

**DRAFT QUESTIONS THAT RELAY CERTAIN LOCAL CONCERNS ABOUT SPACEPORT
CAMDEN TO THE FEDERAL AVIATION ADMINISTRATION FOR CONSIDERATION IN THE
ENVIRONMENTAL IMPACT STATEMENT**

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3 November 2015

Introduction. An exhaustive list of local environmental concerns provided during the public scoping process will benefit all involved in the Environmental Impact Statement (EIS). The EIS can then be expected to evaluate environmental risks more thoroughly. Appropriate mitigation actions will usually be suggested to offset unavoidable environmental impacts that are raised in a timely fashion. Surprise issues presented after the Draft Environmental Impact Statement is written often cannot be treated with as much care, and decisions may simply be made without the benefit of their full analysis or appropriate mitigation.

A number of local concerns may become moot once details are known about allowable activities at the site. Some of those remaining concerns will likely advance to the forefront. We need not anticipate which will become most important, but we need to provide as many as possible now to reduce the number of surprise issues in the future.

For a rational decision, environmental risks must be balanced against economic benefits. Finding that balance follows the spirit of the National Environmental Policy Act (NEPA) under which EIS's are prepared. Many of the local concerns about Spaceport Camden have to do with a desire to evaluate economic gains against environmental losses and mitigation actions. For an EIS to lead to meaningful and publically acceptable decisions, a broad and complete *economic benefits analysis* is usually essential for comparison.

An Environmental Impact Statement (EIS) must address a wide range of environmental considerations, including local concerns. The broad scope is established by NEPA.

Section 101 of NEPA articulates the intent of environmental protection in the United States. It includes assurance of "safe, healthful, productive, and aesthetically and culturally pleasing surroundings" by "each generation as trustee of the environment for succeeding generations." It seeks "the widest range of beneficial uses of the environment without degradation, risk to health or safety, or other undesirable and unintended consequences." It requires preservation of "important historic, cultural, and natural aspects of our national heritage" and to "maintain, wherever possible, an environment that supports diversity, and variety of individual choice." It asks us to "achieve a balance between population and resource use which will permit high standards of living and a wide sharing of life's amenities;" and to "enhance the quality of

renewable resources and approach the maximum attainable recycling of depletable resources.”

Vitriol. It can be helpful to remove all vitriol from statements of environmental concern and restate them as questions for the EIS consultants to consider.

Below is a list of questions that attempt to do this. They arise from local concerns voiced about Spaceport Camden. The compilation is part of an effort by Satilla Riverkeeper to relay the concerns of some of its members. The Satilla Riverkeeper has now generously shared their list with the Environmental Issues Subcommittee. Those who have voiced these concerns are not identified.

Assignment. Please study the following questions, offer your suggestions to rephrase and refine for effective communication to the EIS consultants, and please add to the list with questions of your own about any concern, listed yet or not.

Your review needs to be done immediately. I hope you can provide your thoughts within a week or 10 days. If you need extra time, please let me know. The Public Scoping Period is about to begin and will last roughly six weeks.

I plan to present to the FAA as complete and refined a list of questions as possible during the public scoping period.

After the question list is a cautionary statement that I hope you will take to heart.

Twenty-seven questions offered for your consideration [a brief title of the relevant concern is in brackets].

1. [Evacuation inconvenience during launches] What locations will have to be evacuated during launches? Will a map of evacuations under all allowable launch trajectories be created in the EIS? In particular, will evacuations ever include some or all of Cumberland Island, Little Cumberland Island, Jekyll Island, Dover Bluff, Piney Bluff, Lampadoshia Road, Harrietts Bluff, Cabin Bluff, Shellbine, Shellbine Creek, the Intracoastal Waterway, the waters off the beaches out to some number of miles, the inland waters of St Andrew Sound, Cumberland River, Floyd Creek, Todd Creek, Satilla River estuary, Dover Creek, Umbrella Creek?
2. [Evacuation inconvenience during launches] From the known record, how often is a launch scrubbed and a second evacuation made necessary for the same launch? How will evacuees be notified of a scrubbed launch and when a second evacuation will be scheduled?
3. [Launch safety] What is the risk of an explosion over a populated area? What is the risk of dangerous debris from such an explosion, such as hot debris that can ignite structures, dry fields, or forests, or debris that causes exposure to ionizing radiation?
4. [Radiation safety] What are the dangers of a spaceport near the Kings Bay Submarine base, a base which handles nuclear weapons? In particular, what is the likelihood of a rocket launched at Spaceport Camden going off course and striking a nuclear weapon at Kings Bay

Submarine Base? Regardless of the likelihood, what are the consequences of rocket striking a nuclear weapon at Kings Bay submarine base? Would a nuclear explosion occur? Would it be more like a nuclear dirty bomb explosion? What is the zone of impact of such a disaster?

5. [Noise pollution] What is the noise intensity and duration of the various kinds of launches to be allowed at the site? Is repeated exposure to launch noise sufficient to cause permanent hearing loss for those living closest to the launch site or employees at the site? If so, what will be done to prevent hearing loss by nearby residents and employees?
6. [Vibration damage] Will vibration from launches accelerate creek bank erosion at Todd Creek or Floyd Creek, or along the many other sandy bluffs common in the vicinity of the spaceport? Will vibration cause damage to nearby residences, facilities, or other buildings off site?
7. [Sea level rise and hurricane safety] How might the operation or facilities at the spaceport eventually be affected by projected sea level rise? What will be done to limit damage to the spaceport facilities and personnel during occasional hurricanes?
8. [Pre-existing brownfields] What progress will be made to clean up the existing toxic wastes and unexploded ordnance left by former industries at the site, including Bayer Crop Science and Thiokol Chemical? Are all the types of chemical dangers and their locations known on the property? If so, how will the public be notified of their final disposition? If not, what effort will be made to find them, clean or isolate them, and notify the public?
9. [Pre-existing brownfields] If the site is not thoroughly cleaned of contaminants before a spaceport is built, how will the public and spaceport employees be assured that they will not be harmed by exposure to soil and groundwater contamination? How will the possible migration of contamination or release into nearby waters, air and soil be monitored and publically reported?
10. [Interference with recreation] Will hunting at Cabin Bluff be poorer because wildlife will decline with the increase in disturbances originating from the spaceport? Will hunting days be limited by spaceport activities?
11. [Archeological, cultural, and historical preservation] What efforts will be made to identify and secure important archeological, cultural, and historical sites on Floyds Neck, and prevent damage to these? Do these important sites include Timucuan/Guale native American artifacts, evidence of the exploration by Jean Ribault in 1562, evidence of the construction of Fort Caroline (a recently publicized possibility) or Huguenot settlement, evidence of occupation by Revolutionary War heroes, such as Nathaniel Greene and Roswell King, Acadian settlement, artifacts of the slave trade, settlement by Gen. John Floyd in 1800, evidence of the War of 1812 and Civil War, or other sites and artifacts of historical and cultural value especially to the oldest families of Camden County? Have highly regarded archeologists of southeastern Georgia been consulted about the property, such as Dr. Frankie Snow of South Georgia State College in Douglas? Have knowledgeable historians been consulted about the property, such as Eloise Bailey Thompson or others of the Guale Historical Society in Camden County, or the Georgia Historical Society in Savannah?
12. [Water use, treatment, and pollution] How much water will be used at the site both during and between launches? How does this use compare to all present uses in Camden County (residential and industrial)? What conservation measures will be in place to prevent over use? From what source will the water be obtained? What will be done with water after use? Will it need to be treated? Will it be reused? Will the site have dangerous runoff? Will NPDES permits be sought in order to discharge treated water off site? What

monitoring will be done to ensure compliance with all standards of public safety and environmental health? Will water withdrawals impact the water quantity or quality used by people, wildlife or ecosystems?

13. [Air pollution] What kinds of air pollution will be generated at the site both during and between launches? Will dangerous gases, or vapors be left in the air during launch? What is the chance that these can damage plants, animals, people, and artifacts cumulatively over repeated launches? What is the carbon footprint of the spaceport compared to other industries now in Camden County?
14. [Fishery resources] Will the coastal fishery be protected by spaceport operations? Will nursery grounds be protected, restored, or enhanced for all species of commercially and recreationally important species, such as shrimp, oysters, clams, blue crabs, spotted seatrout, red drum, striped bass, eels, shad, herrings, tarpon?
15. [Rare animals and plants] Will state and federally listed rare, threatened, and endangered species found in local habitats be protected, such as manatees, right whales, humpback whales, roundtailed muskrats, bald eagles, wood storks, kestrels, oyster catchers, black skimmers, gulf-billed terns, black rail, least terns, swallow-tailed kites, Kirtlands warbler, red cockaded woodpecker, shortnose sturgeon, Atlantic sturgeon, flatwoods salamander, gopher frog, striped newts, indigo snake, southern hognose snake, gopher tortoise, alligator snapping turtle, diamondback terrapin, hairy rattleweed? [This list could grow, would be thorough to include all species possibly found in this part of Georgia that can be extracted from the lists of plant and animal species of special concern available from Georgia Wildlife Resources Division of DNR]
16. [Habitat enhancement] Will some upland, wetland, and estuarine habitat on Floyds Neck be set aside or better protected for those rare, threatened, or endangered species that could occupy such habitats there, even if no individuals can be located during the EIS process? Will important wildlife corridors, flyways, and ecotones be protected, such as may exist at the upland edge of marshland?
17. [Habitat preservation] Will all tree-nesting sites for wading birds be preserved? Will black bear habitat be preserved?
18. [Private property values] What will happen to property values on Harrietts Bluff, Little Cumberland Island, and all other residential areas either within earshot of the spaceport, or along launch paths? Will the property values decrease? If they decrease, will people be compensated for their loss?
19. [Coastal engineering] Will dredging and other construction be done to improve the wharf for loading and unloading equipment at the edge of Floyd Creek, or will new wharf construction be done on Floyd Creek, Todd Creek, or Camp Creek? If so, how much material will be dredged and where will it be placed? How much effort will be made to promote the use of living shorelines to stabilize banks instead of bulkheads?
20. [General development impacts] What areas in Camden County are likely to grow in population, impervious surface, income, and traffic because of the spaceport? What areas in adjacent counties, such as Brantley, Charlton, and Glynn? Are all these areas adequately prepared for growth in sewage treatment, water supply, solid waste disposal, electric power, fuels, transportation, traffic, and modern communications? Will the important river corridors be protected from development impact, especially the Satilla River? Will growth be planned in a way that can mitigate impacts on the natural environment (so-called smart growth), or at least to prevent sprawl?
21. [Recreation and tourism] Will visits to Cumberland Island National Seashore be limited by spaceport activities?

22. [Traffic] What will be the impact of having a spaceport in the vicinity on the amount of traffic through such communities as Harretts Bluff and Woodbine? How is traffic expected to grow with the direct and indirect development stimulated by the spaceport?
23. [Aesthetics] What landscaping and traffic engineering will be done to compensate for the disturbances caused by widening of the main roads through Harriets Bluff, Satilla Bluffs, Billyville, Forest View, or other communities that have never before experienced such traffic, massive roads, or congestion?
24. [Commerce] How much will spaceport activities interfere with other important commerce such as the ports (Jacksonville, Fernandina, and Brunswick) or air traffic (St. Simons, Jekyll, Jacksonville, St. Mary's, etc).
25. [Design life of spaceport impacts] What is the projected lifetime of the spaceport and its facilities? How many years can we expect spaceport operations to last given projected demand and maintenance costs? Is there sufficient spaceport demand to keep a spaceport in full operation for its maximum number of launches per year over its projected design life in years?
26. [Balance between economic gain and environmental loss] What is the socio-economic impact of the spaceport? How many jobs will be created? What types of jobs? Will these jobs help keep our most talented from leaving Camden County? What is the effect of the spaceport on the tax base and public funds for education, health, and welfare for the most needy in our community? Will it cost more public funds to have a spaceport than it recovers in revenue?
27. [Opportunity cost] What can be done with the site if a spaceport is not developed on it?

This list does not include the two questions provided earlier about perchlorate. You may consider those to be included also.

A word of caution: Some ways of stating concerns can backfire by being unwittingly offensive. For example, a question was raised about whether local spaceport jobs might not be available to people already living in Camden County, but would have to be taken instead by people moving in from elsewhere. This did not seem simply to be a concern about population growth. A possible implication (hopefully unintended) is that the county could not provide the necessary quality of people to fill spaceport jobs. Such would be offensive and inaccurate, and also backwards from the pulse of discussion within the county itself. I suspect the vast majority of parents of bright kids in Camden County hope that high-tech job opportunities would actually retain some of the best and brightest here, keeping them from permanently leaving the area. Camden County High School has many very bright and accomplished kids, most of whom will leave southeast Georgia for college and will not return to pursue their careers because of lack of opportunity like certain spaceport jobs. Likewise is the implication that people would be unwelcome to move here even if they were the best qualified to take a job offered.

Please consider the implications in the questions you review or propose. I think we can stay out of such trouble if we simply focus our questions on the balance between environmental risk and economic gain.