

Calendar No. 440

119TH CONGRESS }
2d Session }

SENATE

{ REPORT
119-128 }

ORBITAL SUSTAINABILITY ACT OF 2025

R E P O R T

OF THE

COMMITTEE ON COMMERCE, SCIENCE, AND
TRANSPORTATION

ON

S. 1898



JUNE 18, 2026.—Ordered to be printed

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SENATE COMMITTEE ON COMMERCE, SCIENCE, AND TRANSPORTATION

ONE HUNDRED NINETEENTH CONGRESS

SECOND SESSION

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Mr. CRUZ, from the Committee on Commerce, Science, and
Transportation, submitted the following

R E P O R T

[To accompany S. 1898]

[Including cost estimate of the Congressional Budget Office]

The Committee on Commerce, Science, and Transportation, to which was referred the bill (S. 1898) to establish a demonstration program for the active remediation of orbital debris and to require the development of uniform orbital debris standard practices in order to support a safe and sustainable orbital environment, and for other purposes, having considered the same, reports favorably thereon without amendment and recommends that the bill do pass.

PURPOSE OF THE BILL

The purpose of S. 1898, the Orbital Sustainability Act of 2025, is to establish a Federal program to identify and reduce orbital debris and to support research and development for active debris remediation technologies, particularly to promote uniform space sustainability standards and traffic coordination practices.

BACKGROUND AND NEEDS

Access to outer space is crucial for U.S. national security and economic growth. Satellites orbiting Earth have become vital to our daily lives, enabling global communication, weather monitoring, vehicle navigation, and increased crop yields. As of 2021, the United States Space Surveillance Network (SSN) sensors track more than

27,000 pieces of orbital debris. About 23,000 of these debris pieces are larger than a softball.¹

Much more debris—too small to be tracked but large enough to threaten human spaceflight and robotic missions—exists in the near-Earth space environment. There are half a million pieces of debris the size of a marble or larger, and about 100 million pieces approximately 0.04 inches (one millimeter) or bigger. There is even more micrometer-sized debris (0.000039 inches in diameter). Even a tiny piece of orbital debris hitting a spacecraft could cause serious problems: disrupting satellite operations, delaying missions, raising insurance costs, and hindering growth and innovation in the commercial space sector.

As the number of satellites and satellite constellations in low Earth orbit (LEO) continues to grow rapidly, the risks associated with orbital debris are increasing. Commercial space activity has expanded significantly in recent years, with thousands of new satellites launched annually to support broadband connectivity, Earth observation, scientific research, and national security missions. While these systems provide substantial benefits, the increasing density of objects in orbit heightens the likelihood of collisions, which generate additional debris and further degrade the safety and sustainability of the space environment.

The Orbital Sustainability Act of 2025 would seek to address these challenges by authorizing a demonstration program for the active remediation of orbital debris, supporting the development of commercially viable debris-remediation technologies, and directing the Federal Government to update and promote uniform orbital debris mitigation and space traffic coordination standards. By advancing technical capabilities, improving coordination, and establishing clearer standards, the legislation aims to support the continued safe, secure, and sustainable use of outer space for government, commercial, and scientific missions.

SUMMARY OF PROVISIONS

S. 1898 would do the following:

- Require the Secretary of Commerce, in coordination with the National Aeronautics and Space Administration (NASA), additional relevant Executive Branch departments and agencies, and representatives from industry, academia, and nonprofits, to publish a list of orbital debris objects that may be remediated to improve the safety of orbiting satellites and on-orbit activities.
- Require NASA to conduct additional research and development to mature technologies that address commercial capability gaps in debris remediation, prioritizing technologies capable of handling debris with a range of characteristics identified in the prioritized list.
- Require NASA to establish a competitive demonstration project to advance technologies and methods for active debris remediation.

¹Eva Cullen, “Orbital Ecology: Science’s Frontier in Addressing the Space Debris Dilemma,” *Columbia Undergraduate Science Journal*, August 24, 2023, <https://journals.library.columbia.edu/index.php/cusj/blog/view/550>.

- Require the Secretary of Commerce to publish an assessment of the estimated Federal and private sector demand for orbital debris remediation services over the 10-year period from enactment.
- Encourage the U.S. Government to buy active debris remediation services from commercial industry once available.
- Direct the Executive Branch to update U.S. Uniform Orbital Debris Standard Practices within 90 days of the date of enactment and require the Federal Aviation Administration (FAA) and the Federal Communications Commission (FCC) to use the updated standard practices as the basis for orbital debris regulations applicable to commercial space activities.
- Encourage U.S. Government efforts to align the debris regulations of other nations with the United States.
- Require the Secretary of Commerce, in coordination with relevant Executive Branch departments and agencies and the FCC, to facilitate the development of standard practices for space traffic coordination and consult regularly with industry, academia, and nonprofits on these practices.

LEGISLATIVE HISTORY

S. 1898, the Orbital Sustainability Act of 2025, was introduced on May 22, 2025, by Senator Hickenlooper (for himself and Senators Cantwell, Wicker, and Lummis) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On February 12, 2026, the Committee met in open Executive Session and, by voice vote, ordered S. 1898 reported favorably without amendment.

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S. 447, the ORBITS Act of 2023, was introduced on February 15, 2023, by Senator Hickenlooper (for himself and Senators Lummis, Cantwell, Wicker, Sinema, and Feinstein) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On July 27, 2023, the Committee met in open Executive Session and, by voice vote, ordered S. 447 reported favorably with an amendment (in the nature of a substitute). On October 31, 2023, S. 447 passed the Senate with an amendment by unanimous consent.

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S. 4814, the ORBITS Act of 2022, was introduced on September 12, 2022, by Senator Hickenlooper (for himself and Senators Lummis, Cantwell, and Wicker) and was referred to the Committee on Commerce, Science, and Transportation of the Senate. On December 21, 2022, the Committee discharged S. 4814 by unanimous consent, and that bill passed the Senate with an amendment.

ESTIMATED COSTS

In accordance with paragraph 11(a) of rule XXVI of the Standing Rules of the Senate and section 403 of the Congressional Budget Act of 1974, the Committee provides the following cost estimate, prepared by the Congressional Budget Office:

S. 1898, ORBITS Act of 2025			
As ordered reported by the Senate Committee on Commerce, Science, and Transportation on February 12, 2026			
By Fiscal Year, Millions of Dollars	2026	2026-2031	2026-2036
Direct Spending (Outlays)	0	0	0
Revenues	0	0	0
Increase or Decrease (-) in the Deficit	0	0	0
Spending Subject to Appropriation (Outlays)	0	150	not estimated
Increases <i>net direct spending</i> in any of the four consecutive 10-year periods beginning in 2037?	No	Statutory pay-as-you-go procedures apply?	No
		Mandate Effects	
Increases <i>on-budget deficits</i> in any of the four consecutive 10-year periods beginning in 2037?	No	Contains intergovernmental mandate?	No
		Contains private-sector mandate?	No

S. 1898 would authorize the appropriation of \$150 million over the 2026–2030 period for the National Aeronautics and Space Administration (NASA) to establish a competitive grant and partnership program to research, develop, and demonstrate orbital debris remediation technologies. Orbital debris refers to human-made objects in Earth’s orbit that no longer serve an intended purpose. The bill also would require NASA to report to the Congress on the program and offer recommendations for remedial actions.

S. 1898 also would require the Secretary of Commerce to publish a prioritized list of orbital debris candidates for removal or disposal and to facilitate the development of standard practices for planning and coordinating activities to enhance the safety of operations in space. Finally, the bill would direct the National Space Council, in consultation with NASA and other relevant agencies, to update the Orbital Debris Mitigation Standard Practices.

The estimated budgetary effects of the legislation are shown in Table 1. Most of the costs of the legislation fall within budget function 250 (general science, space, and technology).

TABLE 1.—ESTIMATED BUDGETARY EFFECTS OF S. 1898

	By fiscal year, millions of dollars						
	2026	2027	2028	2029	2030	2031	2026–2031
INCREASES IN SPENDING SUBJECT TO APPROPRIATION							
Estimated Authorization	0	150	*	*	*	*	150
Estimated Outlays	0	40	52	35	15	8	150

The bill would authorize the appropriation of \$150 million over the 2026–2030 period without specifying an amount for any particular year. For this estimate, CBO has assumed the entire amount would be provided in 2027. Estimated outlays would be different if that amount was provided in multiple years over the 2026–2030 period.

* = between zero and \$500,000.

The bill would authorize the appropriation of \$150 million over the 2026–2030 period without specifying an amount for any particular year. For this estimate, CBO has assumed the entire amount would be provided in 2027. On that basis and using historical spending patterns for similar programs, CBO estimates that implementing the debris remediation program would cost \$150 million over the 2026–2031 period. Estimated outlays would be dif-

ferent if that amount was provided in multiple years over the 2026–2030 period.

In addition, CBO estimates that the incremental cost of the coordinative, consultative, and reporting tasks assigned to the Department of Commerce, the National Space Council, and other agencies would be insignificant because they are already carrying out a majority of those activities under current law.

The CBO staff contact for this estimate is Tanya Bakshi. The estimate was reviewed by H. Samuel Papenfuss, Deputy Director of Budget Analysis.

PHILLIP L. SWAGEL,
Director, Congressional Budget Office.

REGULATORY IMPACT STATEMENT

In accordance with paragraph 11(b) of rule XXVI of the Standing Rules of the Senate, the Committee provides the following evaluation of the regulatory impact of the legislation, as reported:

Number of Persons Covered

S. 1898 would establish a demonstration program for active remediation of orbital debris, instruct Federal agencies to develop and update uniform orbital debris mitigation and space traffic coordination standards, and authorize NASA to award competitive grants to eligible entities for research, development, and demonstration activities. The legislation would impact a small number of Federal personnel, as well as representatives from participating commercial entities, academic institutions, and nonprofit organizations involved in executing or supporting the demonstration project and related coordination efforts.

Economic Impact

S. 1898 would not have an immediate direct economic impact on the public. The legislation authorizes Federal expenditures to support a demonstration project for active orbital debris remediation and related analyses. Over time, the bill may generate indirect economic benefits by improving the safety and sustainability of space operations. Reduced collision risks and improved space traffic coordination may lower operational costs for satellite operators, decrease the chances of costly on-orbit failures or service interruptions, and promote continued growth and innovation in the commercial space sector. Improved orbital safety may also lower downstream costs related to satellite replacement, insurance premiums, and mission delays.

Privacy

S. 1898 is not expected to have any direct impact on individual privacy. The legislation focuses on research, development, and demonstration activities, as well as the establishment of standard practices related to orbital debris mitigation and space traffic coordination.

Paperwork

S. 1898 is not expected to impose a significant additional paperwork burden on individuals or entities outside of the Federal Gov-

ernment. The legislation primarily authorizes research, development, and demonstration activities related to orbital debris remediation and directs Federal agencies to develop and update standard practices for orbital debris mitigation and space traffic coordination. While the implementation of the demonstration project and the development of standard practices may involve routine reporting, recordkeeping, and documentation by participating Federal agencies and eligible entities, these activities are expected to be limited in scope and consistent with existing Federal research, contracting, and regulatory processes. No significant additional paperwork burdens are anticipated beyond those necessary to carry out the activities authorized by the Act.

CONGRESSIONALLY DIRECTED SPENDING

In compliance with paragraph 4(b) of rule XLIV of the Standing Rules of the Senate, the Committee provides that no provisions contained in the bill, as reported, meet the definition of congressionally directed spending items under the rule.

SECTION-BY-SECTION ANALYSIS

Section 1. Short title.

This section would provide that the bill may be cited as the “Orbital Sustainability Act of 2025” or the “ORBITS Act of 2025”.

Section 2. Findings; Sense of Congress.

This section would describe the growing accumulation of orbital debris that threatens the safety and sustainability of U.S. civil, commercial, and scientific activities that rely on secure access to LEO. It would further encourage orbital debris remediation through domestic action, international leadership, and the encouragement of best practices to limit the creation of new debris.

Section 3. Definitions.

This section would define the terms “active debris remediation”, “Administrator”, “appropriate committees of Congress”, “demonstration project”, “eligible entity”, “orbital debris”, “project”, “Secretary”, and “space traffic coordination”.

Section 4. Active debris remediation.

This section would require the Department of Commerce, in coordination with NASA and other stakeholders, to identify and publicly list priority orbital debris objects suitable for remediation not later than 90 days after enactment, based on factors such as risk, size, and orbital characteristics, with period updates made publicly available. It would require NASA to establish a demonstration program, no later than 180 days after enactment, to competitively award funding to eligible U.S. entities for research, development, and demonstration of active debris remediation technologies, with defined eligibility requirements, project phases, milestones, and performance metrics. NASA would be tasked with supporting technology maturation and managing aspects of the demonstration missions, while proposals would be evaluated based on safety, technical feasibility, cost, benefit, maturity, and their potential to advance commercial capabilities.

This section would also require interagency consultation prior to demonstration missions and would require briefings and annual reports to Congress on project progress, technology development, and potential duplication with other Federal efforts, followed by a report containing legislative and policy recommendations after the first demonstration mission. It would also require technical analysis assessing cost effectiveness and remaining technology gaps and express the sense of Congress that international cooperation is important to addressing orbital debris remediation efforts.

This section would authorize \$150 million for fiscal years 2026 through 2030 and would rescind unobligated funds after 2030.

Lastly, this section would prohibit the NASA Administrator from issuing any regulation relating to space activities under title 51 or activities related to the demonstration project outlined in this Act.

Section 5. Active debris remediation services.

This section would authorize Federal agencies to competitively procure active orbital debris remediation services to encourage competitive development, operation, improvement, and commercial availability of such services. It would authorize the Administrator of NASA and the heads of other relevant Federal departments and agencies to acquire orbital debris remediation services, whenever practicable, through fair and open competition using well-defined, milestone-based contracts in accordance with the Federal Acquisition Regulation, taking into consideration the findings and economic analysis associated with the demonstration project established in section 4.

This section would also require the Secretary of Commerce, acting through the Office of Space Commerce, to publish an economic assessment of the estimated demand for orbital debris remediation services in both the Federal Government and private sector over the 10-year period beginning in 2026.

Section 6. Uniform orbital debris standard practices for United States space activities.

This section would direct the National Space Council (NSpC), working with the Secretary of Commerce, the Administrator of the FAA, the Secretary of Defense, the Secretary of State, the FCC, and NASA, to initiate an update to the Orbital Debris Mitigation Standard Practices not later than 90 days after enactment. It would require the updated standard practices to be published in the Federal Register and posted online not later than 1 year after enactment. It would also require the updated standard practices be used to inform bilateral and multilateral international discussions to encourage effective, nondiscriminatory standards and regulations implemented by other countries, and would require the Orbital Debris Mitigation Standard Practices to be periodically reviewed and updated at least every 5 years.

Section 7. Standard practices for space traffic coordination.

This section would direct the Secretary of Commerce, in coordination with the Secretary of Defense, members of the NSpC, and the FCC, to facilitate the development of standard practices for on-orbit space traffic coordination based on existing government and commercial industry guidelines and best practices, with the goal of

enhancing the safety and sustainability of space operations. It would require the Secretary of Commerce, through the Office of Space Commerce and in consultation with the National Institute of Standards and Technology, to engage in routine consultation with representatives from the commercial space industry, academia, and nonprofit organizations to ensure the best practices reflect a broad range of expertise. Once the standard practices are developed, this section would require the Secretary of Commerce, the Secretary of State, the Secretary of Transportation, the Administrator of NASA, and the Secretary of Defense to promote their adoption and use for both domestic and international space missions.

CHANGES IN EXISTING LAW

In compliance with paragraph 12 of rule XXVI of the Standing Rules of the Senate, the Committee states that the bill as reported would make no change to existing law.

