

SPACEPORT

Improvement Program

2023–2024



Cover: Artemis sits on LC-39B prior to liftoff, November 2022. Source: NASA

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Florida Spaceport Improvement Program

PROJECT HANDBOOK 2023–2024





NASA Artemis II Crew (announced 4/3/23). Source: NASA

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Source: NASA

PREFACE

Space is the universal connection shared by the entire global community and in many ways, Florida connects the global community to space.

Since 1965, when the first international telecommunications satellite was launched from Cape Canaveral, the State of Florida has played a pivotal role in integrating space and making it inseparable to the state, national, and world economy.

On May 30, 2020, American astronauts were launched on American Rockets from American soil once again. The NASA Crew Dragon spacecraft was the first crewed orbital spaceflight launched from the United States since the final Space Shuttle mission in 2011. It was launched from historic Launch Complex 39A.

For the last six decades Florida leaders have shaped a legislative and commercial environment to attract companies that design, build, launch, recover, refurbish and reuse rockets and spacecraft. Long-term and high-paying jobs are essential to the space industry in our state and the annual economic impact is in the billions of dollars.

To leverage these favorable economic and legislative conditions FDOT and Space Florida partner with commercial companies such as SpaceX, Blue Origin, One Web, and ULA on crucial infrastructure projects, sustaining Florida's preeminent position as America's unquestionable leader for space-facing industry and operations.



Significant private-sector aerospace investment in infrastructure has enabled the transition from three active launch complexes at the Cape Canaveral Spaceport in 2011 to eight active complexes today. With the increased capacity, launches tripled from 10 in 2011 to 31 in 2021, and nearly doubling again to 57 in 2022. The future looks even brighter, with launch tempo and volume projected to increase to over 100 Florida launches annually by 2027.

Spacecraft launched from Florida have directly benefited every American – improving global positioning systems, weather forecasting, disaster response, broadband web access, air traffic control, and communication.

From our shores, men and women have left the planet to explore the Moon, and to live and work in space aboard the International Space Station. Florida has become much more than a historic launch site. Currently, Florida is home to a thriving, rapidly expanding commercial space industry and the trajectory of growth experienced in recent years is forecast to increase in scope and

velocity. Florida leads the world in development of dynamic space transportation systems and the integration of space transportation into the fabric of state and national multi-modal transportation networks.

Florida has recognized that space is more than a program; it is a collection of high-value destinations for both cargo and people. These destinations demand safe, reliable, sustainable, and economically feasible transportation systems operating on market-driven schedules.

In the early years of space travel, only the federal government operated Florida's space launch systems and spaceport sites, usage largely dedicated to government missions and priorities. Today, commercial space transportation systems are privately owned and operated in support of a wide diversity of both governmental and commercial customers requiring delivery of people or cargo to space.

Commercial investment in space and in space transportation systems are driving requirements

for spaceport sites, operating environments, and infrastructure. Competition among states and nations is growing to host this rapidly evolving component of the transportation industry. The Florida Spaceport Improvement Program (SIP) responds directly to these trends and requirements, as Florida secures its place as the global leader in space commerce.

The SIP is designed to stimulate private sector investment, commercial spaceport development and, most importantly, improve the quality of life for Floridians. The program is specifically tailored to set conditions to achieve those key goals. The SIP provides funding for projects that:

- Improve aerospace transportation facilities. Facilitate and promote inter-agency efforts to improve space transportation capacity and efficiency
- Encourage cooperation and integration of airports and spaceports, and
- Facilitates and promotes inter-agency efforts to improve space transportation capacity and efficiency.



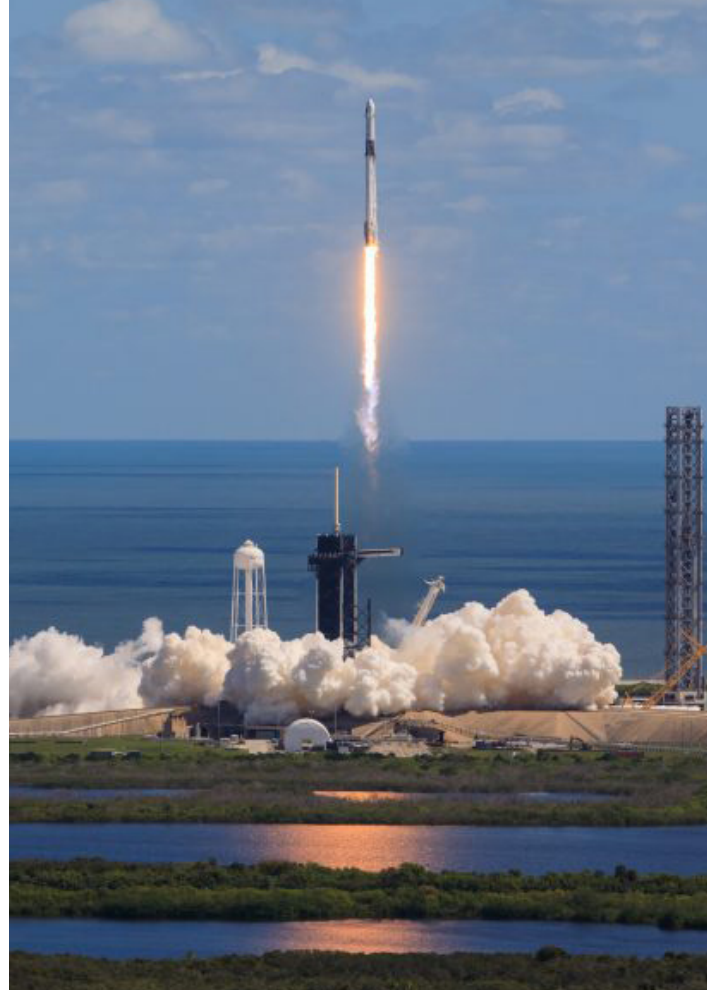
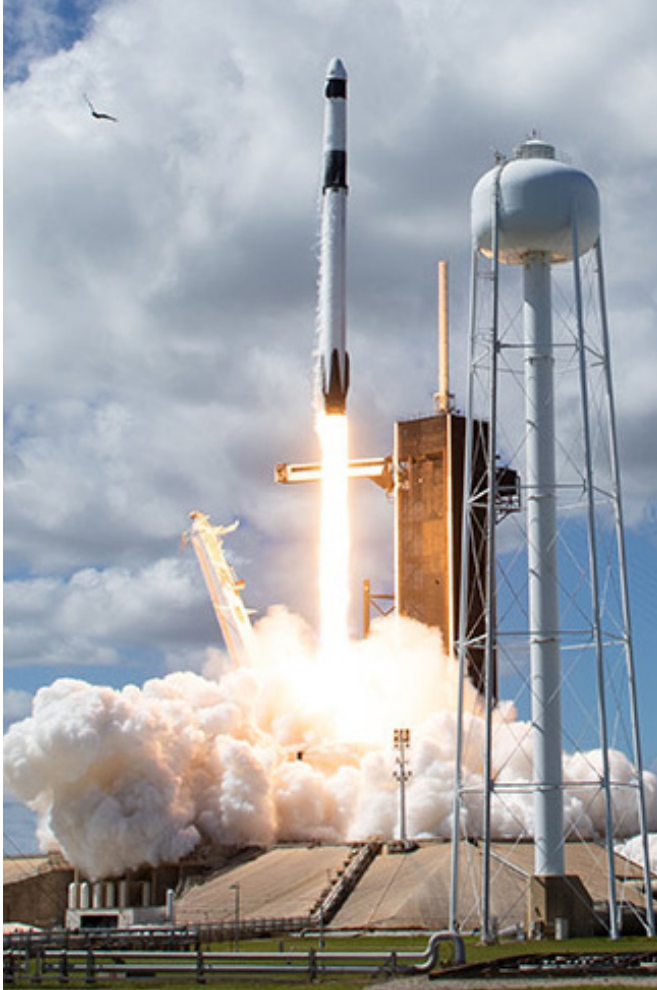
Falcon 9 booster on transporter. Source: Julian Leek / JNN

01

INTRODUCTION

Launch and Landing Facility, Cape Canaveral Spaceport. Source: Space Florida





NASA / SpaceX Crew Dragon, Launch from LC39A, Dragon-5 crew launched in October 2022 for a 6-month mission to the ISS. Source: NASA & SpaceX

PURPOSE OF THE HANDBOOK

The purpose of this handbook is to provide a general overview of the Spaceport Improvement Program (SIP) administered by the Florida Department of Transportation (FDOT) and processes used to fund and manage spaceport capital projects. This handbook describes how potential projects are:

- identified,
- analyzed,
- prioritized,
- and approved for funding.

Once approved and funded, these processes provide guidance to manage projects. The handbook also provides a resource for FDOT Program staff, stakeholders, and aerospace industry partners considering or managing partnerships with FDOT and Space Florida.

When facts or circumstances require additional guidance, interpretation, or potential deviation from this guidance, stakeholders are encouraged to coordinate with the FDOT Spaceport Office or Space Florida, as appropriate, to ensure compliance with applicable laws, rules, procedures, and plans. Points of contact are identified in the Appendix.

BACKGROUND: SPACEPORT IMPROVEMENT PROGRAM

Since the 1950's and the beginning of the US space program, Florida has played a pivotal role in development of the space industry, serving as the primary site for NASA, the US Air Force and, later the US Space Force's space launch infrastructure. Space transportation has had a profound effect on the Florida economy and multimodal transportation system. Though accommodating this national space mission has always been a significant role of FDOT,

FDOT POWERS AND DUTIES:



“To assume the responsibility for coordinating the planning of a safe, viable, and balanced state transportation system serving all regions of the state, and to assure the compatibility of all components, including multimodal facilities.”

—SECTION 334.044(1), FLORIDA STATUTES

“space” itself was not previously considered a separate transportation modality, to be planned and developed by the state. This view began to change as space transportation technology matured and commercial spaceflight growth became a reality.

Launch of the Lunar Prospector on an Athena 2 rocket in January 1998, marked the first ever launch from a Florida commercial site, Spaceport Florida-operated Launch Complex 46 at Cape Canaveral. A site license was issued the previous year by the Federal Aviation Administration (FAA) to Spaceport Florida, a predecessor organization of today's Space Florida.

In 1999, Florida made the landmark decision officially designating space as a transportation mode and spaceports as the associated modal facilities. This designation recognized space in the same manner as other long-established modalities such as roads, rail, airports, and seaports. In 2019, the Florida Department of Transportation established a separate Spaceport Office, aligning spaceports and space transportation with other modalities to help FDOT achieve its primary responsibility.

FDOT and Space Florida work closely together, planning and facilitating space transportation services on spaceport properties throughout the state. The Cape Canaveral Spaceport (CCS) Launch and Landing Facility FAA license was issued in 2018 and the reentry site license was approved in January 2021. Two other locations are also currently FAA licensed -- Cecil Spaceport and the Space Coast Spaceport. These commercial spaceports, coupled with the potential for additional future sites, positions Florida to expand its spaceport system. In addition, Space Florida also continues work on a Programmatic Environmental Assessment approval for potential Balloon Launches at the Cape Canaveral, Ceil Spaceport, and Space Coast Spaceports.

Sites have become available for repurposing to support commercial operations. As a result, Space Florida, in partnership with FDOT, has taken a very active role in planning and funding spaceport infrastructure to support and accelerate this process. This expanding role led to the Spaceport Improvement Program, which has already produced significant partnerships

with commercial space launch and spacecraft operators. Examples include:

- Expanded commercial heavy lift
- Launch vehicle manufacturing in Florida
- High volume Florida satellite production
- Upgraded small launch capability to meet multiple space user needs
- Crewed launches to the International Space Station
- Refurbish Processing Facilities
- Support launch of new Rockets for Human Transportation in Space

These initiatives are integral parts in securing Florida's place as the global leader in space transportation.



Space Life Sciences Lab – Space Florida Headquarters. Source: [Space Florida](#)

PARTNERSHIPS, COORDINATION, AND COLLABORATION

Pursuant to Florida law, state aerospace activities are to be highly visible and well-coordinated. The law (section 331.3011(3), Florida Statutes) specifically designates Space Florida as the single point of contact for state aerospace related activities with federal agencies, the military, state agencies, businesses, and aerospace partners (Figure 1).

As Florida's aerospace industry development authority, Space Florida has broad statutory powers and responsibilities to foster bold economic and spaceport development activities, employing them to expand and diversify domestic and international opportunities that

will grow the industry in Florida. These efforts promote talent development, infrastructure enhancement, while also supporting organizations and various levels of government to improve Florida's competitive business climate. Space Florida achieves this by supporting, facilitating, and consulting on space industry related needs to attract, retain, and expand aerospace partners or related supply chain businesses that create economic opportunities in Florida by::

- Coordinating financial incentives
- Facilitating access to capital
- Providing start up and relocation support

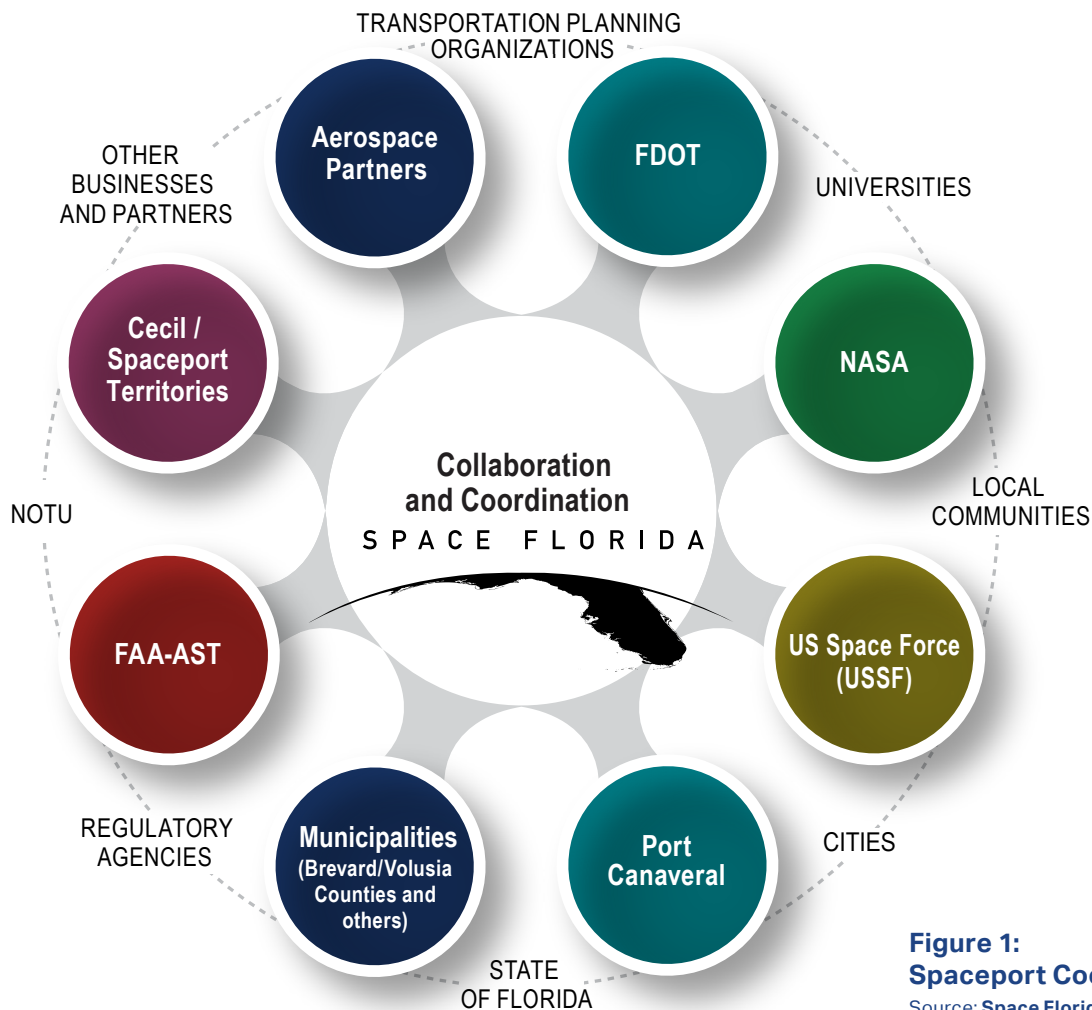


Figure 1:
Spaceport Coordination
Source: Space Florida

- Consulting on business formation, relocation, and venture development
- Developing and operating targeted infrastructure and facilities
- Supporting research and development opportunities that enable targeted industry growth

Space Florida employs a tool kit of statutory authorities to provide the non-federal investment. This remarkable example of how effective Space Florida can be in working with industry to re-capitalize and expand spaceport assets has been achieved through both public and private investments leveraged with the financial risk capital of commercial space providers. These investments advance Florida's leadership in civil, commercial, and military aerospace activity while creating jobs, economic growth, and mitigating the impacts of federal program realignments. Nearly 4,000 high-paying aerospace jobs have been created and an additional 1,200+ jobs will be added through partnerships with industry, federal agencies, and FDOT.

Space Florida's efforts are supported by other state agencies, such as the Florida Department

of Economic Opportunity and FDOT. With the incorporation of spaceports into the Florida Transportation Plan (FTP) and Space Florida's development of the Florida Spaceport System Plan, FDOT provides support and funding to Space Florida for high-priority spaceport projects through the Spaceport Improvement Program. This funding stimulates public and private investment into emerging and growing aerospace enterprises while advancing a safer and more secure spaceport transportation system.

Aerospace partners are eligible public or private entities who consider or request Spaceport Improvement Program funding for a proposed project. These partners include businesses such as SpaceX, United Launch Alliance, Boeing, Blue Origin, OneWeb, Firefly, and others, as well as licensed spaceports such as Cecil Spaceport in Jacksonville. In other cases, the federal government (i.e., NASA/ Kennedy Space Center, the USSF, and the US Navy), may also be considered an aerospace partner. Aerospace partners are integral in the implementation of the processes described in this handbook. In fact, aerospace partners have invested substantial amounts in space-related capital improvements.



LLF midfield development (rendering). Source: Space Florida

02

PROGRAM OVERVIEW

A United Launch Alliance Atlas V rocket with NASA's Mars 2020 Perseverance rover onboard launches from Space Launch Complex 41. Source: NASA



CAPE CANAVERAL SPACEPORT

LEGEND

- Kennedy Space Center
 - Cape Canaveral Air Force Station
 - Space Florida (Property Agreement)
 - Payload Processing Facility or Multi-Function Support Areas
 - Major Roadways
 - Rail
 - Water
- (not all facilities shown)*



SPACE FLORIDA



LIST OF ACRONYMS

C3PF Commercial Crew and Cargo Processing Facility	LPF Large Payload Facility	O & C Operations and Checkout Building
CCAFS Cape Canaveral Air Force Station	MOC Morrell Operations Center	OPF Orbiter Processing Facility 1 & 2
EPF Eastern Processing Facility	MPPF Multi-Payload Processing Facility	PCC Processing Control Center
KSC Kennedy Space Center	NCB North Cargo Berth	PHSF Payload Hazardous Servicing Facility
LC Launch Complex	NOTU Naval Ordnance Test Unit	RLV Reusable Launch Vehicle Hangar
LCC Launch Control Center	NRO National Reconnaissance Office	SLC Space Launch Complex
		SLSL Space Life Sciences Lab
		SSPF Space Station Processing Facility
		SVPOC Space Vehicle Processing & Operations Complex
		SWS Strategic Weapons System
		ULA United Launch Alliance
		VAB Vehicle Assembly Building

THE BASICS

FDOT has significant responsibilities relative to aerospace and spaceports in Florida.¹ Most notably, Florida law establishes a process for incorporating spaceport and aerospace industry-related needs into the FTP and the Strategic Intermodal System (SIS). Florida's SIS consists of the state's largest and most significant commercial service airports, spaceports, roadways, seaports, and freight rail terminals. Incorporating space- and aerospace-related needs into the FTP and the SIS is a significant commitment by the state to support a major sector of Florida's economy.

The Spaceport Improvement Program was created to implement the aerospace and spaceport goals and objectives set out in the FTP and SIS. It also implements the goals and objectives established in the Florida Spaceport System Plan and the master plans of individual spaceports.

Florida law places several aerospace and spaceport responsibilities on FDOT and incorporates them into the Spaceport Improvement Program. Most notably, the Program provides technical assistance and funding for projects that:

- Improve aerospace transportation facilities;
- Encourage coordination between airports and spaceports;
- Foster interagency efforts to improve space transportation capacity and efficiency

To implement state law and FTP/SIS goals and objectives, FDOT collaborates with Space Florida. Recent examples of the Program's partnership includes:

- Providing funds to Space Florida for refurbishing Launch Complex 39A, (historic Apollo and Shuttle launch pad) and Launch Complex 36 for heavy lift commercial launches
- Supporting Space Florida's efforts to obtain FAA commercial launch site operators licenses and reentry site licenses for the Launch and Landing Facility at the Cape Canaveral Spaceport
- Providing Space Florida with engineering and technical expertise for facility assessments and infrastructure development of the Launch and Landing Facility, Exploration Park, Cecil Spaceport and Statewide Telemetry Studies, Space Launch Complex 46, solid propellant processing areas, and future launch pad sites



LC36, the "Road to Space"; Source: Blue Origin

¹See Sections 331.3051, 331.360, 334.044, and 339.362, Florida Statutes

For the period 2019 – 2028, program funding has been dedicated to capital improvements. Through 2028, approximately \$600 million is programmed in the 5-Year Work Program for SIP projects. However, this is not a guarantee of future funding. For the same period, more than 93 percent of the program funds are used for actual capital improvements and the remaining 7 percent is used to support program implementation (Figure 2).

The work program is updated annually to account for changes in FDOT revenue, the statewide approval, and many other factors.

Therefore, the actual funding level is subject to change. Most importantly, the five-year funding allocation demonstrates Florida’s ongoing commitment to invest in the state’s growing spaceport transportation system.

One challenge for FDOT is to identify, balance, and incorporate the various regulatory and economic aspects of the evolving commercial space market and activities with its mission to provide a safe and secure transportation system.

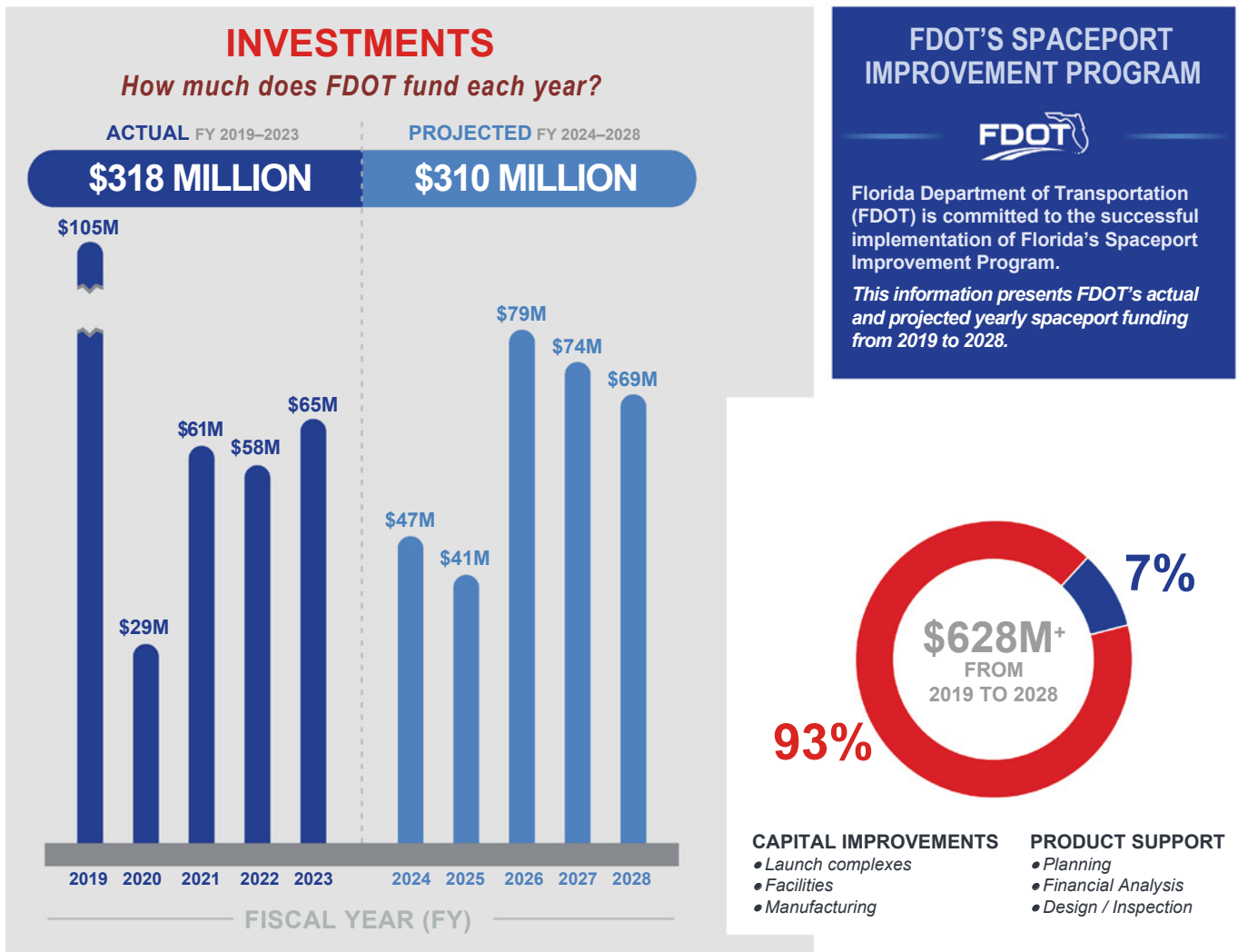


Figure 2: Spaceport Investments and Improvements Funding

KEY POINTS

Before beginning any discussion on the project development process, stakeholders must be aware of challenges and limitations when funding spaceport capital projects. For example, Florida has a broad public records law and aerospace partners may not be aware of specific requirements pertaining to the release of information. FDOT capital funding is limited to designated areas called spaceport territories, and infrastructure ownership and responsibilities at Cape Canaveral Spaceport require coordination with our federal partners (i.e., NASA/Kennedy Space Center, the USAF, the Navy, the National Park Service, and the U.S. Fish and Wildlife Service).

PUBLIC RECORDS AND PROPRIETARY INFORMATION

Florida's broad public records law is governed by Florida Statutes (FS), Chapter 119. Frequently,

spaceport projects involve sensitive or proprietary information from aerospace partners that could fall under the public record law as part of a contract or project funding agreement. Care must be taken from the beginning of the process to ensure that all public information is made available, and that sensitive or proprietary information is not improperly disclosed.

SINGLE AUDIT ACT REQUIREMENTS

In accordance with the requirements of Section 215.97(2)(a), Florida Statutes, **each non-state entity that expends a total amount of state financial assistance equal to or in excess of \$750,000 in any fiscal year shall be required to have a state single audit**, or a project-specific audit, for such fiscal year. Essentially, this means project-related financial records are public records and audited as part of the project.



New Cecil Control Tower, Cecil Spaceport Source: Cecil Spaceport

SPACEPORT TERRITORIES

Space Florida's ability to develop spaceport infrastructure is statutorily limited to geographic areas called spaceport territories pursuant to Section 331.304, Florida Statutes. Florida's Spaceport Territories are illustrated in Figure 3.

INFRASTRUCTURE OWNERSHIP AND RESPONSIBILITY

NASA and the USAF are the primary property owners of the Kennedy Space Center and the Cape Canaveral Space Force Station, respectively. The State of Florida retains title to more than 55,000 acres dedicated to the U.S. government's use for the nation's space program. Land and existing spaceport infrastructure are licensed, leased, or otherwise granted, to Space Florida or aerospace partners by NASA and the USAF. Both Space Florida and aerospace partners may construct and own new infrastructure on federal land but, in doing so, assume responsibility for the site and

infrastructure under their control. Spaceport infrastructure that may be developed in other spaceport territories will be under the ownership and responsibility of the operating authority (e.g. Jacksonville Aviation Authority for Cecil Spaceport) or its aerospace partners.

As Florida's statewide spaceport development authority, Space Florida is tasked to support the continuing NASA and the USAF missions while facilitating the growth of Florida's commercial space sector. Responsibility for specific space facilities at Cape Canaveral Spaceport varies between Space Florida, aerospace partners, and lease agreements with NASA and the USAF. Ownership, lease arrangements, and responsibility for spaceport infrastructure may also vary for the remaining spaceport territories, depending on contractual agreements with the spaceports, Space Florida, and future aerospace partners.



SpaceX Crew Dragon at Liftoff. Source: AmericaSpace

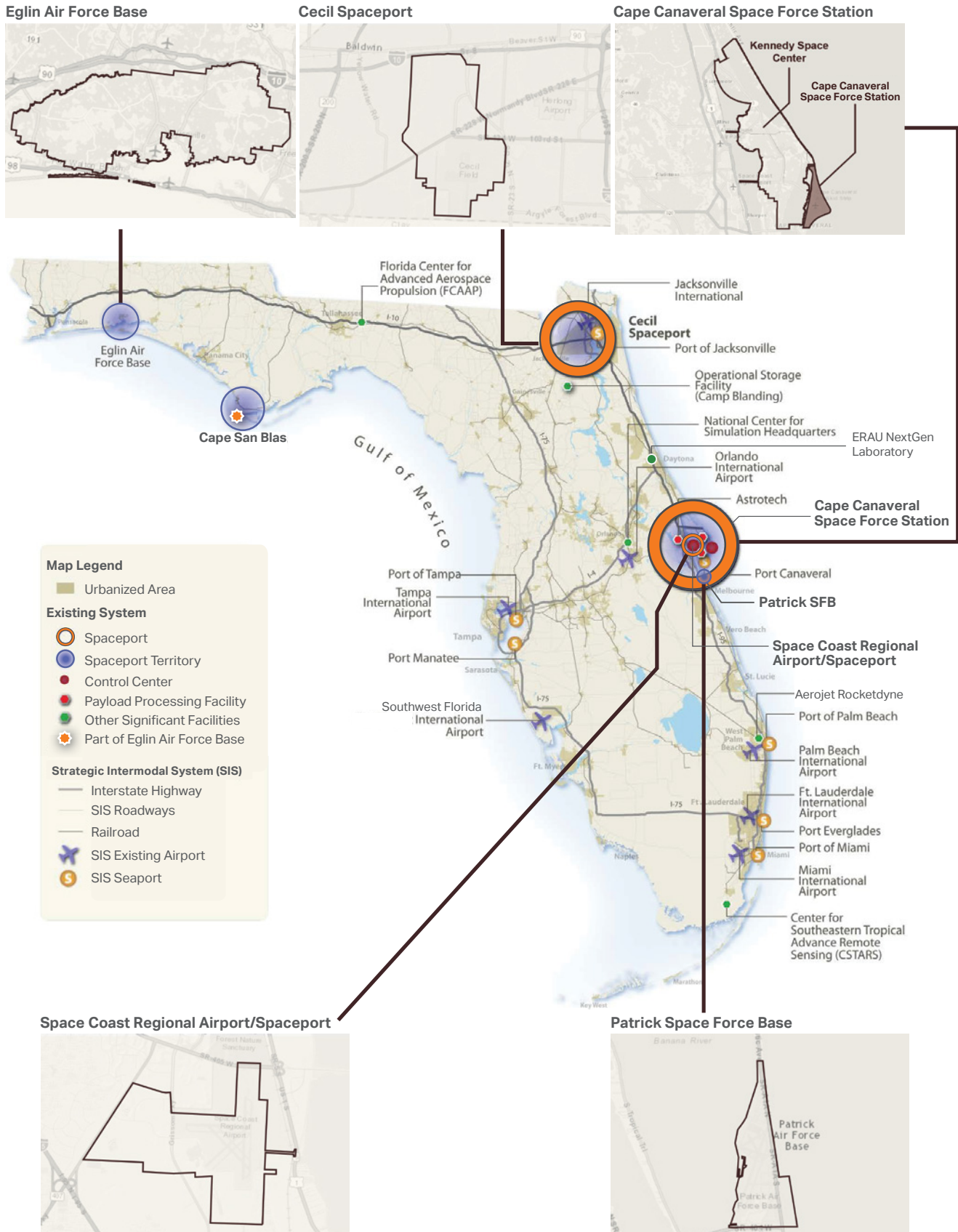


Figure 3



ULA



Vulcan Certification SLC 41. Source: ULA

03

PROGRAM MANAGEMENT

Kennedy Space Center Visitor Complex; Source: NASA



Source: NASA

PROJECT DEVELOPMENT

One of the nationally recognized features of the Spaceport Improvement Program is the use of FDOT funds for spaceport transportation planning, development, and capital improvements.² These funds have been successfully used to attract aerospace partner investment, turning Cape Canaveral Spaceport into a one-of-a-kind spaceport that has evolved into the center of global space commerce. The use of FDOT funds clearly demonstrates Florida’s strong commitment to aerospace partners, with an average of about \$60 million designated annually in FDOT’s 5-year Capital Improvement Plan.

To move projects from initial concept to implementation, FDOT and Space Florida have developed, and continue to refine, three phases to identify, allocate, and manage Spaceport Improvement Program funds for capital projects:

- Project identification and funding authorization
- Space Florida’s project analysis and approval
- Project funding and management

The three phases are illustrated in Figure 4 and discussed in more detail in subsequent sections.

²Planning projects are developed and managed like Spaceport infrastructure projects. However, planning projects are for Spaceport System’s program and project development process. They do not go through the “call-for-projects” process.

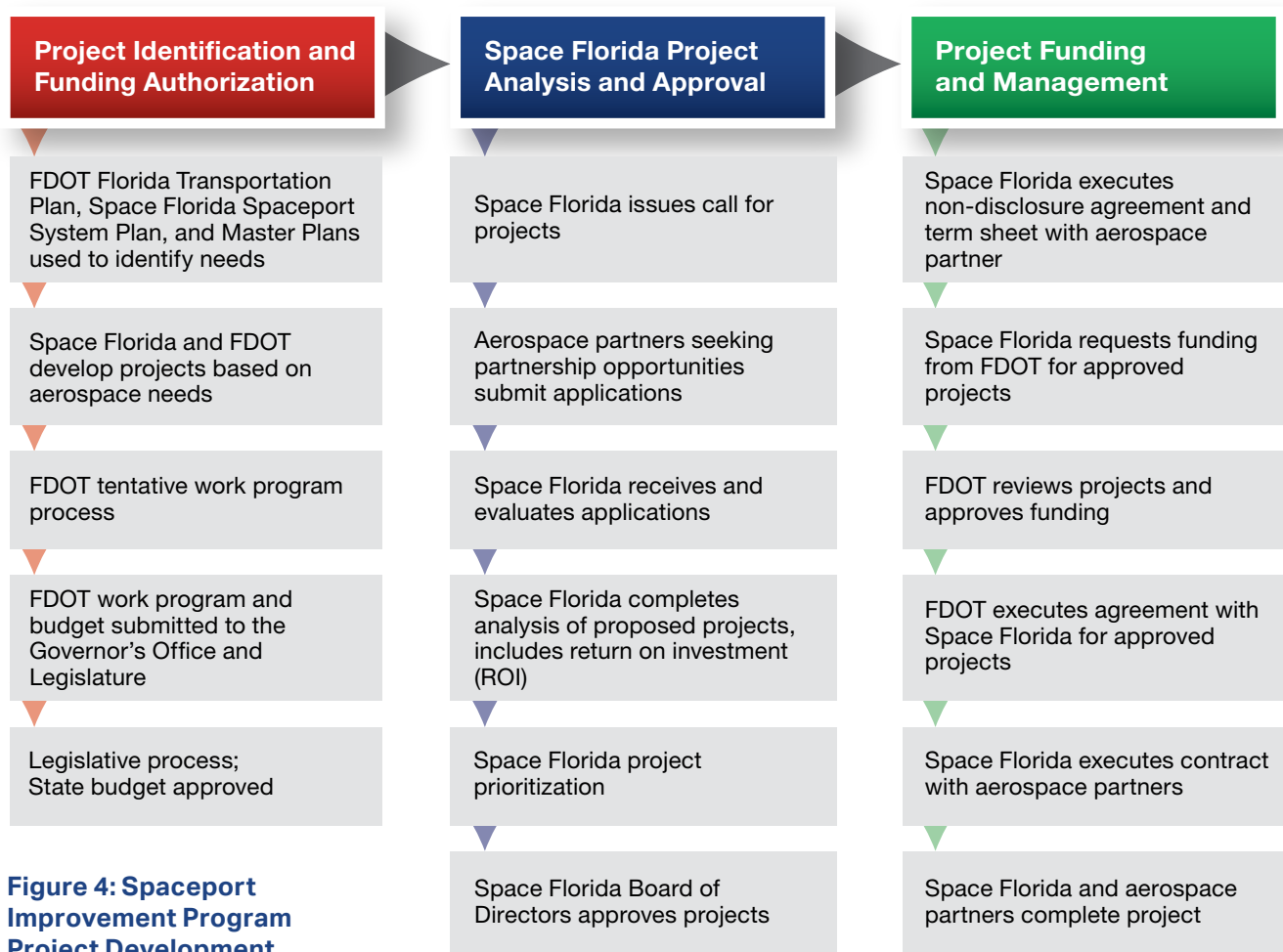


Figure 4: Spaceport Improvement Program Project Development

PROJECT IDENTIFICATION AND FUNDING AUTHORIZATION

This phase establishes the specific needs of aerospace partners and individual spaceports in the Florida Transportation Plan (FTP), the Florida Spaceport System Plan, and the various spaceport master plans. Project-related needs are identified by Space Florida through these sources and communicated to FDOT. Once needs are identified, FDOT includes the projects in the Five-Year Tentative Work Program and submits the plan to the Office of the Governor and the Florida Legislature for review and approval, as part of the state budget process.

FLORIDA TRANSPORTATION PLAN

Space was designated as a mode of transportation by Florida law in 1999, giving FDOT significant responsibilities related to aerospace and spaceports in Florida.

Florida law also establishes a process for incorporating spaceport and aerospace industry-related needs into the Florida Transportation Plan and the Strategic Intermodal System (SIS), the primary drivers for delivering state transportation products in Florida.

The FTP provides a policy framework for the allocation of FDOT funding and is used to satisfy the long-term transportation needs of residents, businesses, and tourists. The FTP identifies goals, objectives, and addresses the needs of the entire state transportation system. A stated FTP goal is to strengthen coordination among all modal partners such as seaports, airports, spaceports, railroads, transit.

The SIS is a statewide system of transportation facilities that have a critical role in moving people



SpaceX Reuseable Booster Arrives in Port Canaveral after Flight and Recovery. Source: Space Florida

and goods to and from other states and nations, as well as between economic regions within Florida. The SIS serves as the state’s highest priority for statewide mobility. Incorporating space and aerospace-related needs into the FTP and the SIS reflects a significant commitment by the state to support this major sector of Florida’s economy.

FLORIDA SPACEPORT SYSTEM PLAN

Space Florida is required by state law to “develop a spaceport master plan for the expansion and modernization of space transportation facilities within spaceport territories”. The Florida Spaceport System Plan was adopted in 2013 and updated in 2018, incorporating the individual spaceport master plans across the state, including the Cape Canaveral Spaceport Master Plan and the Cecil Spaceport Master Plan (Figure 5). The Florida Spaceport System Plan is consistent with and considered a supporting document to the FTP and SIS. In conjunction with the Florida Spaceport System Plan, Space Florida maintains a list of recommended capital projects eligible to be funded through FDOT. Each year, the project list is updated based on new project funding applications and unfunded

FLORIDA SPACEPORT SYSTEM PLAN GOALS:

- Create a stronger economy where Florida’s spaceports and aerospace businesses can thrive
- Guide public and private investment into emerging and growing aerospace enterprises and maximize the use of existing aerospace resources
- Enrich our quality of life while providing responsible environmental stewardship
- Advance a safer and secure spaceport transportation system for residents, businesses, and others

projects from the previous year. Coordination between FDOT, Space Florida, and Florida spaceports maximizes the use of state funds, enabling Florida’s spaceport system to improve and accommodate future needs.

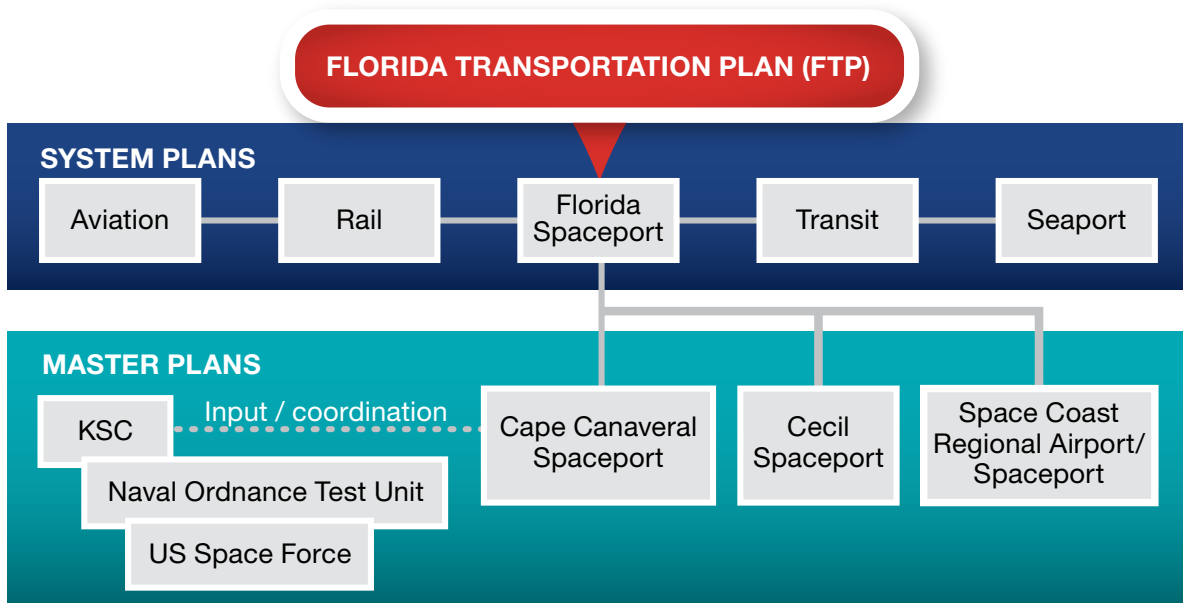


Figure 5: Florida Spaceport System Plan

SOURCES OF SPACEPORT IMPROVEMENT PROGRAM FUNDS

The SIS was established to enhance Florida's mobility and economic competitiveness. It is made up of facilities of statewide and interregional significance.

The Spaceport Improvement Program receives FDOT funds in two ways. First, a specific allocation is made to the SIP as part of a base allocation. Second, funding is allocated through FDOT's Strategic Intermodal System (Figure 6).

Together, these funds help sustain the most progressive and expansive spaceport system in the world. This handbook provides information only on the Spaceport Improvement Program and does not include information on federal, local, or other state funding sources. Further, the SIP does not include a federal contribution or state aviation fuel tax funds.³ Although the background, eligibility requirements, and project prioritization processes differ between the two funding sources, the three processes used to identify, approve, and manage projects are identical.

Spaceport funds are allocated annually to the FDOT Central office and distribution is coordinated by the Spaceport Office. As detailed in this handbook, the Spaceport Office collaborates closely with Space Florida and FDOT District offices to effectively evaluate funding requests, allocate funds to projects, and manage project delivery.

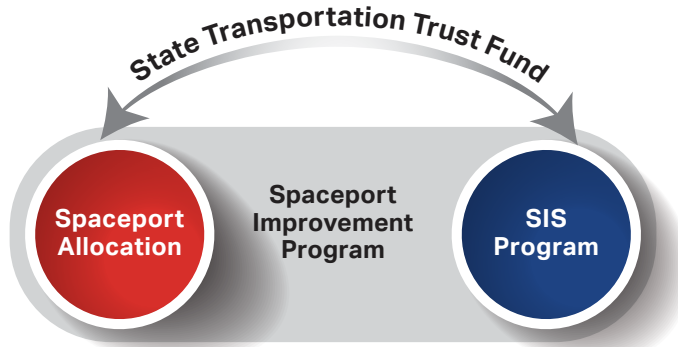
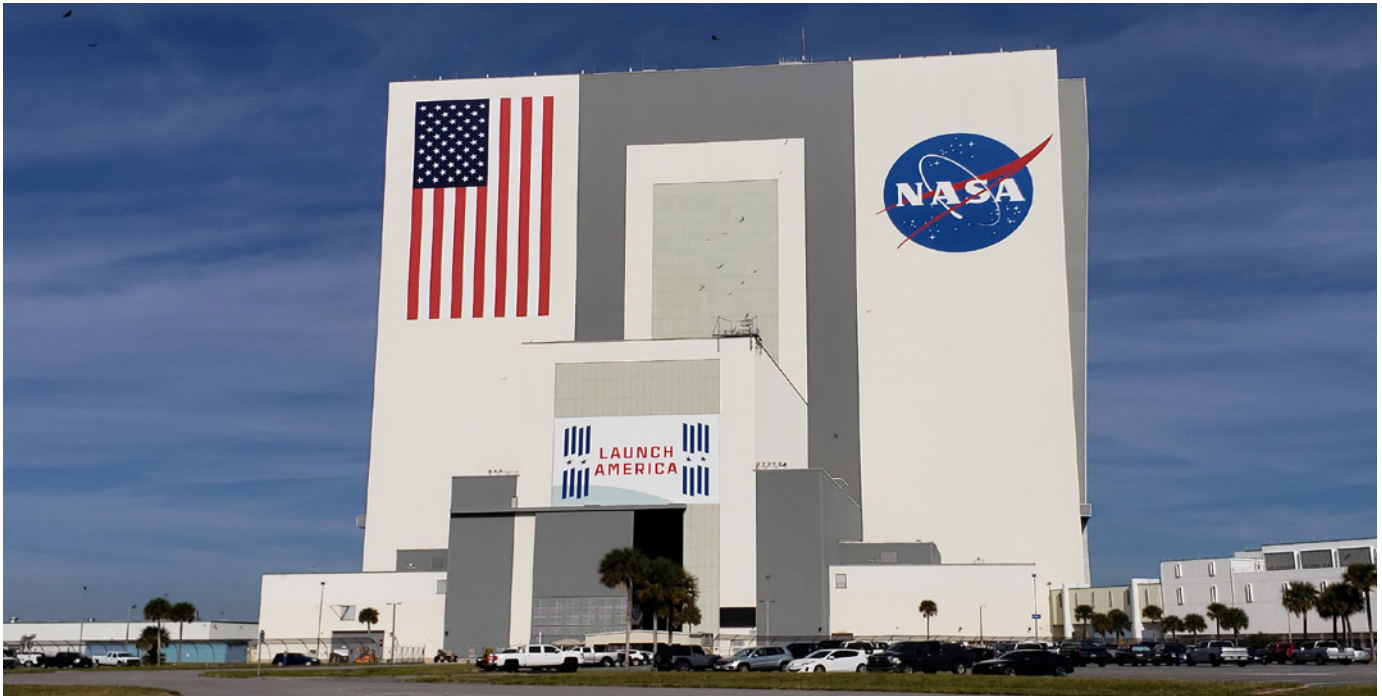


Figure 6: Spaceport Improvement Program Funding

³Section 332.009, Florida Statutes, prohibits the use of aviation fuel tax revenues on space transportation projects.



NASA Vehicle Assembly Building

TENTATIVE AND ADOPTED WORK PROGRAMS

Section 331.360, Florida Statutes, directs FDOT to coordinate in the development of spaceports and related transportation facilities, encourage coordination between airports and spaceports, and foster interagency efforts to improve space transportation capacity and efficiency. The law also authorizes FDOT to provide technical assistance and funding to Space Florida for transportation-related capital improvements to Florida space transportation facilities.

Space Florida developed the Florida Spaceport System Plan in 2013 and revised it in 2018. The Plan satisfies the statutory direction to develop a statewide master plan for expansion and modernization of space transportation facilities within Florida's designated spaceport territories. The 2018 Plan⁷ integrates Space Florida's Cape Canaveral Spaceport Master Plan (2017) and the Jacksonville Aviation Authority's Cecil Spaceport Master Plan (2012).

In the future, the Florida Spaceport System Plan will also incorporate individual spaceport plans prepared by other operating authorities. Space Florida submits the plan to FDOT for funding, subject to the availability of funds. After review and approval, the Spaceports Office submits approved projects to the appropriate FDOT District for inclusion in the District Tentative

Work Program. The list of projects is subject to a public hearing before the Metropolitan Planning Organization (MPO) within the District. Following submission of the District Tentative Work Program to the Central office, FDOT develops the statewide Tentative Work Program.

The FDOT Tentative Work Program is submitted to the Governor and the Legislature no later than 14 days after the regular legislative session begins.

During the legislative session, FDOT's budget is finalized as part of the overall state budget. Once the budget is passed by the Florida Legislature, spaceport project priorities may be adjusted to account for the approved final funding amounts.

Such adjustments are legally authorized and intended to discourage the process of legislatively adding specific projects in the appropriations bill. The law states: *"the adopted work program... may include only those projects submitted as part of the tentative work program developed under subsection (4), plus any projects that are separately identified by specific appropriation in the General Appropriations Act... However, any FDOT transportation project which is identified by specific appropriation in the General Appropriations Act shall be deducted from the funds annually distributed to the respective district."*



Blue Origin Manufacturing Complex. Source: Blue Origin

The new state budget takes effect on July 1, which is the first day of each fiscal year. The Secretary of FDOT adopts the work program, which authorizes FDOT to participate in funding approved spaceport transportation projects.

SPACE FLORIDA PROJECT ANALYSIS AND APPROVAL

PROJECT SUBMITTALS, ANALYSIS, AND PRIORITIZATION

Once each year, Space Florida solicits aerospace partner interest in spaceport partnership opportunities through a “Call for Projects” process. Interested aerospace partners submit project applications,⁴ which then compete for Spaceport Improvement Program funding.

Requests for spaceport capital funds must be submitted to Space Florida for review and prioritization.

⁴An example application is available on Space Florida’s website: <http://www.spaceflorida.gov/page/call-for-projects/>

The addition of a new spaceport project, not included in the Tentative Work Program, would likely reduce the funding available for requested projects and could impact funding for projects already approved and underway!

Earmarks are subject to being vetoed by the Governor and could affect a project’s future funding.

Initially, Space Florida separates space transportation capital projects from non-transportation projects, such as manufacturing, research, workforce development, and education. FDOT funding can only be used for transportation projects, such as launch and re-entry or payload processing facilities.

Space Florida then develops a proposed list, for submission to FDOT, of spaceport capital projects from qualified applications.



Indian River Bridge Reconstruction (03/30/23). Source: Space Florida

**AT A MINIMUM,
PROPOSED PROJECTS MUST:**

- Be on spaceport territory property
- Be included in an approved spaceport master plan
- Have or be likely to obtain appropriate licenses, permits, and leases
- Satisfy the eligibility requirements in section 331.303(21), Florida Statutes¹
- Have an aerospace partner match

¹ Section 331.303(21), Florida Statutes, relates to project funding eligibility and states, "capacity improvements that enhance space transportation capacity at spaceports that have had one or more orbital or suborbital flights during the previous calendar year or have an agreement in writing for installation of one or more regularly scheduled orbital or suborbital flights upon the commitment of funds for stipulated spaceport capital improvements."

Although Space Florida only issues a formal Call for Projects once a year, it accepts applications on a continuous basis. Space Florida examines each application to determine whether projects also qualify for other funding programs. Proposed projects are evaluated according to metrics derived in accordance with existing spaceport system and master plans, then prioritized for funding. Project justification, economic benefits, state benefits, project cost level of requested funding, proposed project schedule, launch date, and other economic development related data are carefully considered to maximize the use of state funds. (Figure 7).

FDOT emphasizes the Return-on-Investment (ROI) the state expects to realize by contributing funds toward modal transportation projects.

Space Florida performs an economic or financial analysis on spaceport capital projects before requesting FDOT funds. In most cases, the information Space Florida requires to conduct this analysis is provided in the project application. If not, relevant additional information is requested from the applicant.



COLLECT PROJECTS
(February – April)

- Call for projects
- Hold public/applicant workshop
- Receive applications



QUALIFY
(April)

- Review project applications
- Categorize
- Determine benefits to the state
- Return on investment



PRIORITIZE
(May)

- Perform initial prioritization
- Assess alignment with Space Florida goals/objectives
- Classify projects based on capital investment and job growth



ALLOCATE
(May – June)

- Identify projects and allocations for approved projects
- Compare to available funding sources
- Strategically invest in Florida

Figure 7: Space Florida’s Project Analysis / Prioritization Process

Note: Dates are typical but may vary.

Space Florida prepares an annual list of eligible projects for inclusion in the Spaceport System Plan or master plans, as appropriate. The Space Florida Board of Directors approves the list and each prioritized project prior to entering into agreements with FDOT and the applicant..

PROJECT FUNDING AND MANAGEMENT

Under the Spaceport Improvement Program, Space Florida submits to FDOT Board-approved funding requests for capital projects. The Spaceport Office reviews each request and determines whether to provide funding for the project.

Each request includes a project budget summary reflecting requested state funding match, proposed partner investment, a project schedule, and other required financial information needed to evaluate the request. Each funding request may include

- Nominal Internal Rate of Return (IRR); Return on Investment (ROI)
- Benefit-Cost Analysis (BCA)
- Economic benefits of the project
- Project readiness
- Long-term customer commitment
- Narrative summarizing project analysis, justification, and the financial and economic basis for requesting state funding participation.



Sea Launch Platform Concept. Source: The Spaceport Company

FDOT evaluates each funding request based on consistency with the FTP and SIS, benefits to the state, and capital investment.

FDOT also considers the aerospace partner's current Spaceport Improvement Program commitments and their record to draw-down previously awarded project funds. It is important that SIP funds are properly managed and expeditiously used.

JOINT PARTICIPATION AGREEMENTS

The Joint Participation Agreement (JPA) is the primary contract mechanism used to fund spaceport projects, as authorized by Section 331.360, Florida Statutes.

Essentially, a JPA is a contract between FDOT and Space Florida in which FDOT agrees to reimburse Space Florida for eligible project costs. Key provisions in the JPA include:

- Scope of work
- Quantifiable deliverables
- Budget
- Schedule
- Invoicing requirements
- Method of compensation
- Accounting practices
- Records management requirements
- Public information requirements
- Single audit act requirements
- Other terms and conditions

JPAs are processed in accordance with the FDOT Contract Funds Management Funds Approval, Procedure Topic No. 350-020-200 and the Department of Financial Services Reference Guide for State Expenditures.

On most projects, Space Florida will opt to have a third party perform the work. The scope

of work for third party agreements should be consistent with the JPA and reviewed by FDOT prior to execution by Space Florida

PROJECT TYPES

PLANNING VERSUS CAPITAL PROJECTS

Every spaceport project has a unique context, goals, program needs, and requirements, so a determination of the eligibility of specific projects is made during the early stages of a project. Spaceport projects fall into two primary categories: spaceport planning projects and spaceport capital projects. Specific types of projects may include project planning, land mitigation, processing facilities, utilities, safety improvements, and launch facilities.

SPACEPORT PLANNING PROJECTS

Spaceport planning projects identify aerospace needs and guide the development of future spaceport capital projects. Through the Spaceport Improvement Program, FDOT may provide up to 100 percent funding assistance to Space Florida for spaceport planning and project development. Space Florida must provide FDOT a scope of work and proper cost estimate prior to committing funds for a planning project. If another entity, such as a consultant, is expected to perform the work, a third-party agreement must be provided in advance of committing Program funds.

The Spaceport Improvement Program has funded several planning projects, including:

- **Florida Spaceport System Plan (2018).** Defines the statewide spaceport system, develops statewide spaceport policies and processes, and priorities
- **Cape Canaveral Spaceport Complex Master Plan 2013.** Guides capital development and investment at Cape Canaveral Spaceport

- **Cape Canaveral Spaceport Master Plan 2017.** Updated the 2013 plan based on new strategic vision and dynamic changes in space transportation technologies, business models, and markets
- **Kennedy Space Center Strategic Framework.** Prepared a strategic framework for future development concept alternatives at Kennedy Space Center
- **Special Studies.** Examines topics of special interest, such as enhanced weather forecasting capabilities at horizontal launch and recovery facilities and assessments of legacy federal facilities for potential use by aerospace partners

EXAMPLES OF PLANNING PROJECTS ELIGIBLE FOR FUNDING

The purpose of spaceport planning is to lay the groundwork for the development of future spaceport infrastructure and aerospace economic development while protecting the public, the environment, and the cultural resources of the state.

- Spaceport System Plan
- Spaceport master plans
- Environmental Assessments (EAs)
- Environmental Impact Statements (EISs)
- Economic impact studies
- Master drainage plans
- Noise studies
- Launch site or launch vehicle licensing
- Program and project support
- Spaceport facility and feasibility assessments
- Siting studies

SPACEPORT CAPITAL PROJECTS

The purpose of capital improvement projects is to provide for capital facilities and equipment at spaceports. These improvements are generally specified and supported in masterplans or by project plans. Capital projects eligible for funding through the Spaceport Improvement Program include:

- Launch and re-entry facilities
- Vehicle/spacecraft/payload final assembly, integration and processing facilities
- Other landside projects (parking lots, structures, launch control facilities, etc.)
- Specialized equipment, control facilities, clean rooms to support launch
- Safety and security projects

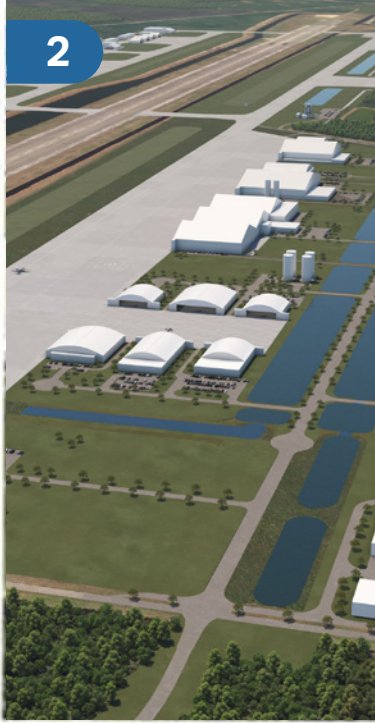
Some capital projects are considered “common use” and support multiple users as needed:

- Taxiways/aprons/runways
- Range facilities
- Utilities
- Fuel farms



Rendering of a Balloon Launch.

Source: Space Perspective



The following projects are examples of FDOT-funded capital projects:

- 1. Blue Origin – Composites Assembly Facility.**
Supports heavy lift launch and operations for customer payloads.
- 2. Space Florida – Spaceport Launch and Landing Facility.**
Creates space logistics hub for horizontal launch and landing.
- 3. SpaceX – Launch Complex 39.**
Expands Space Launch Vehicle Systems and supports New Starship (Human Transportation in Space).
- 4. Cecil Spaceport – Enables Commercial Launch, completion of Spaceport Hangar and Utility Corridor.**
- 5. Area 57 - Refurbishment processing facilities for medium vehicles at Cape Canaveral Spaceport**

This list is not exhaustive, and some potentially eligible projects may not fall precisely into these categories. Further, not all projects that fall into these categories are guaranteed funding. FDOT has the responsibility for making the final determination on the eligibility of each project.⁵

⁵ Section 331.303(21), Florida Statutes, relates to project funding eligibility and states, "capacity improvements that enhance space transportation capacity at spaceports that have had one or more orbital or suborbital flights during the previous calendar year or have an agreement in writing for installation of one or more regularly scheduled orbital or suborbital flights upon the commitment of funds for stipulated spaceport capital improvements."

FDOT FUNDING FOR CAPITAL PROJECTS

A key component of developing a JPA is FDOT's level of funding participation toward a project.

Although Section 331.360, Florida Statutes, does not specify project funding shares, FDOT policy is to provide up to 50 percent of eligible project costs for spaceport capital projects. The remainder must be provided by others, such as Space Florida, licensed spaceports, or other aerospace partners. This policy was developed to:

- Be consistent with the funding participation rates of other FDOT modal programs, i.e., SIS, seaports, and rail
- Maximize the use of state funds
- Ensure aerospace partners have a substantial and vested interest in the projects

For some projects, there may be overlap between the Spaceport Improvement Program and FDOT's Airport Improvement Program. For example, airport runways, taxiways, and aprons may be used by both space vehicles and aircraft and could be eligible for funding under both programs. In cases where such overlap exists,

requests to fund space-related projects through the FDOT's Airport Improvement Program, or other similar programs, are handled as follows:

For a project that is predominately aviation related, but has some limited space-related application or function, normal Airport Improvement Program funding shares apply.

A project that is predominately space related is not eligible for funding under the Airport Improvement Program. FDOT funding for spaceport-related projects is provided under the Spaceport Improvement Program. Examples of predominately space-related projects include:

- Fuel farms for spacecraft – hazardous fuels
- Launch control centers
- Range safety infrastructure
- Projects exceeding FAA design standards to accommodate spaceport operations

In 2014, section 331.371, Florida Statutes, was enacted to address strategic spaceport investments. The law authorizes FDOT, in consultation with Space Florida, to fund up to 100 percent of a project at strategic spaceport



Blue Origin Transporter. Source: [Blue Origin](#)

launch support facilities if the following criteria have been met:

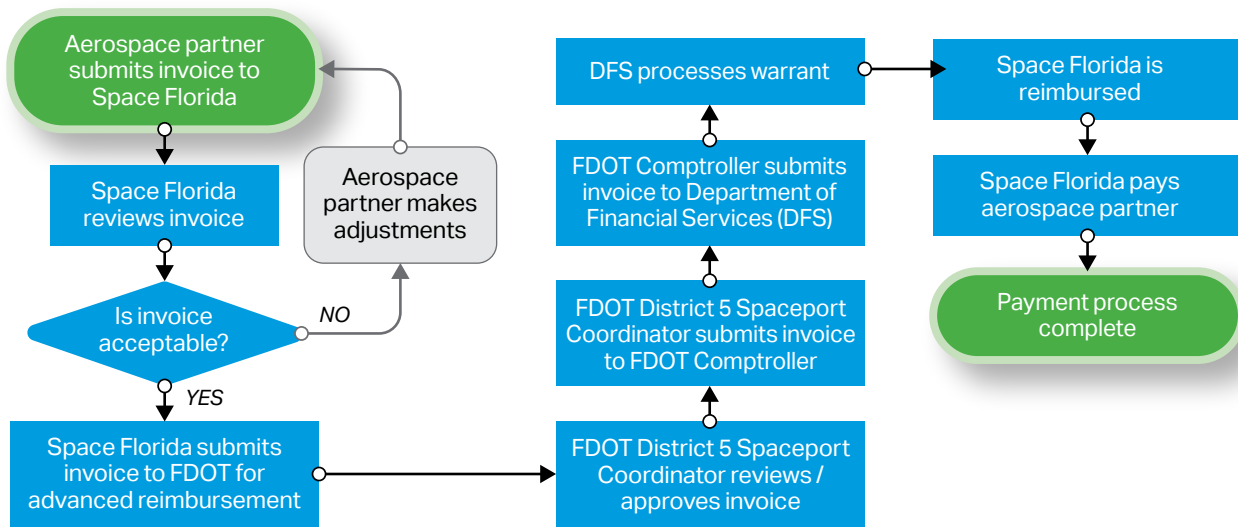
- Important access and on-spaceport and commercial launch facility capacity improvements are provided
- Capital improvements that strategically position the state to maximize opportunities in international trade are achieved
- Goals of an integrated intermodal transportation system for Florida are achieved
- Feasibility and availability of matching funds through federal, local, or private partners are demonstrated

Finally, section 331.360, Florida Statutes, prohibits FDOT from funding Space Florida’s operational and administrative costs. FDOT interprets operational and administrative costs as those costs related to Space Florida’s

operation as an organization. Spaceport Program and project-related costs are not considered part of Space Florida’s operations or administration and are eligible for FDOT funding.

INVOICING AND PAYMENT FOR CAPITAL IMPROVEMENT PROJECTS

As noted under the JPA section, FDOT reimburses Space Florida for eligible project costs (Figure 8 explains this process). This ensures that Spaceport Improvement Program funds are properly used. Under this system, the aerospace partner incurs the cost, submits an invoice, and is then reimbursed by Space Florida. Space Florida then submits a request to FDOT for reimbursement of the expenditures. It is in the aerospace partner’s interest that Space Florida and FDOT’s invoice and reimbursement process functions smoothly and in a timely manner. For large Capital projects, Space Florida may request reimbursement from FDOT before it



Space Florida Financial Tracker Grant Payment Coordination

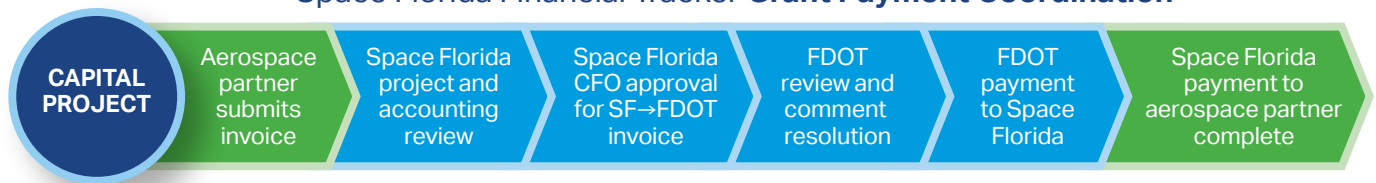


Figure 8: Invoicing and Reimbursement Process

reimburses the aerospace partner after payment is received from the Department of Financial Services.

The invoicing process begins when the aerospace partner incurs costs associated with the spaceport project, as per the conditions of the JPA. The aerospace partner then submits the invoice to Space Florida for review and payment. If Space Florida does not identify any changes to the invoice, it is approved and paid. Space Florida then submits the paid invoice and supporting documentation to the project manager at the FDOT District office for reimbursement. The FDOT District will review the invoice for:

- Completeness
- Accuracy
- Compliance with the Grant Agreement contract conditions
- Progress
- Deliverables
- Consistency with field reviews
- Eligibility of expense line items

Per standard language in the JPA, FDOT staff has 20 days to either approve or reject the invoice. Approved invoices must be paid by the Department of Financial Services within 40 days of submittal to the district. When approved, FDOT reimburses Space Florida for the prior payment made to the aerospace partner. If an invoice is rejected, the process starts over when the corrected invoice is resubmitted.

It is in the aerospace partner's interest that Space Florida and FDOT's invoice review and reimbursement processes function smoothly and in a timely manner. Invoices need to be submitted in good form as soon as possible after the expense was realized to ensure proper accounting and timely reimbursement

There are two important points to reinforce regarding the reimbursement process:

- Only eligible expenses incurred during the contract period may be reimbursed. Invoices containing costs incurred before the execution of the contract or after the expiration of the contract are not eligible for reimbursement.
- Only eligible expenses are subject to reimbursement. Invoices containing ineligible expenses will be rejected. Eligibility of any specific cost is ultimately dictated by state law, FDOT policy, and the terms of the JPA. Typical eligible and ineligible expenses appear below, in Figure 9.

TYPICAL ELIGIBLE EXPENSES:

Design/studies

Demolition/site work

Direct construction costs

- Labor
- Materials
- Equipment rental

Capital equipment purchases:

- Will transfer with project delivery
- If agreed to in advance by FDOT and Space Florida

Permits

Consultant support

TYPICAL INELIGIBLE EXPENSES:

Maintenance costs

Operational costs

Food, travel, and lodging are usually ineligible, but dependent on the contract.

Non-capital equipment purchases will not transfer with delivery of the project:

- Tools
- Clothing

Figure 9: Typical Expenses



Crew Dragon ready for launch; the SIP funded the crew access arm seen in the photo. Source: SpaceX

To ensure timely reimbursement of expenses, questions should be addressed to Space Florida or the FDOT District project manager before submitting the invoice.

SAFEGUARDING THE STATE'S INVESTMENT

FDOT and Space Florida make every effort to ensure the state's investment is protected and benefits are realized. FDOT and Space Florida work together to maximize the return on investment for all spaceport capital projects.

PROJECT MONITORING AND INSPECTION

Space Florida and FDOT strive to ensure projects are delivered in accordance with the Grant Agreement. **Both Space Florida and FDOT routinely review and monitor projects to ensure accountability and performance objectives are met.** Progress reports and management review of specific deliverables are accomplished periodically with the aerospace partners.

Representatives of Space Florida and FDOT District staff may attend pre-construction and project status meetings with the aerospace partner and contractor team. Regular field visits to the project site are also conducted by staff or their representative to verify:

- The conditions of the Grant Agreement are being met
- Progress is being reported accurately
- The work being performed is consistent with the scope of work

To help ensure a safe, productive, and timely field visit, these reviews are coordinated ahead of time with Space Florida, the aerospace partner, and contractor team, as appropriate.

SPACEPORT IMPROVEMENT PROGRAM SUSTAINABILITY

The Spaceport Improvement Program provides funding and technical support to Space Florida for aerospace transportation–related capital improvements. Priorities are based on the Florida Spaceport System Plan, which reflects a sustainability framework consisting of goals and objectives to guide public and private investment into Florida’s emerging and growing aerospace sector. Like other transportation modes such as aviation and transit, FDOT encourages Spaceports to use SIP funds for projects that ensure a facility’s financial sustainability. This includes placing a priority on funding space infrastructure projects used by multiple

aerospace partners and generate revenue. FDOT and Space Florida have determined it necessary to require and satisfy Return on Investment (ROI) and state benefit requirements to ensure the sustainability of the program. Sustainable infrastructure enables sound economic development, job creation, purchase of local goods and services to enhance local quality of life, increase positive impacts (benefits), help protect vital natural resources and environment, and promote a more effective and efficient use of public financial resources.



NASA Crew Dragon splashdown and recovery. Source: SpaceX

INVESTMENT RECAPTURE FOR SPACEPORT CAPITAL PROJECTS

The FDOT and Space Florida work closely together on the allocation of state resources for spaceport capital projects to achieve strategic capital investment goals and facilitate non-state investment into emerging and growing aerospace markets. When appropriate, Space Florida may require the aerospace partner to satisfy certain benchmarks as a condition of state funding participation on a project. Such requirements are commonly referred to as “recapture” provisions and are intended to

ensure benchmarks are met and protect the public’s investment in a project against the risk of nonperformance.

Recapture may be implemented by assessing land use fees, lease payments, franchise fees and Space Florida property rights to property and ownership of the improvements to facilitate ensuring sustainability of the program.



Engine Test Firing. Source: Rocket Lab

04

CONCLUSION

Launch and Landing Facility Runway 15-33 (C-5 and AN-124 aircraft). Source: Space Florida



The State of Florida is the unquestioned leader in growth and development of a sustainable and world-leading aerospace industry in the United States. The benefits of FDOT funded projects are evident in everyday life activities, not only of Floridians but billions of people around the world. The Spaceport Improvement Program is designed to stimulate private sector investment and commercial spaceport development. Most importantly, the quality of life for Floridians will continue to improve as a direct result of these infrastructure investments.

This handbook describes key requirements for partnerships, application submittals, and project selection processes; JPA provisions, invoicing, and other project management topics and strategies used to maintain the integrity of the program and its resources. Because of the market and industry, the program continues to evolve rapidly and direct coordination by stakeholders is encouraged with Space Florida or FDOT's Spaceport Office to ensure compliance with applicable laws, rules, procedures, and plans, especially in cases where the facts or circumstances require additional guidance, or interpretation



Evening at the Kennedy Space Center Visitors Complex. Source: NASA

APPENDIX

STATEWIDE CONTACTS

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HELPFUL LINKS

Please use the links below to access or download the specified information.
For more information, please contact the FDOT Spaceport Office or Space Florida.

Florida Statutes

Chapter 287 Florida Statutes – Section 287.057

Procurement of commodities or contractual services

Chapter 331 Florida Statutes – Aviation and Aerospace Facilities and Commerce

Chapter 332 Florida Statutes – Airports and Other Air Navigation Facilities

Chapter 334 Florida Statutes – Transportation Administration

Chapter 339 Florida Statutes – Transportation and Finance

All statutes are available at www.leg.state.fl.us/STATUTES

FDOT

Contract Funds Management - Funds Approval: <https://fdotwp1.dot.state.fl.us/ProceduresInformationManagementSystemInternet/FormsAndProcedures/ViewDocument?topicNum=350-020-200>

FDOT Spaceport Office: www.fdot.gov/spaceport

FDOT Work Program Instructions – Freight, Logistics & Passenger Operations Part III – Chapter 15, Aviation and Spaceports: <https://fdotwp1.dot.state.fl.us/fmsupportapps/Documents/development/WorkProgramInstructions.pdf>

Space Transportation Infrastructure Matching Fund (STIMF) Application: www.spaceflorida.gov/page/call-for-project

Florida Department of Financial Services

www.myfloridacfo.com/Division/AA/Manuals

Cecil Spaceport

<http://www.flyjacksonville.com/Home.aspx?sMP=CECIL>

Space Coast Regional Airport/Spaceport

<http://www.ticoairportauthority.com/space-coast-regional-airport--tix-.html>

Federal Aviation Administration (FAA)

FAA Office of Commercial Space Transportation:
https://www.faa.gov/about/office_org/headquarters_offices/ast/

COMMERCIAL SPACE TRANSPORTATION REGULATIONS

The FAA commercial space transportation regulations (<https://www.ecfr.gov/current/title-14/chapter-III>) are in Chapter III, Parts 400-460, Title 14 CFR.

Amateur Rocket Activities are under 14 CFR, Chapter I (<https://www.ecfr.gov/current/title-14/chapter-I/subchapter-F/part-101>), by the FAA Air Traffic Organization.

For FAA Legislation & Policies, Regulations & Guidance information, visit https://www.faa.gov/space/legislation_regulation_guidance

Space touches everyone.

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