information provided by the FAA to justify its decision and the amount of public engagement conducted. Although Section 106 imposes a separate public engagement requirement, the FAA has not engaged with the public under Section 106 since the DEIS. As a result, the information regarding the project’s potential impacts to historic properties related to the LSOL application and the small rocket project revision have never been disclosed to the public. In fact, the Section 106 programmatic agreement attached to the FEIS is a draft version, so it is unknown when or how the final version will be provided to the public.

c. Coastal consistency

The FAA’s consultation under the Coastal Zone Management Act (“CZMA”) is also inappropriate. The FAA is purportedly engaging in a “phased” coastal consistency review of Spaceport Camden. Although the FEIS does not identify the basis for this approach, GA DNR previously cited the regulation for supplemental coordination as the legal basis for this approach. *See* Ga. Dept. of Nat. Res, 2018 Comments on DEIS (citing 15 C.F.R. § 930.66). But none of the conditions described in Section 930.66(a) apply here - the future FAA decisions are only unavailable now because the FAA has artificially segmented the scope of Spaceport Camden to facilitate the current review. Further, this segmented approach is also discouraged under CZMA regulations. 15 C.F.R. § 930.59.

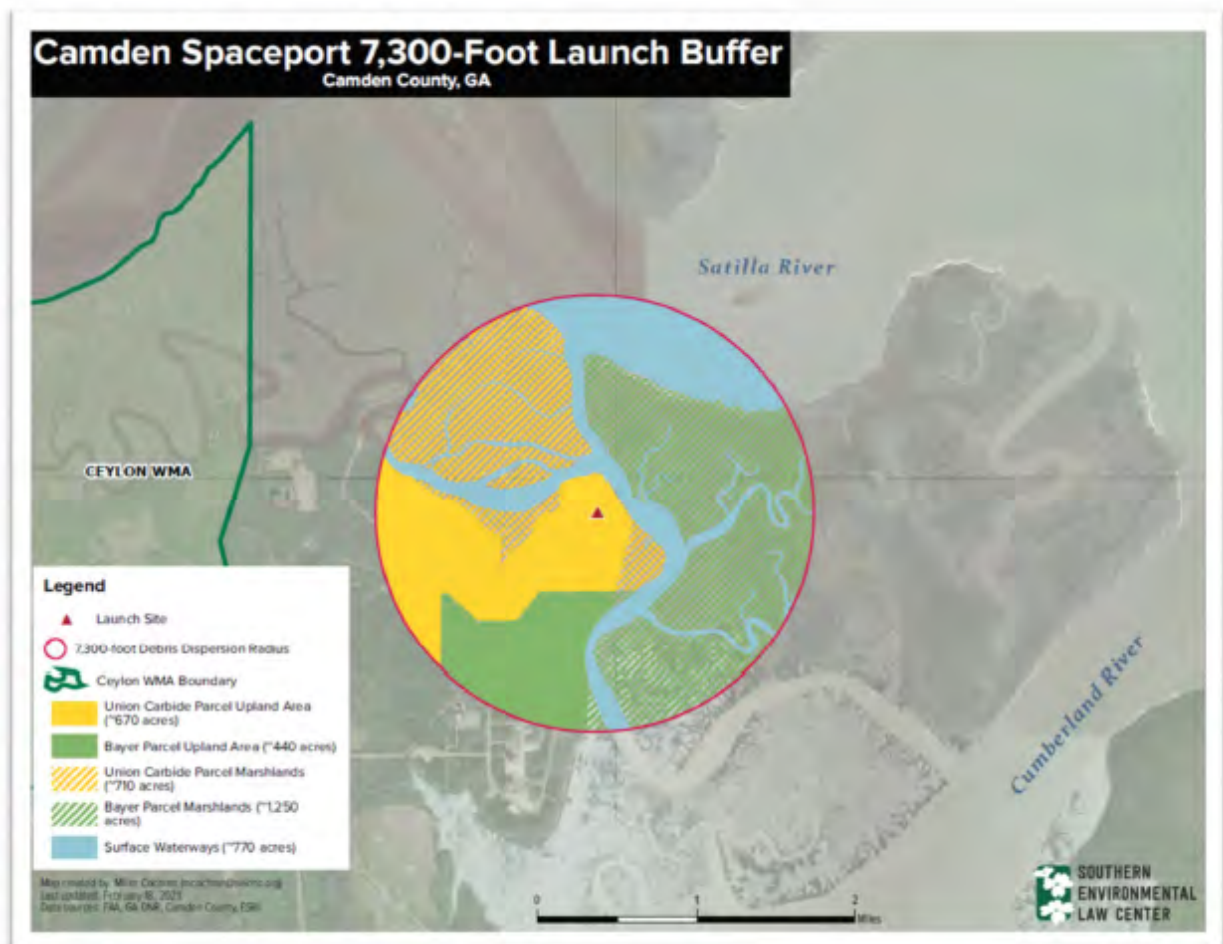
Subsequent to the release of the FEIS, GA DNR issued a conditional CZMA concurrence for the project. This conditional concurrence imposed a number of additional mitigation measures, and the FAA’s review must be modified to reflect these conditions. 15 C.F.R. § 930.4(a)(2). But because the FEIS was released before GA DNR imposed its conditions, these requirements are not included in the FEIS.

Finally, as discussed above, in the absence of necessary information from the FAA, the GA DNR has been forced to rely on unverified information from the applicant in reaching its conditional concurrence. Specifically, GA DNR relied on statements from the project applicant regarding the anticipated failure rate that are inconsistent with available data and the FEIS’ treatment of the failure rate issue. The fact that GA DNR relied on different information regarding this critical issue underscores the problems with the FAA’s piecemeal approach and its silence on critical issues. *See, e.g.*, Mar. 1, 2021 Email from K. Moore (GA DNR) to S. Zee and S. Howard (FAA) re Spaceport Camden: Small Vehicle Launch Failure Rates Versus Medium to Large Vehicle Launch Failure Rates.

d. FAA regulations

FAA regulations direct that the “distance from any proposed launch point to the closest launch site boundary must be at least as great as the debris dispersion radius of the largest launch

vehicle type and weight class proposed for the launch point.” 14 C.F.R. § 420.21(a). As the name suggests, the “debris dispersion radius” is intended to contain the debris and other damage when a rocket fails. 14 C.F.R. § 420.5. Under Georgia law, waterbottoms are owned by the state and marshlands are owned by the state unless the owner can affirmatively demonstrate a valid state or crown grant. *Dorroh v. McCarthy*, 265 Ga. 750, 751 (1995). As illustrated in the image below, the 7,300-foot radius required for small rocket launch sites under 14 C.F.R. § 420.21 plainly extends into state-owned marshlands and waterways.



In fact, approximately 71% of the 7,300 ft radius is state-owned property.

Property Type	Approximate Acres	Percentage of Debris Dispersion Radius
Union Carbide Upland	670	17%
Union Carbide Marsh	710	18%
Bayer Upland	440	11%
Bayer Marsh	1,250	33%
Surface Waterways	770	20%
Total Debris Dispersion Radius	3,840	
State-Owned Acres (Marsh and Surface Waters)	2,660	71%

The FEIS apparently re-interprets this regulation to accommodate Spaceport Camden by only requiring that the public be excluded from the 7,300-foot radius, which Spaceport Camden represents that it can accomplish through the Coast Guard LAA. However, the regulation is based on the “launch site boundary,” not public access. Interpreting the Coast Guard LAA to satisfy this regulation would mean that the “launch site boundary” extends approximately 17 miles into the Atlantic Ocean.

IX. The FAA Has Failed To Properly Consult With Cooperating Federal Agencies

As the lead agency, the FAA is required to consider “the environmental analysis and proposals of cooperating agencies with jurisdiction by law or special expertise, to the maximum extent possible consistent with its responsibility as lead agency.” 40 C.F.R. § 1501.6(a)(2) (1978). The FAA has failed to consider the expertise and legal authority of cooperating agencies in a variety of respects, including not providing cooperating agencies with an accurate assessment of the project’s potential risks, not supplying requested information, and dismissing valid concerns raised by cooperating agencies in their areas of expertise and legal jurisdiction.

For example, the FAA has not included concerns expressed by the Advisory Council on Historic Preservation regarding the project’s potential impacts on historic properties and does not address the Department of the Interior’s stated concerns regarding the potential impacts on Cumberland Island National Seashore.

Further, by withholding important information from cooperating agencies, the FAA has prevented them from properly evaluating the project. *See, e.g.*, Dec. 10, 2020 Letter from S. Austin (DOI) to D. Murray (FAA), at 2 (“It should be officially noted that NPS, as a formal cooperating agency ... was not provided a copy of the referenced Comprehensive Launch Plan and accompanying Safety Report for our review despite several requests. This severely limits our ability to conduct a thorough analysis of the proposed action and potential for adverse impacts...”).

This problem is particularly relevant to the impacts of launch failures and the FAA’s consultation with the Fish and Wildlife Service under the Endangered Species Act. The FAA did not advise the FWS that launch failures could trigger uncontrollable wildfires on Cumberland

Island. It did not inform the FWS that debris from failed launches could land on the island and require cleanup in sensitive areas. And it did not advise the FWS that the change to small rockets increased the likelihood of a failed launch. Without the benefit of this information, the FWS has not addressed issues related to the potential habitat loss due to wildlife or falling rocket debris and resulting cleanup. In particular, the potential for debris and cleanup activities (including beach driving) to impact critical habitat for Piping Plover should have been addressed. But because FWS was not provided with adequate information, it was prevented from properly consulting as required under the Endangered Species Act.

X. The FAA Has Failed To Engage With the Public

A central purpose of NEPA is to make information regarding significant government actions available to the public. *Baltimore Gas & Elec. Co. v. NRDC*, 462 U.S. 87, 97 (1983). “The very purpose of public issuance of an environmental impact statement is to provide a springboard for public comment.” *N.C. Wildlife Fed’n v. N.C. Dep’t of Transp.*, 677 F.3d 596, 603 (4th Cir. 2012) (internal quotations omitted). NEPA requires federal agencies to encourage and facilitate public involvement “to the fullest extent possible.” 40 C.F.R. § 1500.2(d). The FAA’s own guidance reaffirms the importance of agency transparency and public engagement.

Transparency means that the planning process is as open as possible and that decisions are made public. The community should have an opportunity to contribute to the process and be informed about how their input was considered. Decisions should be announced and the rationale for the decisions clearly stated.

FAA Community Involvement Manual at Section 2.2.7 (Feb. 2016).

The FAA has failed comprehensively in this regard. The FAA released a DEIS that failed to contain critical information related to launch safety and relied on a fictitious term – authorized personnel – that it internally disavowed. It never conducted public engagement around the launch site license. It decided not to release a supplemental draft EIS and declined to hold a public meeting regarding the changes to the project. Now it has released an FEIS that excludes important information, obscures inconvenient facts, and lacks supporting analysis. And throughout this process, the FAA has allowed the project applicant to fill the void left by its inaction with misinformation.

The FAA’s disregard for public engagement is not limited to NEPA; the agency has similarly failed to engage with the public as required under Section 106, Section 4(f), and the Coastal Zone Management Act. Perhaps no fact better illustrates the FAA’s failure to engage with the public than attaching the draft Section 106 programmatic agreement to the FEIS, with no apparent intent to release the final programmatic agreement for public review until the Record of Decision is released.

CONCLUSION

For the foregoing reasons, the FAA should reconsider its approach to the environmental review of Spaceport Camden. The only way to rectify the numerous legal errors in the FAA's current approach is to rescind the FEIS, release a supplemental draft EIS for public notice and comment, and prepare a new FEIS that addresses all of the deficiencies identified here. Continuing with its current course and issuing a Record of Decision will subject the FAA to numerous clear legal vulnerabilities and undermine the FAA's integrity.

I remain willing to discuss this matter further or address any questions the FAA may have. You can reach me at bgist@selcga.org or (404) 521-9900.

Sincerely,

A handwritten signature in black ink, appearing to read "Brian Gist", written in a cursive style.

Brian Gist

cc: Mr. Dan Murray (FAA)
Ms. Stacy Zee (FAA)
Department of the Interior
National Park Service
Advisory Council on Historic Preservation

Enclosures

INDEX OF ATTACHMENTS

Documents Attached to July 23, 2021 Letter from SELC to FAA

The following documents can be accessed through the following document transfer link and should be considered as attachments to this letter.

<https://southernenvironment.sharefile.com/d-s10524b4ab3614f339a2fc6d54c1020b0>

1. 1506 Option Agreement
2. 1984.01.13 - DOI Cumberland NRHP Nomination Form
3. 2011.01.27 - Environmental Covenant – EPD and Union Carbide
4. 2013.10 - Wildfire Risk Assessment Framework for Land and Resource Management
5. 2015.09.09 - Va Space – Antares Rocket – Site Characterization Report
6. 2015.10.30 - Email from S. Zee to D. Murray and H. Searight
7. 2016 - HPD documents about Bayer Contamination
8. 2016.05.09 - Draft Site Selection Criteria
9. 2016.05.11 - Data Request - FAA Comments on Draft DOPAA
10. 2016.05.25 - Email from S. Zee to P. Underwood and M. Coffman
11. 2016.06.02 – Email from C. Groome to S. Zee et al.
12. 2016.06.06 - Draft Purpose and Need Statement
13. 2016.06.07 - Email from P. Underwood to S. Zee
14. 2016.06.08 - Email from C. Botts to E. Long (USAF)
15. 2016.06.08 - Email from S. Zee to S. Howard re Camden – Issues from the Project
16. 2016.06.14 - Draft Purpose and Need Statement
17. 2016.06.14 - Alternative Sites Considered
18. 2016.06.14 - Draft Site Selection Criteria
19. 2016.07.15 - Nelson_Spaceport Camden Site Analysis_Saint Marys Mill Site
20. 2016.07.15 - Nelson_Spaceport Camden Site Analysis_Cumberland Island
21. 2016.07.15 - Nelson_Spaceport Camden Site Analysis_Little Cumberland Island
22. 2016.07.15 - Nelson_Spaceport Camden Site Analysis_Saint Marys Mill Site_rev 1
23. 2016.07.15 - Nelson_Spaceport Camden Site Analysis_West Ceylon-Site
24. 2016.07.19 - Nelson_Spaceport Camden Site Analysis_UCC-BCS-Site
25. 2016.09.08 - Nelson_Spaceport Camden Site Analysis_Little Cumberland Island
26. 2016.09.08 - Nelson_Spaceport Camden Site Analysis_Cumberland Island
27. 2016.09.08 - Nelson_Spaceport Camden Site Analysis_Launch Pad Complex
28. 2016.09.08 - Nelson_Spaceport Camden Site Analysis_UCC-BCS-Site
29. 2016.09.19 - Site Selection Methodology
30. 2016.09.20 - Email from S. Zee (FAA) to P. Schanel (ICFI)
31. 2016.09.21 - Email from S. Zee (FAA) to P. Schanel (ICFI)
32. 2016.09.21 - FAA Memo re 131 Degree Trajectory
33. 2016.09.21 - FAA-Nelson Correspondence re Multiple Trajectories
34. 2016.09.21 - Site Selection Methodology Comments
35. 2016.10.04 - Spaceport Camden Team Meeting
36. 2016.11.11 - FAA-Nelson Correspondence re Alternate Sites

37. 2016.11.11 - Spaceport Camden Response to FAA EIS Data Request
38. 2016.12.02 - Email from S. Zee re Camden Responses to Alternatives
39. 2016.12.08 - Spaceport Camden Response to FAA EIS Data Request
40. 2017 - Rossiter - Shrimps in Space: Charting Contentious Spatialities Between Commercial Shrimping and Spaceport Industries
41. 2017.01 - NOAA - Global and Regional Sea Level Rise Scenarios for the United States
42. 2017.03.20 - NPS Letter to FAA re Comments on DOPAA & Noise Study
43. 2017.04.04 - Email from A. Nelson to K. Akstulewicz re Authorized Persons
44. 2017.07.13 - FAA Correspondence re LCI Overflight
45. 2017.08.10 - Email from D. Murray to K. Branham et al. re Camden Agenda
46. 2017.08.11 - FAA Correspondence re Risk Analysis
47. 2017.08.28 - Email from K. Branham re Part 420 Requirements
48. 2017.10.18 - FAA Correspondence re Hot Button Project
49. 2017.12.11 - Email from P. Underwood to K. Branham and S. Zee
50. 2018 - Compendium of Commercial Space Transportation
51. 2018 - NPS - Sea Level Rise and Storm Surge Projections
52. 2018.02.05 - Email from S. Zee to K. Akstulewicz re NPS Comments
53. 2018.04.02 - FAA Correspondence re Authorized Personnel & Public Safety
54. 2018.04.05 - Email from D. Murray to K. Branham
55. 2018.05.23 - FAA Correspondence re Questions for May 29 Meeting
56. 2018.06.12 - CRD Spaceport DEIS Comments
57. 2018.06.12 - Letter from J. Stanley (DOI) to S. Zee (FAA)
58. 2018.06.14 - GA DNR WRD Comments on DEIS
59. 2018.10.12 - Email from T. Braun to S. Jackson re Camden LCI Pop Number
60. 2018.10.31 - Email from T. Braun to D. Murray, RE Camden Ec Study for Pops on Cumberland Island
61. 2018.11.01 - Email from D. Murray to D. Reimold
62. 2018.12.10 - Email from K. Akstulewicz to S. Zee re Number of Houses on LCI
63. 2018.12.10 - Spaceport Camden Population Overflight White Paper_Redacted
64. 2018.12.12 - FAA Correspondence re Camden Issues
65. 2019.01.29 - FAA Correspondence re Camden Application for Your Review
66. 2019.01.29 - SCC_DEIS DRAFT Comment Responses_MASTER
67. 2019.02.12 - Draft Letter from K. Wong to J. Starline
68. 2019.02.15 - Memorandum from W. Monteith (FAA) to D. Elwell (FAA)
69. 2019.03 - NASA Small-Satellite Mission Failure Rates
70. 2019.03.18 - Email from E. Afifi to A. Nelson re Camden Outstanding Issues
71. 2019.04.10 - Email from R. Maday re Camden Outstanding Issues
72. 2019.05.29 - Email from D. Murray re Camden Application Feedback Finalized
73. 2019.06.28 - Email from K. Wong re Camden Spaceport Complete Enough Letter
74. 2019.07.08 - FAA response to 2019.01.31 FOIA - Cover Letter
75. 2019.09.06 - Letter from LCI Ass'n to FAA re Proposed Spaceport in Camden County
76. 2019.10.03 - Aerospace Flight Safety Analysis for Spaceport Camden
77. 2019.12.16 - Letter from K. Wong to J. Starline

78. 2020 - Small Launch Pad Capacity
79. 2020.01.03 - Letter from K Coleman to J Starline
80. 2020.05.26 - Email from S Zee re Update on Spaceport Camden EIS - Schedule
81. 2020.05.29 - Email from N. Rodgers to S. Howard
82. 2020.09.11 - Letter from W. Monteith re Spaceport Camden Final EIS
83. 2020.09.24 - DOD Memo - Response to Information Request
84. 2020.09.25 - DOD Memo - Response to Information Request - Rev 1
85. 2020.10.20 - DOD Memo - Terrestrial and Marine Deconfliction
86. 2020.10.26 - DOD Memo - SWS Questions
87. 2020.11.06 - Letter from LCI Ass'n to FAA re Notice of Disagreement
88. 2020.11.18 - Letter from Q. Quet to FAA
89. 2020.12 - GAO-21-154 - FAA Should Examine a Range of Options to Support U.S. Launch Infrastructure
90. 2020.12.09 - ACHP Spaceport Camden Response Letter
91. 2020.12.10 - Letter from S. Austin (DOI) to D. Murray (FAA)
92. 2020.12.18 - FAA Public Safety Analysis for Launch Operations
93. 2020.12.23 - Letter from J. Dixon to D. Murray - SHPO Response
94. 2021.03.01 - Email from K. Moore (GA DNR) to S. Zee and S. Howard (FAA) re Spaceport Camden: Small Vehicle Launch Failure Rates Versus Medium to Large Vehicle Launch Failure Rates
95. 2021.03.04 - Attachment 2 SCC Project Action
96. 2021.03.18 - Email from K. Perez re FAA Discussion with USCG
97. 2021.03.24 - Letter from LCI Ass'n to FAA re 106 Review
98. 2021.03.25 - Letter from LCI Ass'n to FAA re Failure Rate for Small Launch Vehicles
99. 2021.05.04 - Email from K. Moore to E. Mize
100. 2021.05.11 - Correspondence from J. Hill to W. Monteith
101. 2021.05.15 - Electron Launch Fails – SpaceNews
102. 2021.05.17 - Programmatic Agreement Comment Form_NPS Comments
103. 2021.05.18 - Letter from LCI Ass'n to FAA re 106 Review
104. 2021.06 - Final Federal Consistency Cert. for Spaceport Camden with Appendices
105. 2021.06 - Letter from G. Ingram (CUIS) to FAA re Programmatic Agreement
106. 2021.06.10 - Email from J. Loichinger (ACHP) to FAA re Section 106 Consultation
107. 2021.06.11 - Email from FAA to SELC re FOIA Response
108. 2021.07.06 - Spaceport Camden Concerns for Review by ACHP
109. 2021.07.08 - GA DNR Coastal Consistency Certification
110. Available Launch Slots
111. Camden County Annual Financial Report and Annual Budget FY2016-2022
112. Rocketlabusa.com - Electron
113. SELC - Coast Guard Safety Zone Cargo Traffic
114. SELC - Coast Guard Safety Zone Economic
115. SELC - Coast Guard Safety Zone Recreational Fishing Traffic
116. SELC - Spaceport 7300-Foot Launch Buffer Image

Documents Attached to December 15, 2020 Letter from SELC to FAA

The following documents can be accessed through the following document transfer link and should be considered as attachments to this letter.

<https://southernenvironment.sharefile.com/d-s1943be89bb074c8298c6a840f6a61554>

1. “Congressman Buddy Carter advocated for spaceport near \$2 million property he bought” M. Landers, Savannah Morning News
2. “U.S. Rep. Buddy Carter tried to speed review of spaceport with amendment,” M. Landers, Savannah Morning News. (A copy of the amendment is available at: <https://www.scribd.com/document/470192157/Carter-Spaceport-Amendment-1>).
3. Cumberland Island landowners object to ...
4. December 16, 2019 Letter from K. Wong (FAA) to J. Starline (Camden County)
5. Feb 15, 2019 Memorandum from W. Montheith (FAA) to D. Elwell (FAA)
6. Feb 12, 2019 Letter from K. Wong (FAA) to J. Starline (Camden County)
7. June 9 2020 Email from N. Rodgers to S. Howard (Camden County)
8. Map of Ceylon Wildlife Management Area
9. May 29, 2019 Letter from K. Wong (FAA) to J. Starline (Camden County)
10. May 29, 2020 Email from N. Rodgers to S. Howard (Camden County)
11. D. Williams, “New state wildlife management area to open of Georgia coast,” Capitol Beat News Service (Oct. 27, 2020).
12. Table of Small Rocket Launch Capacity
13. United States Coast Guard, District 17 Local Notice to Mariners, Week 36_20 (Sept. 9, 2020) September 2020)

<https://content.govdelivery.com/accounts/USDHSCG/bulletins/29f937e>

Alaska – South Central – Kodiak / Gulf of Alaska

CORRECTED NOTICE (The dates and end times have changed): The Pacific Spaceport Complex Alaska (PSCA) is planning to conduct a rocket launch from launch pad LP-3B at Narrow Cape, Kodiak, Alaska from 110200-110500 UTC which is 1800-2100 Alaska Daylight Savings Time on September 10th, 2020. If the launch does not occur on September 10th then it will be rescheduled for the following day during the same time window. Rescheduling could continue each day through September 16th 2020 (September 17th for UTC). Additional information including the locations of the hazardous areas is available in an enclosure to this LNM.

Excerpt on ltr p20.

14. Exec. Order No. 13,927, 85 Fed. Reg. 35,165 (Jun 4, 2020).
<https://www.whitehouse.gov/presidential-actions/eo-accelerating-nations-economicrecovery-covid-19-emergency-expediting-infrastructure-investments-activities/>
15. August 10, 2017 Email from D. Murray (FAA) to K. Branham (FAA)

16. National Environmental Policy Act (NEPA) Implementing Instructions for Airport Actions, Federal Aviation Administration Order No. 5050.4B (April 2006).

https://www.faa.gov/airports/resources/publications/orders/environmental_5050_4/

17. Revised Launch Site Operator License Application for Spaceport Camden: Launch Site Location Review, at 16.

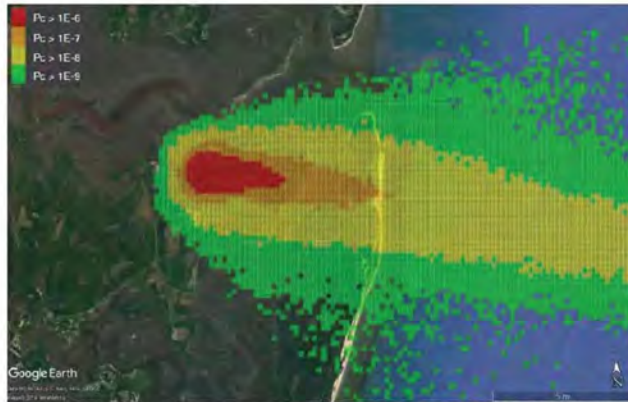
Parameter	Value	Notes
Total Probability of Failure (Pf)	20%	
First Stage Probability of Failure	10%	
Second Stage Probability of Failure	10%	

18. The data detailed in this table obtained from Space Launch Report www.spacelaunchreport.com (last visited Dec. 14, 2020) and verified at Launch Sites, Gunter's Space Page, <https://space.skyrocket.de/directories/launchsites.htm> (last visited Dec. 14, 2020).

ALL US COMMERCIAL SMALL CLASS ORBITAL ROCKETS HISTORY 2006-October 31, 2020						
	Thrust	Payload lbs	Launches	1st Stage Failures	1st Stage Failure %	Notes:
Rocket Lab Electron	37,980	660	15	1	7%	Licensed, operational
Astra Rocket 1.0-3.1	28,550	220	3	3	100%	Licensed, experimental
SpaceX Falcon 1	102,000	400	5	1	20%	Licensed, retired
Total small class launches since 2006>>			23	5	22%	

Rocket	Status	Payload (lbs)	Thrust	Liftoff Weight
RocketLab Electron	Operational	660	37,980	27,200
Vector-R	Proposed	Suborbital	18,300	13,300
Firefly Alpha	Development	2,200	150,104	118,790
ABL RS1	Development	2,640	117,000	104,788
SpaceX Falcon 1	Cancelled	1,480	102,000	61,000
Spaceport Camden	Notional	100 to 300	20,000	TBD

- 19.



20. Exhibit 28. Individual Risk Grid Image for 100-degree trajectory launch of Small Launcher *Revised LSOL Application: Launch Site Location Review* at 28.

21. April 2, 2018 Email from P. Underwood to H. Price [A copy of this email is attached to SELC's Feb. 4, 2020 letter.]

22. June 25, 2018 Letter to S. Zee (FAA) from W. Sapp (SELC) re Amended Comments on DEIS at 5.

23. June 8, 2016 Email from S. Zee (FAA) to S. Howard (Camden County) [A copy of this email is attached to SELC's Feb. 4, 2020 SELC letter.]

24. U.S. Dep't of Transp. Office of Transp. Policy, Guidance on the Use of Combined Final Environmental Impact Statements/Records of Decision and Errata Sheets in National Environmental Policy Act Reviews (April 25, 2019)

<https://www.transportation.gov/sites/dot.gov/files/docs/mission/transportationpolicy/permittingcenter/337371/feis-rod-guidance-final-04302019.pdf>



25. Exhibit 1. Spaceport Camden Population Monitoring and Management Approach A map of Camden County's proposed access restrictions from the Revised LSOL Application.

26. FAA, Environmental Assessment and Finding of No Significant Impact for Issuing Firefly Aerospace a Launch License for the Alpha Launch Vehicle at Spaceport Launch Complex 2 West, Vandenberg Air Force Base, Vandenberg California (May 2020)

https://www.faa.gov/space/environmental/nepa_docs/media/FireFly_EA_FONSI_508.pdf

27. One of the Largest Undeveloped Unprotected Sites on Southeast Atlantic Coast Acquired for Conservation, The Conservation Fund, (Dec. 6, 2019),

<https://www.conservationfund.org/impact/press-releases/2151-16-000-acres-of-atlanticcoastline-purchased-in-georgia> (last visited Dec. 14, 2020).



- 28.
29. Ceylon, Georgia Department of Natural Resource Wildlife Resources Division, <https://georgiawildlife.com/ceylon-wma> (last visited Dec. 14, 2020) (The Conservation Fund is in the process of transferring legal ownership of this property to Georgia Department of Natural Resources).
30. Board Meeting Summary -- Board of Natural Resources, Ga Dep't of Nat. Res., (Oct. 27, 2020), https://gadnr.org/sites/default/files/board20201027_Summary.pdf

Documents Attached to February 4, 2020 Letter from SELC to FAA

1. FAA, Guidelines for Compliance with [NEPA] and Related Environmental Review Statutes for the Licensing of Commercial Launches and Launch Sites at 18 (Feb. 2001) https://www.faa.gov/about/office_org/headquarters_offices/ast/licenses_permits/media/epa5dks.pdf
2. Kenneth Chang, "Falcon Heavy, in a Roar of Thunder, Carries SpaceX's Ambition Into Orbit," The New York Times (Feb. 6, 2018)
3. DEIS at 2-34 (citing April Glaser, "94 percent of SpaceX's Falcon 9 rocket launches have been successful," VOX (May 28, 2017), <https://www.vox.com/2017/5/28/15695080/spacex-falcon-9-rocket-launch-successful>).
4. FAA Order 1050.1F § 2-2.1(a)(3) https://www.faa.gov/documentLibrary/media/Order/FAA_Order_1050_1F.pdf.
5. Andrew Nelson, Spaceport Camden Site Analysis – UCC-BCS Site at 4 (July 18, 2016)
6. Andrew Nelson, Spaceport Camden Site Analysis – West Site /Ceylon at 3 (July 15, 2016)
7. Letter from J. Stanley to S. Zee, Comments and Recommendations on the Draft Environmental Impact Statement (EIS) for the Proposed Issuance of a Launch Site Operator License to the Camden County Board of Commissioners, Georgia (June 12, 2018).

8. Letter from B. Bolivar to S. Zee, Comments on the Federal Aviation Administration Draft Environmental Impact Statement for Spaceport Camden, Camden County, Georgia (June 14, 2018).
9. Email from K. Branham to R. Maday et al., RE: Camden Application for your Review (Jan. 29, 2019)
10. Letter from J. Starline to K. Wong (May 10, 2019)
11. FAA, *License and Permit Application Guide for Applicants*
12. *Community Involvement Manual* at Section 2.2.7 (Feb. 2016).
https://www.faa.gov/about/office_org/headquarters_offices/apl/enviro_n_policy_guidance/guidance/media/FAA_CIM.pdf
13. Email from P. Underwood to H. Price, Re: Spaceport Camden (April 2, 2018)
14. Mary Landers, "Cumberland Island landowners object to Camden spaceport plans," Savannah Morning News (April 9, 2018).
<https://www.savannahnow.com/news/20180409/cumberland-island-landowners-object-to-camden-spaceport-plans>
15. Camden County Press Release, Nov 7 2019,
<https://www.camdencountyga.gov/DocumentCenter/View/11380/FAA-Sets-Date-to-Release-and-Distribute-Final-Spaceport-Camden-EIS>
16. Letter from K. Wong to J. Starline (Oct. 17, 2019)
17. Dave Williams, "FAA sets December release of environmental impact study on Spaceport Camden," Atlanta Business Chronicle (Nov 7, 2019)
<https://www.bizjournals.com/atlanta/news/2019/11/07/faa-sets-december-release-of-environmental-impact.html>
18. Camden County Press Release, Dec 17, 2019, "Camden County and FAA Agree to Toll Licensing Decision Clock as Application Progresses"
<https://www.camdencountyga.gov/DocumentCenter/View/11456/Camden-County-and-FAA-Agree-to-Toll-Licensing-Decision-Clock-as-Application-Progresses>
19. Camden County Press Release, Dec 19, 2019, "Camden County Outlines Decision to Refocus FAA Review of Small Launch Vehicles.
<https://www.camdencountyga.gov/DocumentCenter/View/11459/Camden-County-Outlines-Decision-to-Refocus-FAA-Review-to-Small-Launch-Vehicles>
20. Email from K. Branham (FAA) to D. Murray (FAA) re Camden Agenda (Aug. 11, 2017)
21. Email from B. Thomas (FAA) to K. Branham (FAA) re Camden notes (Aug. 11, 2017)
22. Email from B. Thomas (FAA) to K. Branham (FAA) FW Camden Ec study for pops on Cumberland Island (Nov. 08, 2018)
23. Email from D. Murray (FAA) to S. Jackson (FAA) re Camden LCI pop number (Oct. 12, 2018)
24. Email from S. Howard to S. Zee (FAA) re Camden- issues from the project (Jun. 08, 2016)
25. Email from K. Perez (FAA) to K. Branham (FAA) RE: Camden Application for your Review (Jan. 30, 2019)
26. Email from P. Underwood (FAA) to H. Price (FAA) Re: Spaceport Camden (Apr. 02, 2018)

Documents Attached to June 14, 2018 Comments on Draft EIS.

1. NOAA Storm Surge Maps
2. Bathymetry Maps of Proposed Spaceport Site
3. Map of Cultural and Community Resources
4. Map of Cumberland Island Wilderness Area
5. Map of Private Homes on Cumberland and Little Cumberland Islands
6. Map of Historic Resources on Cumberland and Little Cumberland Island
7. Map of Spaceport Site with Minimum Distance Requirements
8. Map of Alternative Sites with Minimum Distance Requirements
9. Atlanta Environmental Management, Inc. Public Comments on DEIS
10. Camden County 2018→ 2023→ 2033 Strategic Plan [hereinafter Strategic Plan], available at https://issuu.com/camdencountyboc/docs/2018_camden_county_strategic_plan?e=32272897/58551200
11. <https://www.archives.gov/federal-register/codification/executive-order/12465.html>
12. United States Government Accountability Office Report to the Chairman, Committee on Science, Space and Technology, House of Representatives: Federal Aviation Administration Commercial Space Launch Industry Developments Present Multiple Challenges GAO-15-706 (August 2015) at 26, available at <https://www.gao.gov/assets/680/672144.pdf>
13. FAA Aerospace Forecast: Fiscal Years 2018-2038 at 36, available at https://www.faa.gov/data_research/aviation/aerospace_forecasts/media/FY2018-38_FAA_Aerospace_Forecast.pdf.
14. Commercial Space Launch Industry Developments Present Multiple Challenges at Table 1, at <https://www.gao.gov/assets/680/672144.pdf>
15. FAA, Annual Compendium of Commercial Space Transportation (2013), at https://www.faa.gov/about/office_org/headquarters_offices/ast/media/Annual_Compendium_of_Commercial_Space_Transportation_2012_February_2013.pdf.
16. FAA, Annual Compendium of Commercial Space Transportation (2018), at https://www.faa.gov/about/office_org/headquarters_offices/ast/media/2018_AST_Compendium.pdf
17. <http://spaceflight101.com/2017-space-launch-statistics/>