

CLARITY FOR THE SPACE ECONOMY

Draft Opinion Paper by the AIAA Cislunar Ecosystem Task Force

September 2023

Seaports and lighthouses were vital government investments that made crossing the seas and trade economical and safe. Today, spaceports, communications protocols, and GPS satellites are the public assets that play similar roles to enable rocket launches and satellite operations. Focused government investment has long played a key role in economic development and should today guide how U.S. policy approaches Earth and space as a single continuous economy. A giant leap in how we see and treat space as an extension of American life promises to transform our economy and culture.

For almost a year, the American Institute of Aeronautics and Astronautics (AIAA) has convened a community of interested participants around the simple but critical goal set forth in the 2020 National Space Policy: “Extend human economic activity into deep space by establishing a permanent human presence on the Moon...” This community, designated as the AIAA Cislunar Ecosystem Task Force, comprises several dozen volunteer participants drawn from private sector companies, universities, and non-governmental organizations. The task force is organized into sector-specific working groups focused on the technical and policy challenges of extending existing Earth-based economic activities into cislunar space—which AIAA defines broadly as between low Earth orbit and the lunar surface—as an essential building block for our economy, science, innovation, and security.

The task force’s work has already yielded important consensus views on what lies ahead for development of the cislunar economy. The design, construction, deployment, and operation of space-qualified infrastructure for the cislunar ecosystem will require annual investments in the hundreds of millions of dollars over the next five to seven years. Such an ecosystem will comprise sustainable operating interdependent systems that support long-duration always-available service platforms. This ecosystem will primarily be privately funded as commercially oriented extensions of current Earth-bound economic infrastructure. Furthermore, critical marquee national

space efforts under the U.S. Space Force and NASA leadership—including the Artemis program—are predicated upon the emergence of a robust commercial presence in cislunar space.

Chief among the challenges and barriers in the development of such a cislunar ecosystem is creating the conditions necessary to extend the private sector’s interest and investment in this effort—at scale and in the near term.

Role of the U.S. Government in Economic Development

Historically, the U.S. government has invested funding into needed physical infrastructure, such as roads, railroads, dams, electrification, communications, and education facilities, to promote the national defense and the general welfare of the population. As a result, government development programs stimulate local economic and social growth through employment, education, and technology innovation.

Pre- and post-pandemic economic development funding has been spread across almost all federal departments and agencies with a focus on a broad category of physical infrastructures. Economic development spending also has focused even more specifically on public infrastructures with the express goal of stimulating employment in communities, particularly among the middle class. Since 2021, the Infrastructure Investment and Jobs Act authorized more than \$1.5T of spending over the next 10 years.

A recent survey conducted by the Congressional Research Service (CRS)¹ inventoried federal economic development programs, funding amounts, and programmatic purposes. This funding is to be administered in partnership with state economic development offices in all 50 states and U.S. territories, which in turn solicit funding proposals from local constituent enterprises. Two Maguire Company reports detail some of these development programs that have had a broad measurable impact across a diverse range of communities.^{2, 3}

1 *Federal Resources for State and Local Economic Development*. (2021). Congressional Research Service. www.crsreports.congress.gov.

2 Military Affairs Commission (2008). *Economic Impact of Arizona’s Principal Military Operations*. The Maguire Company.

3 Military Affairs Commission (2017). *Economic Impact of Arizona’s Principal Military Operations*. The Maguire Company.

Space-related projects currently do not appear to be explicitly qualified or eligible for the economic development programs identified by CRS. However, the task force asserts that space activities should affirmatively be included in government economic development policies and programs irrespective of whether those activities have a physical presence on Earth or in space. Indeed, the distinction between economic development as activities pursued either on Earth or in space is very likely meaningless, as both key terrestrial and space infrastructures are inextricably interdependent. The success of federally-backed economic development in the 20th century—highways, air transportation, education, medicine, among others—strongly indicates that space economic development will yield benefits for Americans in the 21st century.

The AIAA Cislunar Ecosystem Task Force strongly advocates that current economic policy includes space-based enterprises and activities to boost the U.S. economy and to extend U.S. global leadership into space. A first step would be affirming the eligibility of space-related projects and enterprises as economic development projects under current policy. At the same time, space-related projects should be identified as eligible to contribute to meeting other economic goals, such as general economic development and job creation.

Taking Action: Project Clarity

The AIAA Cislunar Ecosystem Task Force proposes Project Clarity, a set of concrete steps to clarify the inclusion of space in national economic development initiatives. Project Clarity is solely focused on existing traditional economic development programs across government departments and agencies, and their potential applicability to space-related infrastructure without requiring new funding initiatives, without additional legislative action, and without jeopardizing existing program budgets. The task force distinguishes this effort from other federal space initiatives pertaining to military and civil science, such as Department of Defense or NASA budgeted activities, to avoid confusion or concern over competing for funds drawn away from other necessary space programs.

- The Office of Management and Budget (OMB), for example, is empowered to take the concrete step of publishing clarifying guidance for federal departments and agencies regarding the applicability and flexibility of economic development programs to support commercial space economic development. The OMB circular publication process routinely provides guidance to departments and agencies, and could be used to affirmatively direct the inclusion of space projects and applications in economic development programs.
- The independent Administrative Conference of the United States (ACUS) (<https://www.acus.gov/>), the primary authority for interpretation of U.S. government administrative and regulatory laws and policies, is similarly positioned to issue guidance affirming the eligibility of space activity for economic development programs. The American Bar Association Administrative Law Committee could also comment on such issues as a complementary balance of opinion to the views of ACUS.
- CRS, as a reliable and authoritative source on the depth, breadth, and public policy goals of federal economic development programs, should immediately prioritize analysis of space infrastructure projects and their fit in current federal and state economic policies and programs, without additional funding or authorization.

Equipped with the findings of these efforts, the AIAA Cislunar Ecosystem Task Force will continue to convene space economic policy leaders and experts, including distinguished panels of public and private sector participants, to discuss the applicability of U.S. government economic development programs to commercial space development, and provide guidance on the implementation of Project Clarity. The task force is prepared to kick off this effort as a private sector initiative without U.S. government endorsement or active involvement relying solely on publicly-available material, such as the CRS report. We invite participation by individuals and organizations in the review of this opinion paper.

This Draft Opinion Paper reflects the expert views of the AIAA Cislunar Ecosystem Task Force and is not necessarily a position of AIAA at large.

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