



Indian River Lagoon Roundtable

An environmental discussion group

www.irlroundtable.com

Here on Florida's Space Coast, only the Indian River Lagoon (IRL) National Estuary separates us from the remarkable space operations occurring at Cape Canaveral Spaceport, Kennedy Space Center and Cape Canaveral Space Force Station. Our group was established as a call to action aiming to establish a synergistic relationship between an estuary of National Significance and the emerging space industry.

Space Operations need to be held accountable for the environmental impact of their production facilities, spaceports, launches and landings. Oversight of these operators, such as SpaceX, Blue Origin and United Launch Alliance, is insufficient in terms of air, soil and water monitoring and protecting America's wilderness preserves. The White House must prioritize protecting frontline communities and wilderness areas affected by nearby space operations. Establishing a national Space Operations NEPA policy would provide essential support for communities affected by the environmental consequences of the space race.

Why is a Space Operations NEPA Policy Necessary?

All of America's coastal wilderness areas are in jeopardy due to encroaching commercial launch facilities. The space industry seeks property near our wilderness areas because they provide uninhabited safety zones. This practice has resulted in the destruction of preserved habitat and the death of endangered species. Great care must be taken to protect America's wilderness preserves in perpetuity.

The current NEPA process is complex, time consuming and expensive. The SpaceX Starship Super Heavy project at Cape Canaveral has required three NASA-KSC environmental assessments, a US Space Force Environmental Impact Statement, two FAA Launch License assessments and a Florida DEP water discharge assessment. A single centralized and streamlined "Space Operations NEPA Policy" must be established to expedite the process for the applicants and simplify the commenting process for the public.

Cumulative Impacts

No one knows what environmental impact will result from over one hundred Falcon 9 and eighty eight Starship Super Heavy launches annually at Cape Canaveral Spaceport (CCS). Data must be collected from Air, Water, Soil and Noise monitoring systems and modeled to predict the future cumulative impacts of a rapidly increasing launch rate.

Chemical Pollution

Kennedy Space Center has failed to identify and remediate its legacy chemical contamination sites in a timely manner. A January 2021 GAO report stated that KSC had \$197m in unfunded environmental liabilities in need of remediation.

Most of KSC's contaminated areas are polluted with chemicals (TCE, PCB) used in the washdown of space vehicles and their launch gantries. Chemically laden washdown water should not be discharged into nearby waterways. It should be tested, filtered and retained on-site. Chemicals and toxicants used in the manufacture, launch and reuse of space vehicles and launch facilities must be formally monitored, recorded and recovered.

What Does the Future Hold?

We are just seeing the start of a monumental launch rate that will be required to orbit large commercial satellite constellations. The SpaceX Starlink Constellation has immediate plans to orbit 12,000 and will eventually upscale to over 34,000 satellites. Amazon will soon orbit over 3,400 satellites in its Kuiper Constellation. In 2023 the Federal Communications Commission reported that it had received over 56,000 commercial satellite permit applications. The commercial launch rate will increase exponentially to meet the growing demand to orbit these communication satellites. For a better perspective, consider that it will require over 2,100 Falcon 9 launches to transport the 56,000 satellites now awaiting FCC permits.

A nationwide Space Operations Nepa (SON) policy would provide a centralized and streamlined environmental assessment process that would benefit both space operators and the public alike. It would save operators time and money while simplifying the public commenting process. A SON policy would protect America's wilderness preserves and ensure the health and safety of humans living near space operation facilities. It also would provide the quantified data needed to model the future cumulative effects of a rapidly increasing launch rate.

The [Indian River Lagoon Roundtable](#) recognizes the importance of the space industry but wants to ensure it's done without threatening the health of America's coastal communities and wilderness areas. Improving, preserving, and protecting public health and the environment nationwide is crucial, and we hope that you will consider the urgent need for a national Space Operations NEPA policy.

Resources:

- Indian River Lagoon Roundtable - <https://irlroundtable.com/forum/>
- National Environmental Policy Act: <https://ceq.doe.gov/>
- New York Times - Wildlife Protections Take a Back Seat to SpaceX's Ambitions, July 2024. https://www.nytimes.com/2024/07/07/us/politics/spacex-wildlife-texas.html?unlocked_article_code=1.5U0.zXSf.08-MDBeOYoFd
- Science Daily - Upsurge in rocket launches could impact the ozone layer, February 2023. <https://www.sciencedaily.com/releases/2023/02/230214154013.htm>
- GAO NASA ENVIRONMENTAL LIABILITIES, GAO-21-205, January 2021, fig 4, pg 16. https://drive.google.com/drive/u/0/folders/1wmSeJyfy_7124dn4FPRAIsuUW9x2kSaI
- Considering Cumulative Effects Under the Environmental Policy Act: <https://drive.google.com/file/d/1gqtk2sZbp1dx3mJjCTJS1qcrcfxwEMGc>
- FCC - Expediting Initial Processing of Satellite and Earth Station Applications, September 2023, page 67. <https://docs.fcc.gov/public/attachments/FCC-23-73A1.pdf>
- SpaceX Starlink Satellite Constellation, <https://en.wikipedia.org/wiki/Starlink>
- Kuiper Satellite Constellation, https://en.wikipedia.org/wiki/Kuiper_Systems