



**National Aeronautics and  
Space Administration**

**Kennedy Space Center  
2004 Implementation Plan**







## Message from the Center Director

When one visits the Kennedy Space Center homepage the words, "Launching the NASA Vision" immediately appear at the top of the screen. This phrase was never more true or applicable as the Agency works diligently to safely return to flight. We embrace the Columbia Accident Investigation Board report and are committed to "raise the bar" as we implement NASA's Implementation Plan for Return to Flight and Beyond. The KSC team will play a major role in this critical Agency endeavor.

In the spirit of One NASA and using our Guiding Principles as a foundation, the KSC leadership team collaborated with employees and customers to develop this Center Implementation Plan. The KSC Implementation Plan emphasizes programmatic excellence as we work toward becoming a **truly great** spaceport operations and technology Center. It also clearly delineates KSC's commitment to NASA, its Enterprises, our customers, and all stakeholders to help advance space exploration and commerce on behalf of all humankind.

We remain committed to bringing our customers the greatest value in reaching their objectives by working toward a common set of priorities. This Implementation Plan will serve as the guide to our future; and the Annual Plan, inserted in the back pocket and updated each year, will define specific strategies to keep us focused on our exciting journey.

In 2002, KSC celebrated 40 years of pioneering the future. This year NASA exceeded one thousand days of permanent human habitation of the International Space Station. To continue our exploration of space and the development of the frontiers of the universe, we must be true to our vision, inspire the next generation of explorers, and partner with our customers and suppliers to make space travel safer and more accessible. I look forward to working with all of you as we embark on this adventure together.

A handwritten signature in black ink, reading "James W. Kennedy". The signature is written in a cursive, flowing style.

James W. Kennedy



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1

**KSC Role in  
NASA's Vision  
and Mission**







# 1 KSC's Role in NASA's Vision and Mission

## The NASA Vision

To improve life here,  
To extend life there,  
To find life beyond.

## The NASA Mission

To understand and protect our home planet,  
To explore the universe and search for life,  
To inspire the next generation of explorers  
... as only NASA can.

*Space Shuttle arrives at Launch Pad 39A atop the Mobile Launcher Platform and Crawler Transporter.*



## A. NASA's Core Values

- Safety
- People
- Excellence
- Integrity

## B. NASA's Enterprises

To carry out its Mission, NASA is organized into six Enterprises. Each Enterprise draws on the capabilities of numerous Centers, while each Center contributes to multiple Enterprises.

- Earth Science
- Space Science
- Biological and Physical Research
- Education
- Space Flight
- Aerospace Technology

## C. Kennedy Space Center's Role

Kennedy Space Center (KSC) provides vital support to each of NASA's six Enterprises by fulfilling our primary roles in Space Launch Operations and Spaceport and Range Technologies. We apply our unique capabilities to contribute to NASA's goals and objectives, driven by our commitment to science, exploration, and discovery.

Essential to ultimately achieving NASA's Vision and Mission will be continuous safe and successful missions, along with strategic investments in space

launch and processing systems technologies to transform spaceport maintainability, supportability, and reliability.

KSC embraces the challenge of developing these "building blocks" for future space launch systems to enable new gateways to exploration and discovery. To accomplish this, we will leverage our rich heritage in spaceport operations and technology development. KSC's resident knowledge, expertise, facilities, and equipment will provide technologies and processes to current and future customers who propose to build and operate spaceports on Earth, in orbit, and beyond.

KSC's continued dedication to conducting effective education and outreach programs that share our passion and excitement for science, exploration, and discovery is integral to our future. Located at the Nation's premier Spaceport, KSC is a highly visible symbol of NASA and NASA's programs. Millions of people visit KSC's Visitor Complex, the largest in NASA, each year, while many of the world's media agencies reside on KSC or in the local area to cover NASA activities on a daily basis. Due to the keen public interest in NASA and its activities, it is incumbent upon KSC to convey information that allows the public to gain an in-depth understanding of NASA's history, current programs, and future plans. With a combination of education and outreach initiatives, KSC is committed to carry the excitement, knowledge, and passion of NASA's programs directly to the public and, especially, the explorers of the future.

**Goal 6 - Inspire and motivate students to pursue careers in science, technology, engineering, and mathematics.**

**Goal 7 - Engage the public in shaping and sharing the experience of exploration and discovery.**

**Goal 8 - Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.**

**Goal 9 - Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery.**

**Goal 10 - Enable revolutionary capabilities through new technology.**

**- NASA Strategic Plan**



#### D. KSC's Strategic Framework

Kennedy Space Center's strategic framework centers around three essential capabilities: Operations, Development, and Enabling. Each element is mutually supportive, and KSC's success hinges upon how well we execute in each of these areas, working together as a team. For this reason, KSC's Strategic Goals are aligned with these capabilities:

- Assure and advance access to space for exploration, development, and use
- Provide innovative Spaceport and Range technologies for safe space operations and exploration missions
- Provide and assure safe, world-class services for operations and development functions

We have four Guiding Principles, which lay the foundation for all of our endeavors:

- Safety & Health First
- Build Teamwork & Reliance Everywhere
- Satisfy our Customers' Needs Anytime, Anywhere
- Environmental Leadership

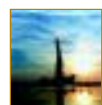
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#### *NASA Transformation*

*We will operate as One NASA in pursuit of our Vision and Mission.*

*- NASA Strategic Plan*

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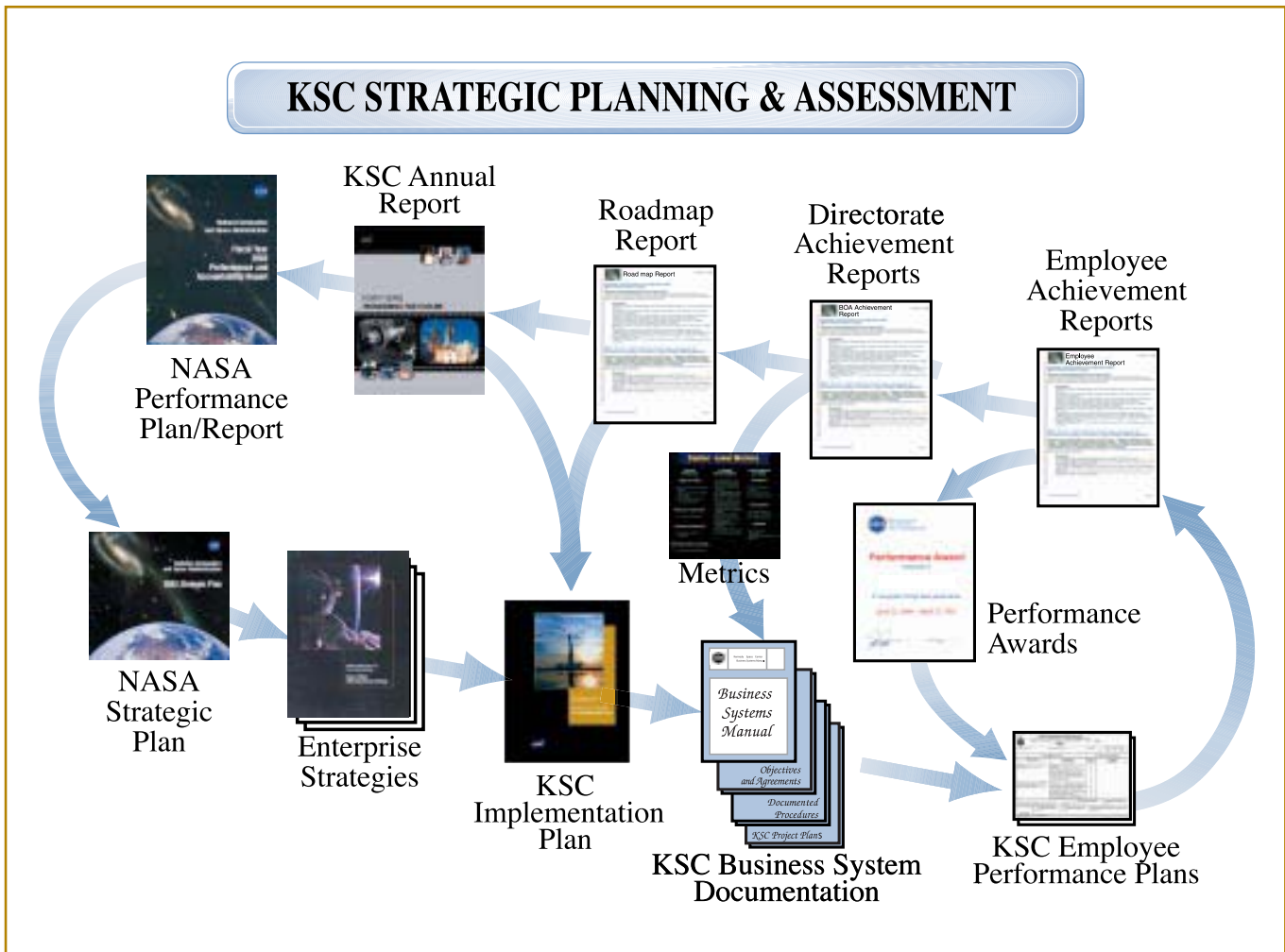


The Guiding Principles are in addition to, and supportive of, the Agency's Core Values, with a specific slant toward the unique aspects of KSC. KSC's Safety and Health First and Environmental Leadership Guiding Principles amplify the Agency's top Value, Safety. The Agency's Values of Integrity, Excellence and, especially, People transcend all four Guiding Principles.

Our Center-level Metrics, in turn, are structured around our Guiding Principles and Goals. We also

incorporate what we call "Planned Improvement" metrics to measure progress in those areas we are undertaking to drive improvement in the targeted areas. Together they form the set of performance indicators we use to manage at KSC.

Our strategic management system clearly links to NASA's Plans to define the relationship of our Center to the Agency's strategic architecture and priorities and to ensure our employees understand that their contributions are directly aligned to the highest level goals and objectives of this Agency.



# Center - Level Metrics

## GUIDING PRINCIPLES

### Safety & Health

- [KSC Lost Time Injury Frequency \(NASA\)](#)
- [KSC Lost Time Injury Frequency \(Total KSC\)](#)
- [KSC Cardiovascular Disease \(CVD\) Risk Reduction](#)

### Reliance & Teamwork

- [KSC Teamwork & Reliance](#)

### Customer Satisfaction

- [KSC External Customer Satisfaction](#)

### Environmental Leadership

- [KSC Environmental Leadership](#)

## PLANNED IMPROVEMENTS

- [KSC President's Mgmt Agenda Scorecard Status](#)
- [KSC Close Calls \(NASA & Contractor\)](#)
- [VPP Implementation Status](#)
- [Operations Project Support](#)
- [Equipment Obsolescence](#)
- [KSC Spills, Cleanup Times and Regulatory Notifications](#)
- [KSC Energy Usage Index \(Energy Intensive & Standard Facilities\)](#)
- [Security Gap Elimination](#)
- [CMB Implementation Status](#)
- [Trailer Abatement](#)
- [Facilities Mgmt Capital Investment](#)
- [IFMP Implementation Status](#)
- [KSC Property Accountability](#)

## VISION/MISSION SUCCESS

### Operations

- [KSC On-Time NASA Launches](#)
- [KSC Mission Success](#)
- [KSC On-Time Processing](#)

### Development

- [KSC Project Selection](#)
- [KSC Project Performance](#)
- [KSC Project Outcomes](#)

### Enabling

- [KSC Competency Assessment](#)
- [KSC Facility Condition Index-Modified](#)







2

**KSC Support to  
NASA's Themes**



RELEASED - Printed documents may be obsolete; validate prior to use.





# 2 KSC Support to NASA's Themes

KSC's alignment with the NASA 2003 Strategic Plan is depicted graphically at the end of this section. Although KSC actively participates in all six of NASA's Enterprises, our primary responsibilities are in support of the following five Themes:

## A. International Space Station (ISS)

KSC is dedicated to the integration, ground processing, and testing of Space Station components, including assembly elements, resupply cargo, and utilization experiments.

We provide leadership and expertise for the final integration and ground processing of the United States assembly elements. KSC also manages the Resupply and Return (R&R) activities that provide life-sustaining provisions, experiments, and other cargo to support on-orbit operations.

KSC manages and performs critical integrated tests, including Multiple Element Integration Tests and Integrated Systems Tests for United States and International Partner elements. In addition, we perform experiment processing for ISS utilization customers, payload developers and Principal Investigators. Complementing our operations activities, KSC designs, develops, and provides sustaining engineering expertise for ground systems and payload processing facility systems.

A responsive payload processing and test capability is critical to the long-term successful utilization of the International Space Station. KSC will use its extensive experience to develop spaceport technologies of the future, providing improved processing capabilities to enable science discoveries for our Principal Investigators, International Partners, and the science community.

*Backdropped by the blackness of space and Earth's horizon, the International Space Station (ISS) was photographed by a crew member aboard the Space Shuttle during rendezvous and docking operations.*



## B. Space Shuttle Program (SSP)

KSC is dedicated to preparing the Space Shuttle for safe and successful missions. We lead all activities associated with launch and landing, participate in critical problem resolution, and certify flight readiness through a risk-based surveillance program.

KSC supports the Shuttle Element Projects in developing test and checkout requirements and modifications. We evaluate proposed modifications and new requirements for impact to processing and to the vehicle element flow, recommend changes to minimize impacts, and assess skills, resources, and software and hardware modifications required to implement the changes.

KSC designs, develops, and maintains Shuttle processing infrastructure, facilities, and ground support equipment. This effort includes applying new tools and available technology to Shuttle ground processing, redesigning equipment to mitigate obsolescence, and refurbishing our launch support facilities and infrastructure. KSC also actively

*Carrying the 2001 Mars Odyssey spacecraft, the Delta II rocket stands ready for launch.*

participates in the Shuttle Service Life Extension Program's (SLEP) planning, evaluation, and prioritization of investment candidates.

KSC will continue to leverage our vast experience and operational knowledge of reusable launch vehicles to improve support to the SSP and future launch systems.

## C. Space and Flight Support (SFS)

NASA's Launch Services Program is dedicated to providing access to space for civil government customers. We manage launch services for expendable launch vehicles and Shuttle payload carriers capabilities, assets, and services.

Our mission is to provide leadership, expertise and cost-effective services in the areas of commercial launch services, payload carriers, and payload processing to satisfy Agencywide space transportation requirements and assure mission success. We provide this broad range of support to the Space Flight Enterprise, as well as NASA's Space and Earth Science missions.

KSC exercises a technical oversight approach to enhance safety and mission success. Our Launch Vehicle Certification Plans provide mission risk mitigation in support of the NASA Launch Services Risk Mitigation Policy. We have flexible contract mechanisms in place to acquire the launch service that will best suit our customers' needs.

Our extensive experience with expendable launch vehicles complements our reusable vehicle experience base. This unique combination is critical for identifying future spaceport technology needs, as well as continued customer satisfaction.

## D. Space Launch Initiative (SLI)

KSC is committed to the two emerging programs of the SLI Theme: the Orbital Space Plane (OSP) and Next Generation Launch Technology (NGLT) programs. These programs are critical to the Agency's future in space.

KSC will leverage the experiences of current and past space flight programs in the development of OSP requirements and operations concepts. As the OSP becomes operational, KSC will be responsible for activities associated with integration and operations



at the launch and landing sites, including launch vehicle integration planning, launch service acquisition, mission integration, and launch campaign management.

KSC will develop and demonstrate ground and flight technologies for NGLT. We will provide leadership and strengthen strategic partnerships with the Department of Defense, the Federal Aviation Administration, industry, and state governments to select technology development projects that will dramatically improve safety and operability and minimize the development and operational costs to NASA and our partners.

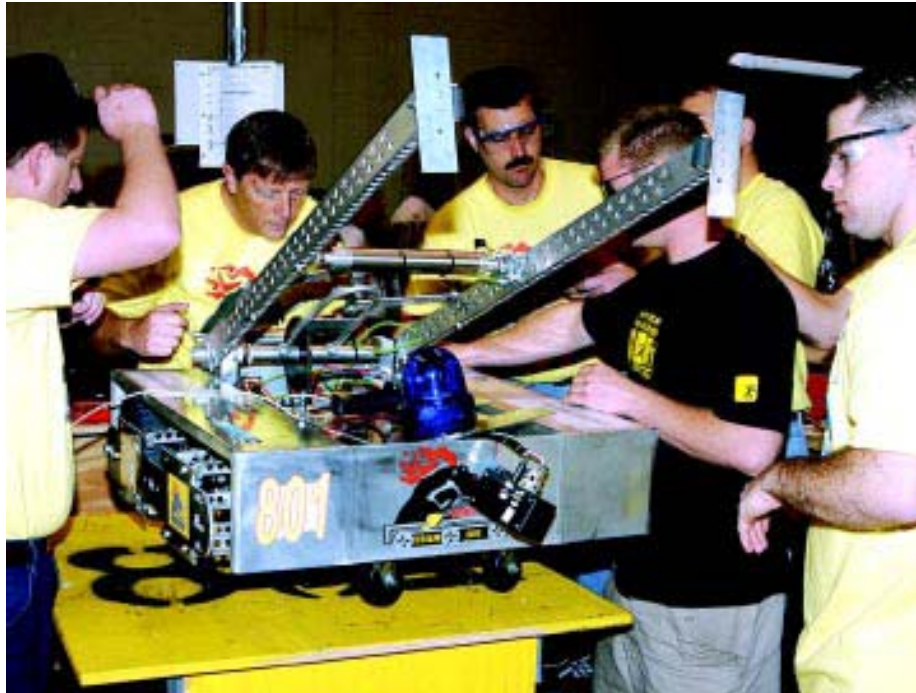
Our leadership in national forums for spaceport and range technology and expertise in the areas of integrated ground systems technologies; advanced checkout, control and maintenance systems; space-based range technologies; advanced smart umbilicals; and debris-less separation systems will form the basis of future technology investment decisions.

SLI is the key to expanding the space frontier for continued scientific exploration and economic growth, improving safety, reliability, and affordability for government and private industry. KSC's spaceport and range technology development is critical to the success of this endeavor.

## E. Education Programs (EP)

KSC engages students from kindergarten through university graduate level; elementary, high school, and preservice educators; and collegiate faculty in the NASA Vision and Mission. We guide students through the pipeline of targeted academic programs, provide educators with unique teaching tools and compelling teaching experiences, and partner faculty researchers with KSC scientists and engineers on projects that are key to KSC's mission areas. KSC works to ensure these education programs include students and faculty from diverse communities representing the diversity of our nation. The desired outcome of these programs is both an informed public, and a highly qualified, diverse, and flexible workforce for the future.

Annually, KSC hosts hundreds of students and faculty for internships and research activities related to all types of work being performed at KSC. This provides opportunities for participants to become familiar with the goals and objectives of both NASA and KSC.



*Members of the Merritt Island Robotics team look over their robot in the 2003 Southeastern Regional FIRST Robotic Competition.*

KSC provides educators with NASA mission-related workshops and materials and guidance on ways to use these materials in science, technology, engineering, and math curriculums. These activities take place onsite at KSC and in community schools, providing teachers with unique tools and experiences to inspire students and increase their proficiency in science, technology, and math-related subjects.

We work closely with our engineering and science organizations to match their needs with the capabilities of the academic community and support programs and projects where university researchers can augment KSC's expertise. We have also made significant strides in working with the NASA-funded Space Grant Consortia, which represents all 50 states, Puerto Rico and the Washington, D.C. area, connecting with colleges and universities throughout the United States.

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### *NASA Transformation*

*Education and inspiration will be an integral part of all our programs.*

*- NASA Strategic Plan*

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# KSC Alignment with the NASA 2003 Strategic Plan

NASA Missions	NASA Goals		NASA THEMES
Understand and protect our home planet	1	Understand Earth's system and apply Earth system-science to improve the prediction of climate, weather, and natural hazards.	
	2	Enable a safer, more secure, efficient, and environmentally friendly air transportation system.	
	3	Create a more secure world and improve the quality of life by investing in technology and collaborating with other agencies and industry.	
Explore the universe and search for life	4	Explore the fundamental principles of physics, chemistry, and biology through research in the unique natural laboratory of space.	
	5	Explore the solar system and the universe beyond, understand the origin and evolution of life, and search for evidence of life elsewhere.	
Inspire the next generation of explorers	6	Inspire and motivate students to pursue careers in science, technology, engineering, and mathematics.	
	7	Engage the public in shaping and sharing the experience of exploration and discovery.	
Enabling Goals	8	Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.	
	9	Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery.	
	10	Enable revolutionary capabilities through new technology.	

## Color and Symbol Key:



NASA Enterprises												
Space Science			Earth Science		Biological & Physical Research		Aero Tech	Ed	Space Flight		Aerospace Technology	
												Solar System Exploration (SSE)
												Mars Exploration (MEP)
												Astronomical Search for Origins (ASO)
												Structure and Evolution of the Universe (SEU)
												Sun-Earth Connection (SEC)
												Earth System Science (ESS)
												Earth Science Applications (ESA)
												Biological Sciences Research (BSR)
												Physical Sciences Research (PSR)
												Research Partnerships and Flight Support (RPFS)
												Aeronautics Technology (AT)
												Education Programs (EP)
												International Space Station (ISS)
												Space Shuttle Program (SSP)
												Space and Flight Support (SFS)
												Space Launch Initiative (SLI)
												Mission & Science Measurement Technology (MSM)
												Innovative Technology Transfer Partnerships (ITTP)

 KSC Primary Contribution  
 KSC Supporting Contribution

 In addition to Space & Flight Support, KSC provides Launch Services to the Themes identified with a star

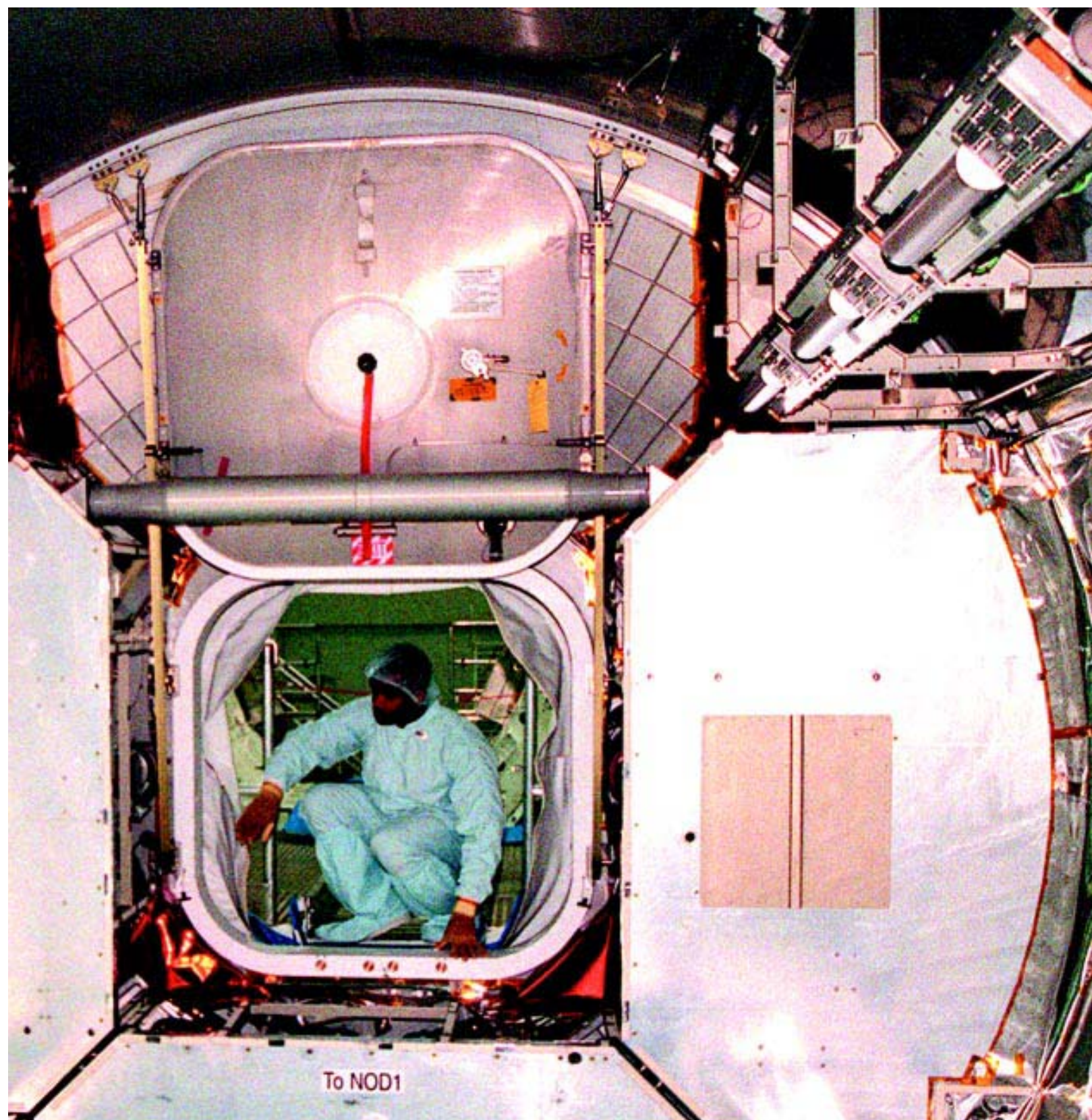






3

**KSC Current  
Capabilities**



To NOD1



# 3 KSC Current Capabilities

KSC's knowledgeable, experienced workforce and proven infrastructure are essential to our successful performance.

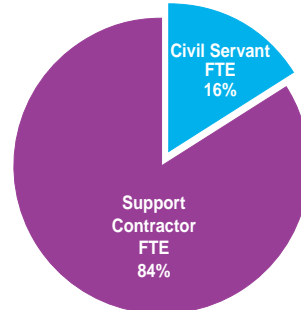
## A. Workforce

The heart, mind, and soul of the KSC are the men and women who work day-in and day-out to achieve NASA's Mission and Goals. We are a diverse family who understands the importance of our people and recognize the value of treating every individual with dignity and respect. We are a community of civil servants and contractors, with varying occupations, educational backgrounds, ethnicity, and national origins. Together we work to meet all Agency program and project requirements.

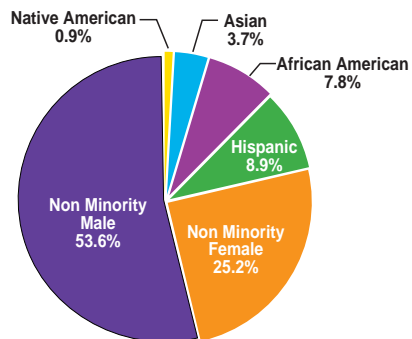


*Employee in the hatch of the Multi-Purpose Logistics Module (MPLM) that was launched on STS-100.*

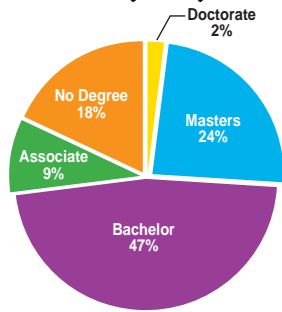
**KSC Total Workforce (FY03)**



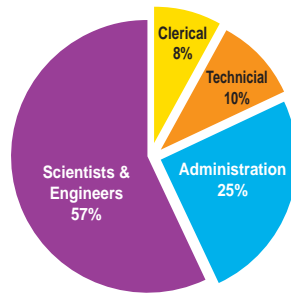
**KSC C/S Diversity (FY03)**



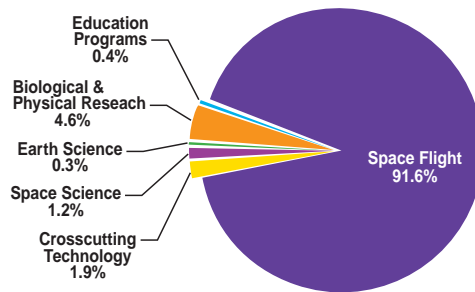
**KSC C/S Workforce Degree Breakdown (FY03)**



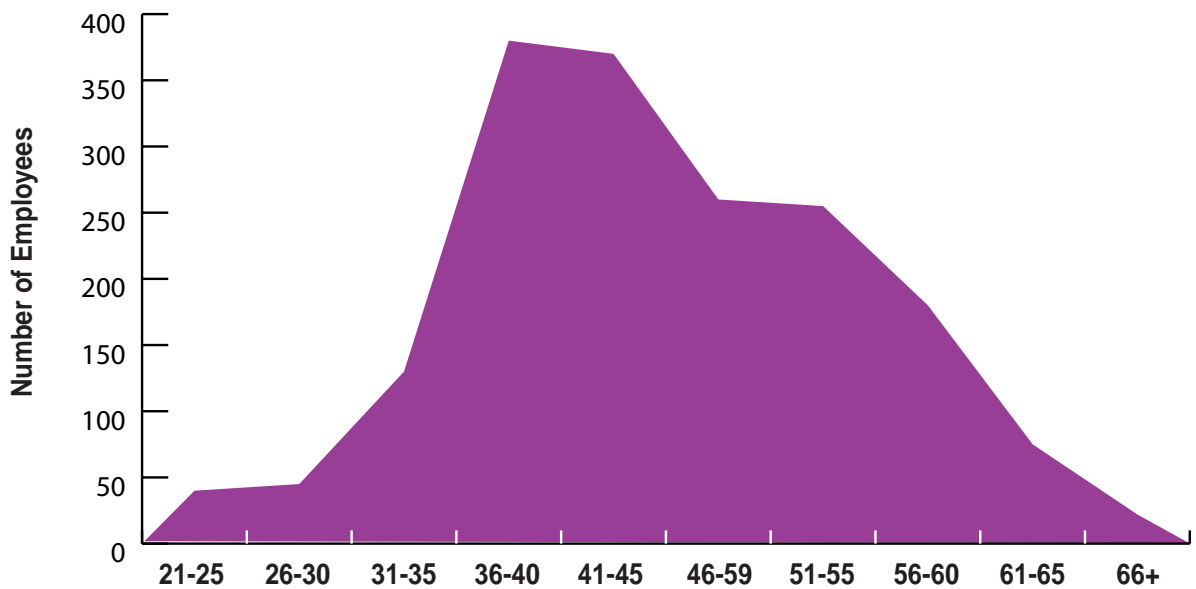
**KSC C/S Workforce by Occupation (FY03)**



**KSC C/S FTE by Enterprise (FY04)**



**KSC C/S Age Distribution (FY03)**





*Technicians install thermal protection system tiles on the Space Shuttle Discovery.*



## Competency Management

One of NASA's greatest challenges is to assure that we attract and maintain a workforce with the competencies needed to maintain this country's leadership in space. In order to optimize our Human Capital (HC), our goal is to build and maintain a world-class workforce to successfully achieve NASA's Mission. Through the Competency Management System (CMS), developed and piloted at KSC, NASA is now able to identify imbalances in

strategically important competency areas and better utilize appropriate HC tools to recruit, hire, train, and develop our people.

Specifically at KSC, we have identified four core competencies, which describe our primary sources of customer value and are critically important to the Center's success. These core competencies are supported by 74 distinct knowledge areas, or mid-level competencies, that capture the essence of the knowledge and skills required to accomplish our Mission and Goals.



## KSC's Core Competencies:

### Reusable Launch Vehicle Processing

Essential knowledge, capabilities and operational expertise required to safely and effectively process, launch, and recover reusable launch vehicles. Scope includes NASA's existing Space Shuttle fleet, as well as future Reusable Launch Vehicles.

### Payload Processing

Essential knowledge, capabilities, and operational expertise required to safely and effectively assemble, test, verify, service, launch and de-integrate Reusable Launch Vehicle payloads and science experiments. Scope includes current Space Shuttle payloads (e.g., science experiments, International Space Station (ISS) assembly and operations, other payloads such as the Hubble Space telescope) and future Reusable Launch Vehicle payloads.

### ELV Launch Services

Essential knowledge and capabilities associated with the acquisition and management of commercial launch services for NASA and other government payloads.

### Spaceport & Range Development

Essential knowledge and capabilities associated with the design and development (with associated research) of environmentally responsible systems, technologies, hardware, and processes necessary to support and improve current and future spaceport and range operations.

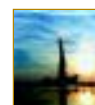
Center leadership collaboratively identified 12 of the most critical competencies required across KSC as a whole, while directorates determined the competencies most critical to their organizations. Our workforce capabilities are measured by the quantifiable excesses and gaps associated with these competencies.

CMS's versatility is derived from and supports NASA's basic core value that our greatest asset is our workforce as it relates not only to strength in terms of numbers but personnel capability as well. This system recognizes that every individual possesses varying levels of experience and multiple, often diverse, competencies. Personal portfolio data, combined with position requirements, provide real insight into what the Center knows and what the Center needs to know, both collectively and individually. CMS is a powerful workforce planning tool that not only brings to light the knowledge areas where our training and hiring dollars should be spent but also is essential in staffing for NASA's future missions, succession planning, projecting and

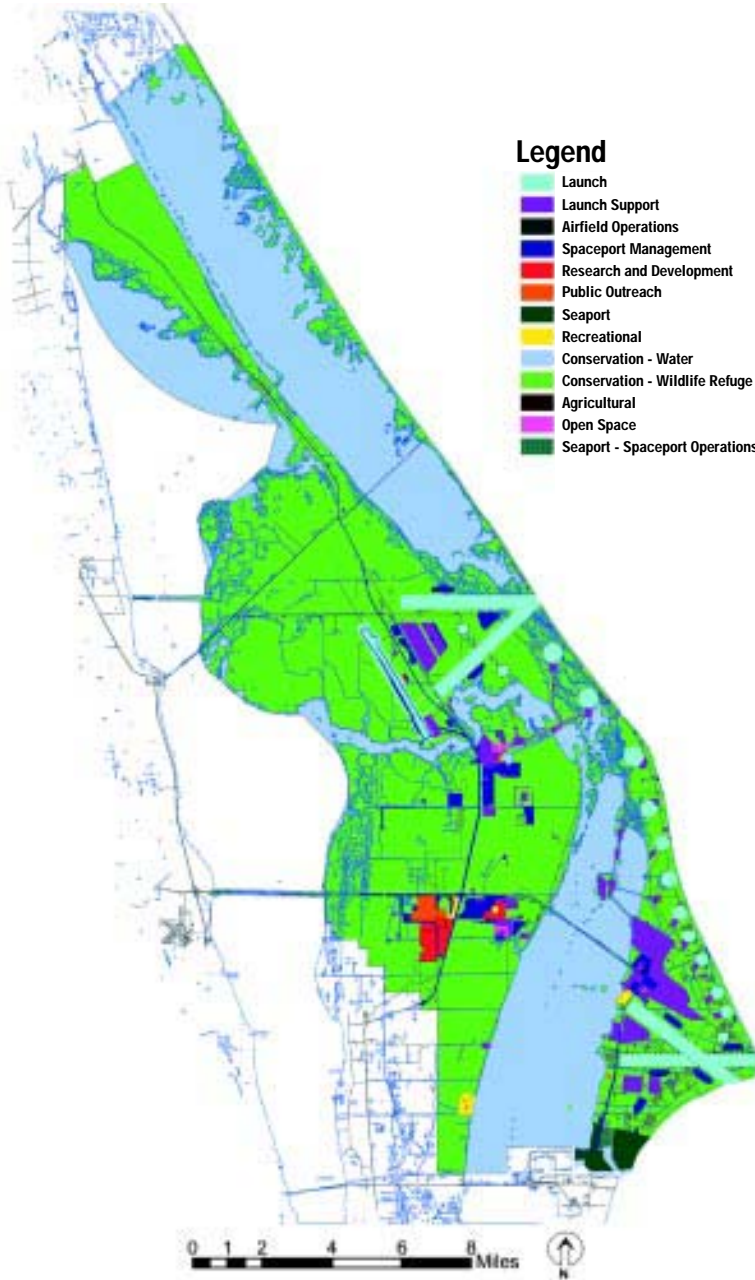
planning for attrition, and many other human capital initiatives.

## B. Infrastructure

The Kennedy Space Center is a truly unique national asset. Encompassing approximately 140,000 acres, KSC is located within the confines of the Merritt Island National Wildlife Refuge and the Canaveral National Seashore and adjacent to Cape Canaveral Air Force Station. KSC is home to more than a dozen threatened or endangered species. KSC proactively protects and enhances wildlife and native vegetative habitats with policy that emphasizes redeveloping existing facility areas as the desired alternative to disturbing pristine land. Only 4,200 acres (or 3% of the total acreage) are used for operational activities. This includes more than 900 diverse facilities, with almost 8 million total square feet of building area. These unique facility assets support a variety of functions directly related to KSC's roles and responsibilities.



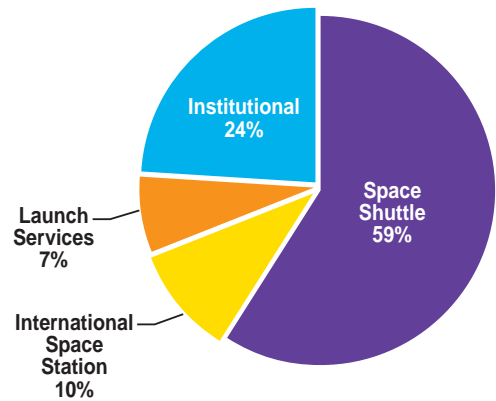
## Land Use Map



## Master Planning

In partnership with the U.S. Air Force (45th Space Wing), the State of Florida (Florida Space Authority), the U.S. Naval Ordnance Test Unit, the U.S. Fish and Wildlife Service, and the National Park Service, KSC led the development of the Cape Canaveral Spaceport Master Plan. The plan serves as a strategic reference tool to prepare for future institutional challenges and opportunities at KSC and Cape Canaveral Air Force Station and is used in decisionmaking. The Cape Canaveral Spaceport Master Plan was designed to focus 50 years into the future and beyond, looking far enough ahead to minimize existing constraints and identify opportunities. KSC developed a planning process that seeks to protect and preserve our unique natural, cultural, and historical resources. In addition, the master plan pursues objectives that might otherwise have been overlooked; provides the planning structure that embraces technological development, policy change and market evolution; and maximizes cooperation for the ultimate benefit of the taxpayer.

## KSC Facility Square Footage Utilization by Program



## Facilities Capabilities and Assets:

### Space Shuttle Processing

Space Shuttle processing activities are primarily performed within Launch Complex 39 (LC-39). This area contains the Vehicle Assembly Building (VAB), Launch Control Center (LCC), Orbiter Processing Facilities (OPF), Launch Pads 39A and 39B, and other operational facilities, as well as support facilities. In the KSC Industrial Area, the Hypergolic Maintenance Facility and associated support buildings provide capability for Space Shuttle component processing. In addition, some facilities on Cape Canaveral Air Force Station support Space Shuttle processing and logistics requirements.

### Payload and International Space Station Element Processing

ISS elements are processed primarily in the Space Station Processing Facility, on the east end of the KSC Industrial Area. Other payload processing activities take place within facilities in the KSC Industrial Area and on Cape Canaveral Air Force Station. Life sciences payload processing takes place within the Space Life Sciences Laboratory (SLSL), located adjacent to the planned KSC International Space Research Park.

### Launch Services Program

The Launch Services Program Office at KSC provides the Expendable Launch Vehicle (ELV) launch services acquisition and management functions for NASA and its customers. These activities are carried out in NASA facilities in the KSC Industrial Area, at Cape Canaveral Air Force Station, and at Vandenberg Air Force Base.

### Technology Development

The complex electrical, mechanical, and biological systems and equipment required at KSC demand many unique, technologically advanced facilities. Specialized laboratories, testbeds, and equipment provide resources for solving design and operational problems. Examples include the Launch Equipment Test Facility (LETf), Engineering Development Laboratory (EDL), Cryogenics Test Laboratory, and Corrosion Technology Testbed. A variety of KSC's facilities, launch systems, payload processing facilities, and laboratories support the development and application of diverse technology projects.

### Public Outreach

The Kennedy Space Center Visitor Complex encompasses numerous facilities that house various museums and exhibits, including two IMAX Theaters, the Apollo/Saturn V Facility, the LC-39 Observation Gantry, the Center for Space Education, and the Astronaut Hall of Fame. A number of onsite launch viewing facilities provide access for visitors to witness Space Shuttle and Expendable Launch Vehicle launches. In addition, the NASA Press Site and Web Studio, located in the LC-39 area, are home to the resident media corps who tell the NASA Story via their respective media outlets.



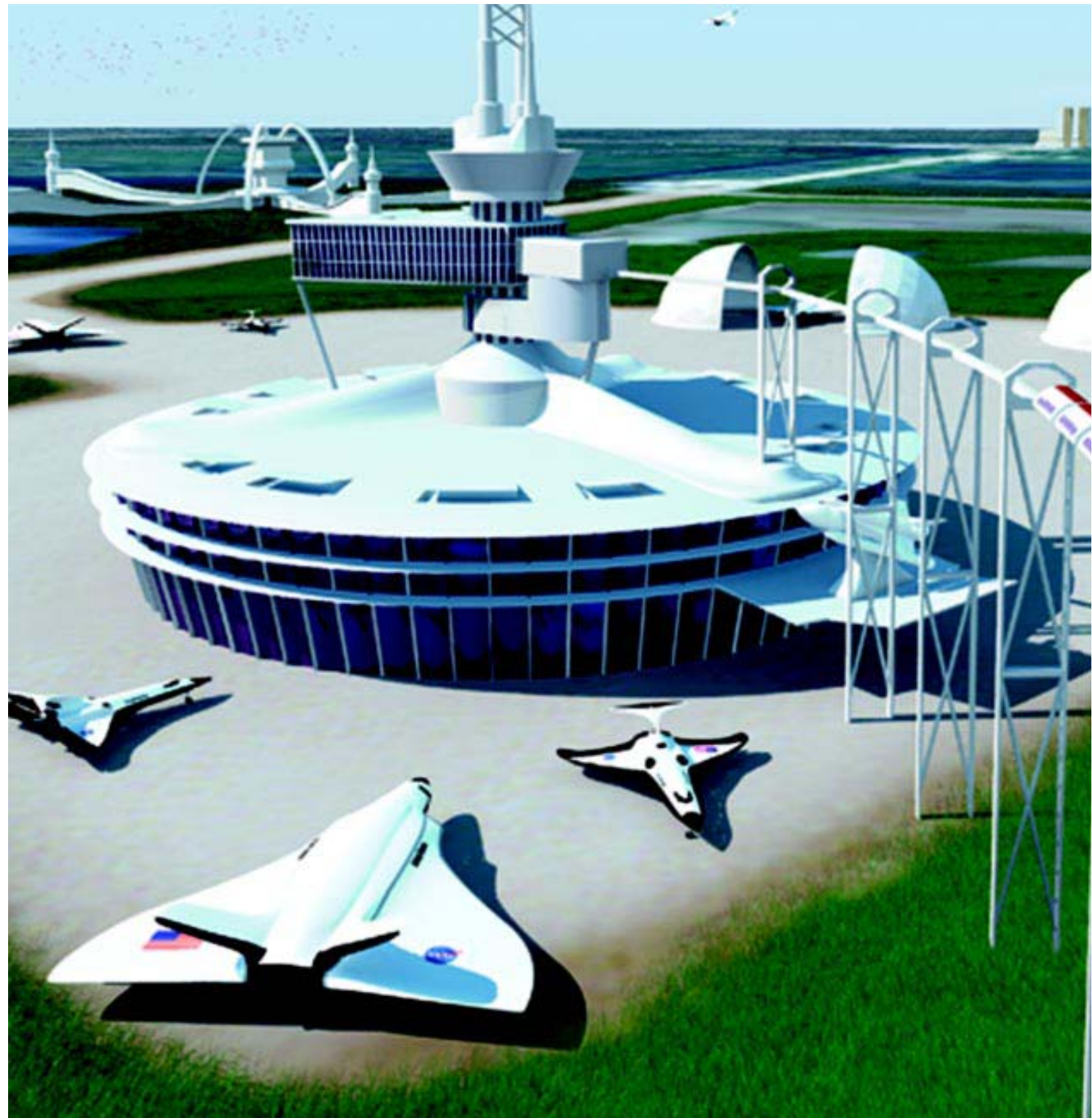






4

**KSC Strategic  
Capabilities for  
the Future**



# 4

## KSC Strategic Capabilities for the Future

KSC is poised to strategically evolve our workforce and infrastructure to achieve NASA's Mission.

### A. Support to NASA's Enterprises

KSC serves a key role in the achievements of NASA's Enterprises. We are a primary contributor to the Space Flight, Aerospace Technology, and Education Enterprises and provide supporting contributions to the Space Science, Earth Science, and Biological and Physical Research Enterprises.

#### Space Flight Enterprise Strategy

Building on our current strengths and drawing on new sources, the Space Flight Enterprise (SFE) will enable exploration, discovery, and understanding. KSC is one of four Space Flight Centers, and as an integral part of the SFE, we are guided by common management principles. The Center Director serves on the SFE Leadership Council, contributing to the overall direction and leadership for the Enterprise. As a Space Flight Center, we are committed to the Space Flight Enterprise Strategy's four Areas of Strategic Emphasis, as follows:

#### Commitment to Space Flight

Our commitment to space flight is resolute. Through outstanding engineering and international cooperation, we will continue to explore as judicious risktakers. Safety is our first priority and will continue to permeate every activity we undertake each and every day. KSC is dedicated to assuring access to space for the myriad of customers who rely on us for launch services, whether through reusable or expendable launch vehicles.

#### Corporate Focus

KSC's focus is to provide space flight capabilities that further NASA's goals, now and in the future. As One NASA, the KSC team will fulfill our commitments and rely on others to do the same, in

*Artist's concept of a futuristic Spaceport.*



order to deliver our Space Flight services effectively. With our neighbor and mission partner, the 45<sup>th</sup> Space Wing, we will continue building a robust Cape Canaveral Spaceport. We will also work in concert with NASA's Space Flight team to ensure continued contributions to the education and inspiration of future generations as we create the building blocks for future exploration.

#### **Management Excellence**

KSC will maximize the taxpayers' return on their investment by deploying state-of-the-art management tools and enable effective leadership of our programs. As we strive to achieve each of the five Governmentwide initiatives in the President's Management Agenda, we will continually enhance our systems management, human resources, financial, information technology, and facilities processes. We will continue to rely on customer feedback to effectively adapt to their changing needs as a key aspect of long-term excellence. KSC will promote the Space Flight Enterprise's corporate culture across all of our institutional assets.

#### **Reaching for a Vibrant Future**

Through a refined focus and management excellence, KSC will respond to new opportunities with flexibility and agility. We are honored to serve the Agency and the Space Flight Enterprise as we journey into the future.

#### **Aerospace Technology Enterprise Strategy**

KSC has a long history of active participation in Aerospace Technology Enterprise (ATE) projects and programs. We will continue to provide solid KSC support to ATE's future endeavors and the six elements of the Enterprise strategic framework:

##### **Strategic alignment of our programs**

KSC will contribute to ATE programs to achieve Agency goals and to align with distinct communities of technology users. Success is only achieved when a "customer," a technology user, applies ATE products and achieves results and benefits from that application.

##### **Maintain a customer focus**

KSC will ensure that the needs of the technology users are considered throughout the life cycle of programs that are developed to meet the Theme objectives, from program planning through technology transfer.

#### **Use systems analysis to guide the technology portfolio**

KSC will assist ATE in using systems engineering and analysis as a critical tool in technology assessments and investment strategies to help maintain a long-term focus on challenging technology requirements and desired capabilities.

#### **Create a special focus on transformation**

Many challenges can be solved through a focus on transformation or redesign, enabled by technology, of the interactions among the systems that comprise a total end-to-end capability. With this understanding, KSC will assist ATE in ensuring the ground operations system is included in the aerospace "systems of systems," creating an ability to effectively analyze and design at that level.

#### **Develop strategic partnerships**

Strategic partnerships are a key mechanism to align missions and goals, enhance communication, and improve the process of technology insertion. KSC will establish strategic partnerships with spaceport and range users, operators, developers, and researchers to build such alignment, enhancing ATE's ability to leverage research efforts and transfer technology.

#### **Create more flexible and effective organizational structures, policies and processes**

We must promote organizational structures, policies, and processes that allow Centers to easily adapt to a greater focus on programmatic relevance, quality, and performance and less on institutional stability. KSC will assist ATE in engineering policies and processes to ensure continued effective support to the core functions of research facilities.

#### **Education Enterprise Strategy**

As the Nation's Spaceport, KSC houses unique and inspiring assets and offers opportunities for learning that are not available anywhere else in the world. Drawing on these merits, KSC strongly supports the new initiatives of the NASA Education Enterprise. KSC is providing summer workshops for the first wave of five newly chosen NASA Explorer Schools as they embark on the first of a 3-year experience with NASA. KSC provides customized professional development activities to these educators and administrators in science, mathematics, and technology education utilizing KSC's unique assets. Florida ranked third in the Nation (behind Texas



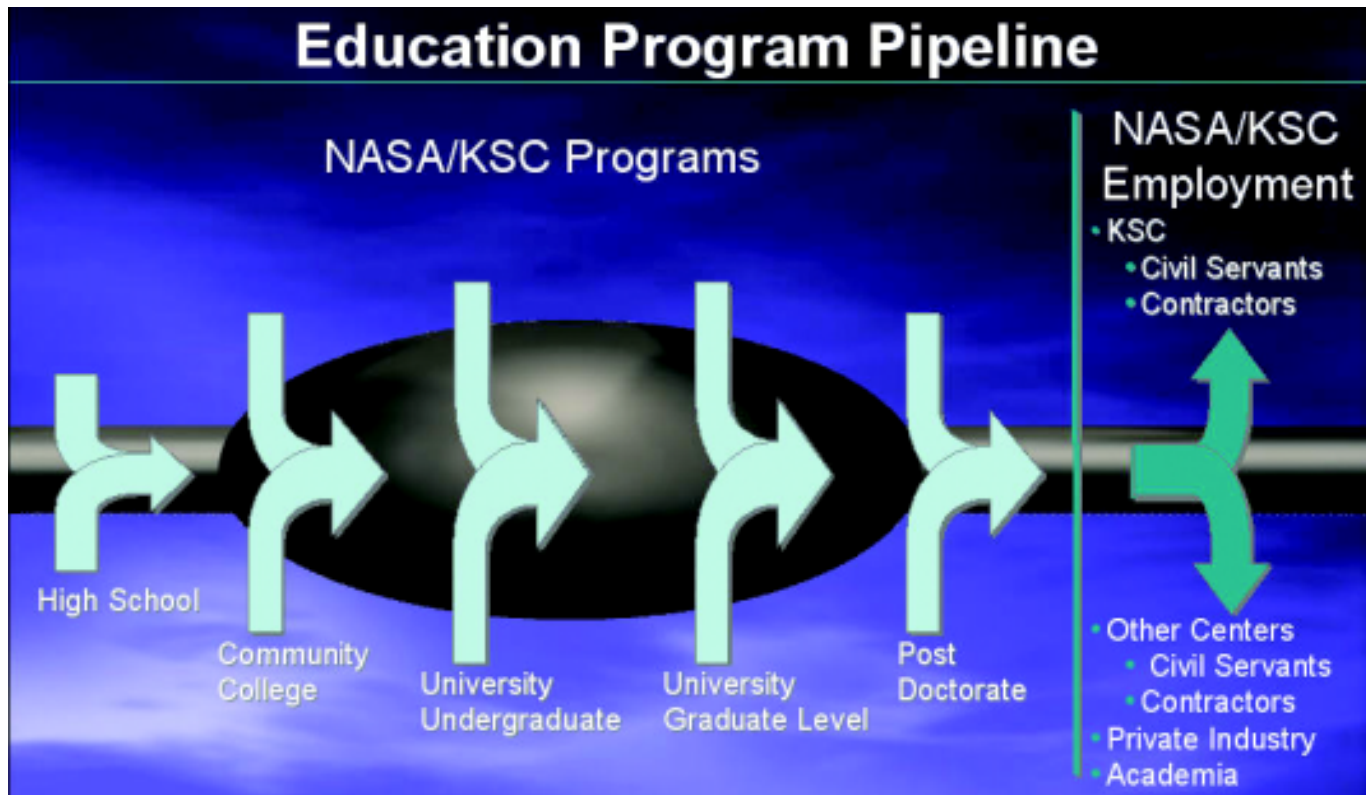
and California) in the number of teachers who applied to NASA's Educator Astronaut Program, and we currently have a large number of students participating in the "Earth Crew" activities.

The goal to inspire more students to pursue the study of science, technology, engineering, and mathematics (STEM) will permeate and be embedded within our Center activities with the ultimate goal of having more students choose careers in aerospace. Program activities will continue to allow students to be directly involved in the activities, discoveries, and latest technologies developed by NASA. Unique teaching and learning opportunities will also be provided to educators using space as their classroom and the Space Shuttle, the International Space Station, and KSC as their laboratories. We will open our arms to educators to provide them with learning opportunities that not only will inspire and motivate them but will provide them with tools and experiences that they can bring back to their classrooms and inspire the students they teach every day. Engineering, mathematics, and science are part of KSC's day-to-day activities; when we share these activities with teachers, we assist them in bringing

the excitement of space exploration to our next generation of explorers-their students.

KSC also works closely with local, regional and state education customers' to ensure we are responsive to their identified needs in education. We will further pursue partnerships with these regional entities to assist as requested with their systemic reform initiatives in formal education programs. KSC's education programs will be evaluated regularly to ensure they meet our education community customers' needs, achieve defined performance goals, and involve appropriate partners to ensure success.

As NASA's premier launch site, KSC is uniquely positioned to engage the public in shaping and sharing the experience of exploration and discovery. Increasing the public knowledge and understanding of NASA's research and exploration mission is key to our efforts at the launch site. KSC will leverage the excitement of launch to increase the public's appreciation of our space exploration endeavors and understanding of their relevance to those on Earth. As we provide more access to these activities via the digital world, our reach becomes almost boundless.



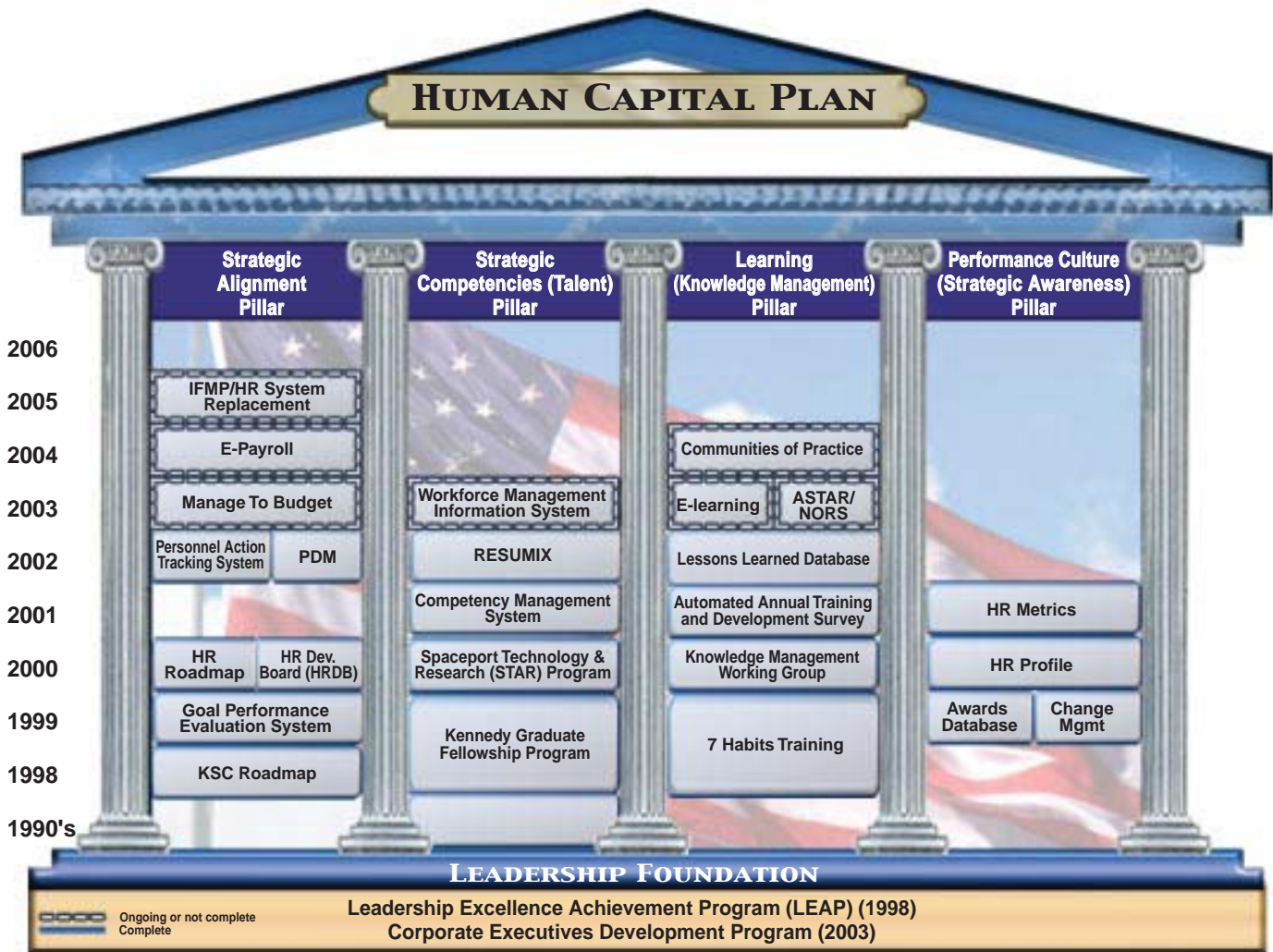
## Other Enterprise Strategies

Through our role in the Space Flight Enterprise, we enable the goals and objectives of the Space Science, Earth Science, and Biological and Physical Research Enterprises. Our leadership in providing launch services for NASA missions contributes to NASA's ability to seek answers to questions about the life in the universe and a deeper understanding of our home planet, Earth. One such mission, the Jupiter Icy Moons Orbiter (JIMO) will explore the makeup, history, and life-sustaining potential of three of the Jovian moons. We will lead the launch systems activities for this ambitious mission, which will also demonstrate the ability to develop a nuclear reactor that can be safely processed and reliably operated for deep space exploration. Our research and technology development efforts, particularly in biological and life sciences, contribute to improved

performance of life support systems for future exploration. Because of our collective core capabilities, KSC continues to play an active role in exploring future transportation and exploration architectures, concepts, and approaches.

## B. Workforce

As a basis for its Strategic Human Capital Plan, NASA embraces the Office of Management and Budget (OMB) standards for success and the Office of Personnel Management (OPM) dimensions and recasts them in terms of an overarching architecture structured around five "pillars": Strategic Alignment, Strategic Competencies, Learning, Performance Culture, and Leadership, which provides the foundation for the other four.



## Strategic Human Capital Future Initiatives:

### **Manage to Budget:**

Delegates management of Civil Service costs to first-line directors, including salaries, training, awards, overtime, and position classification.

### **E-Payroll:**

Transition of NASA's Civil Service payroll to a selected government provider consistent with the President's Management Agenda

### **Integrated Financial Management Program / Human Resources System Replacement:**

Provides a single Agencywide automated Human Resources system through an Integrated Financial Management Program module.

### **Workforce Management Information System:**

Provides supervisors with "one stop shopping" desktop access for all Human Resource informational needs.

### **E-Learning:**

Expand online training opportunities to include graduate science and engineering degree programs and professional seminars.

### **Administrative Scheduling, Training, and Retrieving / NASA Online Registration System:**

Provide NASA workforce desktop access to all training records and registration for courses.

### **Communities of Practice:**

Capture and disseminate knowledge of personnel with similar expertise through the Knowledge Management Working Group utilizing lessons learned, best practices, and similar experiences with ongoing projects.

### **Corporate Executives Development Program:**

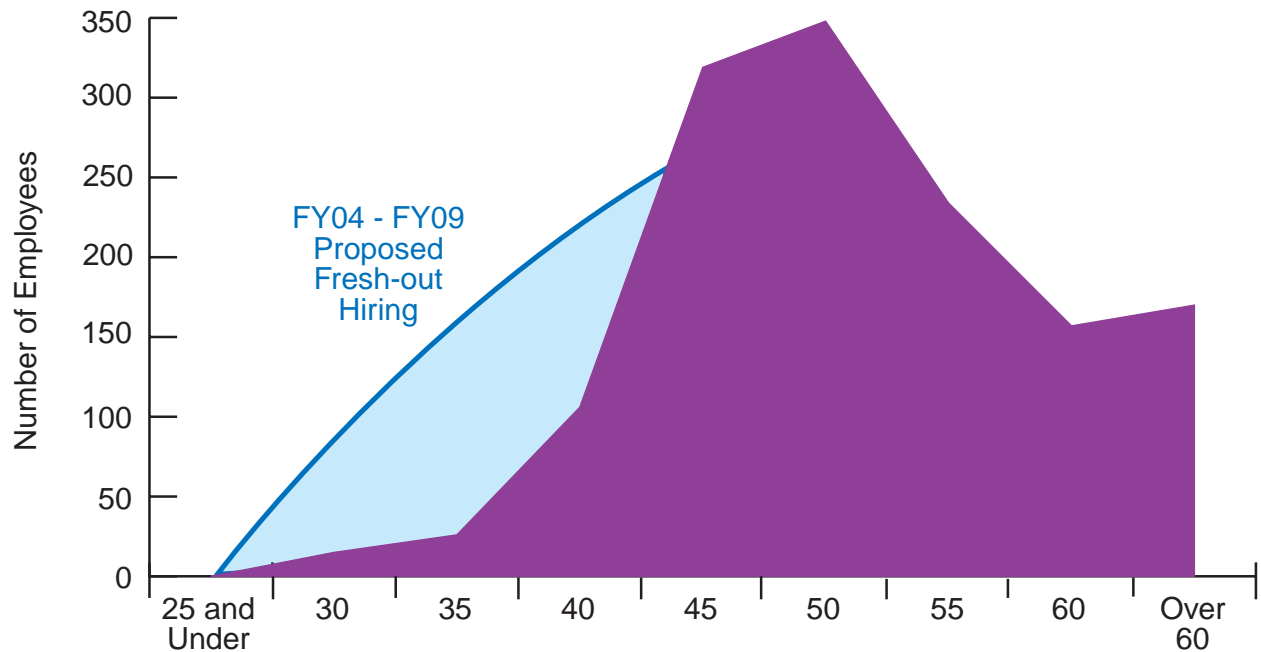
Leadership development program to nurture future NASA Corporate Executives through various mobility assignments.

KSC's human capital initiatives in previous years, and plans for the future, align directly with this vision. Many initiatives have been fully incorporated into Center operations, and others are being implemented incrementally. KSC strategically aligned our business documentation with employee performance plans using the Goal Performance Evaluation System (GPES). Establishing this common language prepared the Center for more sophisticated, automated tools such as the Manage to Budget (MTB) system. Training employees in

the 7 **Habits of Highly Effective People** laid the foundation for succeeding in a changing environment. The Leadership Excellence Achievement Program (LEAP) provides our supervisory team greater understanding of strategic human capital management. It introduced and reinforced supervisors' role in guiding organizational achievement. Direct access to automated workforce information enables more effective operations and personnel decisions. Future initiatives will continue to support these important goals.



**KSC C/S Age Distribution by Occupation  
(Projected by FY09)**



**Strategic Human Capital**

In the future, KSC will maintain our technical excellence while continuing to build a robust, agile, diverse workforce. We have established a strategic framework that is tied to results. When assessing workforce requirements to support NASA's future missions, the CMS is the primary tool for assessing our current capabilities. Attrition projections combined with competency information predicts future skill shortages and can help us strategically recruit, hire, and train.

Knowing and understanding the nature of the gaps in specific competencies, KSC can utilize the MTB process to determine the most feasible method of closing the gaps (e.g., train, hire, develop, outsource) within our budget. Managers are given the flexibility to address critical strategic and tactical human capital needs more efficiently and effectively and are encouraged to employ a more nontraditional workforce. Gap closure strategies are measured and tracked for the line organizations and the Center as a whole.

Since fewer and fewer American students are enrolling in the science and engineering (S&E) fields, specific Human Capital legislative flexibilities are essential in maintaining our world-class workforce and actively recruiting diverse S&E applicants. Legislative flexibilities such as Distinguished Scholar Hiring Authority, Scholarship for Service Program, and select Other Than Full-Time Permanent appointments will allow KSC to maintain a solid experience base, infuse new talent, and provide a flexible, adaptable workforce to meet future challenges.

The CMS will also be used for targeted recruitment of students studying science, technology, engineering, and mathematics into our progressive sequence of academic programs. This pipeline approach provides opportunities for students to contribute to the Center's priorities in their areas of study for a period of time prior to competing for positions within the KSC workforce. It also serves to identify seasoned, experienced faculty or graduate students who may have established competencies in an area where KSC has a competency gap.





## C. Infrastructure

KSC must ensure that its facilities and infrastructure are maintained and updated in order to serve both current operational processes, as well as processes that might accompany emerging technologies. We face the challenge of maintaining facilities in excess of 40 years old with the associated backlog of maintenance requirements. The need for maintenance and upgrade of current infrastructure is being addressed in order to assure safe and robust capabilities into the future. NASA's and KSC's highest priority is safety. In keeping with that value, facility projects that concentrate on safety-related issues are moved to the top of the list for immediate funding.

The Construction of Facilities (CoFF) program concentrates on prioritizations related to the most pressing maintenance and repair projects. Programmatic initiatives have also begun to address

critical new program-related infrastructure requirements. For example, the new Space Shuttle Service Life Extension Program will address infrastructure revitalization funding to maintain the program through FY 2020. As a result of this initiative, KSC will repair and upgrade Shuttle launch and landing facilities and related infrastructure. In addition, funding for core technical capabilities will be utilized to maintain vital laboratories and testbeds in a state of readiness. We will integrate our facilities' upgrade and new construction projects with the Center's future concept as presented in the Cape Canaveral Spaceport Master Plan.

### Real Property Strategies

KSC will continue to minimize other deficiencies in our infrastructure. We will restore and modernize facility systems affecting operational and institutional efficiency and reliability. We will



*This aerial photo captures many of the facilities involved in Space Shuttle activities including the Vehicle Assembly Building (VAB).*



*The Space Life Sciences Laboratory (SLSL) at Kennedy Space Center.*



revitalize facilities and facility-related systems infrastructure that have exceeded their life expectancy and demolish facilities that are beyond their useful function. We will continue to focus on elimination of unnecessary substandard and temporary shops and office space. These strategies will serve to improve workplace conditions affecting environmental health, industrial hygiene, quality of life, and employee morale.

NASA is aggressively pursuing innovative partnerships to address high priority needs for new facilities that will keep the Spaceport on the cutting edge. Using new legislative flexibilities, such as Enhanced Use Leasing Authority, we will continue to nurture partnerships and opportunities in the new 400-acre International Space Research Park. KSC

will pursue opportunities for facility commercialization and will leverage other investments with our partners in order to assure the future of our institutional base. The Space Life Sciences Laboratory (SLSL), developed in collaboration with the State of Florida, is a showcase example of such a partnership.

The Cape Canaveral Spaceport Master Plan provides a framework for the Spaceport's evolution, embracing change elements and technological advancements. KSC, the 45<sup>th</sup> Space Wing, and Florida Space Authority will jointly continue to improve and enhance the Cape Canaveral Spaceport Master Plan. Much of the Cape Canaveral Spaceport Master Plan will be Web-based and include information regarding strategic projects to support implementation.



Electronic links between the Master Plan and the existing Spaceport Geographic Information System (GIS) database clearinghouse will be made so that all maps referenced by the Master Plan will be delivered in real time. In the future, the Cape Canaveral Spaceport Master Plan's launch market prediction model, as well as other economic development models, will be used to forecast facility needs.

The Cape Canaveral Spaceport enjoys a unique relationship between advanced technology and rich natural resources. Future plans respect this coexistence. We will continue to practice responsible stewardship of our property and environment. KSC, in cooperation with our Spaceport partners, will remain a true national asset, essential to achieving the NASA Vision and Mission.

## Strategic Facility Projects and Initiatives

### International Space Research Park

In partnership with Florida Space Authority, KSC is planning to develop a research park to accommodate commercial and academic research and development activities to serve the space operations and technology needs of KSC.

### Operations Support Building II

KSC is building a 189,000-square-foot facility to serve Shuttle launch processing workers. The building will include a multimedia conferencing center and a launch viewing area.

### Air Traffic Control Tower

A modern Federal Aviation Authority control tower to serve the Shuttle Landing Facility is under construction. The tower will also provide support for around-the-clock observation of Eastern Range airspace.

### Vehicle Assembly Building Revitalization

KSC has programmed a multiyear project to revitalize the Vehicle Assembly Building, including new siding, doors, door mechanisms, and roof.

### Engineering Technology Development Complex

A facility project intended to consolidate KSC's high-technology labs into one building with the latest capabilities is in the early planning stage.

### Advanced Technology Development Center (ATDC)

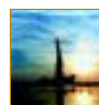
The ATDC is located at Launch Complex 20 on Cape Canaveral Air Force Station and will provide infrastructure to test, demonstrate, and qualify new spaceport technologies.

### Enhanced Use Leasing Pilot Project

NASA Headquarters selected KSC as demonstration center for Enhanced Use Leasing Authority.

### Orbital Space Plane

Planning is underway to provide the facilities and infrastructure support for assembly, processing, and launch of the Orbital Space Plane.

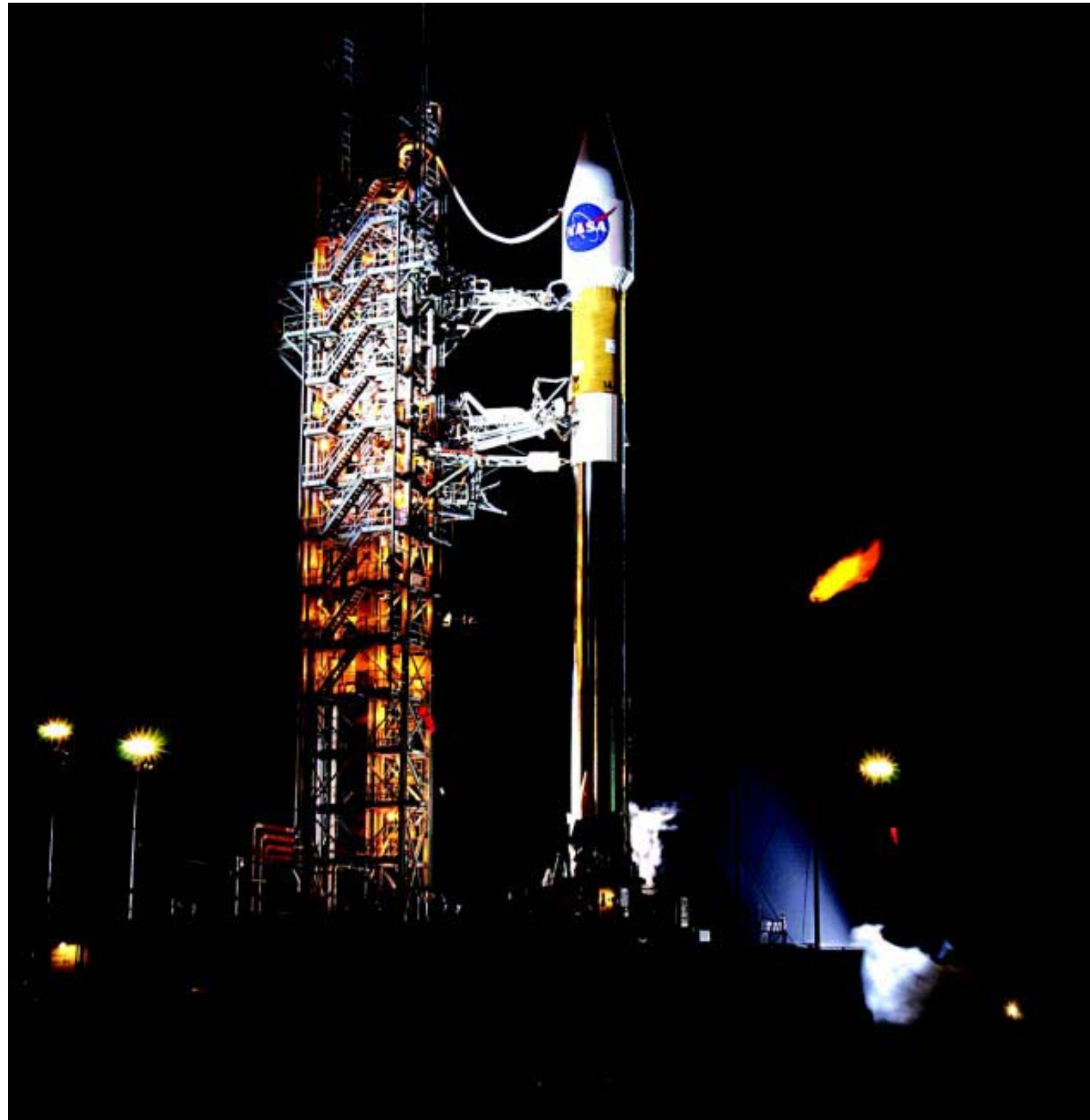






5

**KSC Support to  
the Implementing  
Strategies**



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# 5

## KSC Support to the Implementing Strategies

The five Implementing Strategies describe the framework under which NASA and KSC conduct business. KSC will adopt and practice these strategies to ensure that we work together to achieve NASA's Mission as safely and efficiently as possible.

### **IS-1. Achieve management and institutional excellence comparable to NASA's technical excellence.**

#### **President's Management Agenda**

NASA and the KSC fully embrace the principles of the President's Management Agenda as a tool to improve Government performance. KSC has been proud to play a role in the Agency's progress in the five Governmentwide initiatives:

- Strategic Management of Human Capital
- Competitive Sourcing
- Improved Financial Performance
- e-Government
- Budget and Performance Integration

#### **Institutions and Asset Management**

KSC will improve the institutional management of capital assets to ensure that our real property, personal property, processes, and systems are sustained and optimized to support NASA's missions and the capabilities required for today and tomorrow. KSC will use innovative and creative teaming approaches, including partnerships with the commercial sector and other Government agencies to ensure the most efficient possible use and improvement of NASA's capital assets.

*At Launch Complex 36-A, Cape Canaveral Air Force Station, the mobile service tower is rolled back to reveal the encapsulated TDRS-J satellite aboard an Atlas IIA vehicle awaiting launch.*



**IS-2. Demonstrate NASA leadership in the use of information technologies.**

The management, dissemination, and preservation of knowledge within KSC and the Agency are critical to the effectiveness of our programs, and the distribution of clear and timely information to the public will ultimately define our value to the Nation. KSC must build, upgrade, and maintain a secure, highly reliable local information technology infrastructure capable of supporting the Agency's goals of providing improved collaboration and superior information services both within and outside the Agency. Consistent with our leadership in deploying the NASA Management Information System (NMIS), KSC will proactively implement new NASA information technology initiatives. KSC will continue to support both Center and Agency-wide information technology requirements with a robust information technology development and operations workforce.

**IS-3. Enhance NASA's core engineering, management, and scientific capabilities and processes to ensure safety and mission success, increase performance, and reduce cost.**

KSC must maintain and continually improve its core capabilities in engineering, science, and technology. The successful management of programs and projects, including the appropriate oversight of their progress, is a key requirement for achieving NASA's Mission. Our program and project managers are challenged to enhance their expertise and to apply innovative techniques to improve safety and performance while reducing schedule and cost.

**IS-4. Ensure that all NASA work environments, on Earth and in space, are safe, healthy, environmentally sound, and secure.**

Our managers and employees are committed to making KSC work environments safe, healthy, and secure, both on Earth and in space. We will keep safety and security considerations foremost when we develop, operate, and manage NASA facilities and high-value equipment. This commitment to protect the public, the NASA workforce, and the assets under NASA's charge is distinctly reflected in the Agency's decisionmaking processes.

**IS-5. Manage risk and cost to ensure success and provide the greatest value to the American public.**

KSC will apply techniques for cost and risk analysis to improve safety and performance and use tools such as Earned Value Management and Continuous Risk Management to manage schedule and budget risks. Using these tools and techniques, KSC will make well-informed decisions on matters of critical mission importance.







## Acronyms and Web Sites



# Acronyms

<b>ASO</b>	Astronomical Search for Origins
<b>ASTAR</b>	Administrative Scheduling, Training, and Retrieving
<b>AT</b>	Aeronautics Technology
<b>ATDC</b>	Advanced Technology Development Center
<b>ATE</b>	Aerospace Technology Enterprise
<b>BOA</b>	Business Objectives & Agreements
<b>BSR</b>	Biological Sciences Research
<b>C/S</b>	Civil Service
<b>CMS</b>	Competency Management System
<b>CofF</b>	Construction of Facilities
<b>CVD</b>	Cardiovascular Disease
<b>EDL</b>	Engineering Development Laboratory
<b>ELV</b>	Expendable Launch Vehicle
<b>EP</b>	Education Programs
<b>ESA</b>	Earth Science Applications
<b>ESS</b>	Earth System Science
<b>FTE</b>	Full Time Equivalent
<b>FY</b>	Fiscal Year
<b>GIS</b>	Geographic Information System
<b>GPES</b>	Goal Performance Evaluation System
<b>HC</b>	Human Capital
<b>HR</b>	Human Resources

*Plant researchers prepare to harvest a crop of Waldann's Green Lettuce from KSC's Biomass Production Chamber.*



<b>HRDB</b>	Human Resources Development Board	<b>OMB</b>	Office of Management and Budget
<b>IFMP</b>	Integrated Financial Management Program	<b>OPF</b>	Orbiter Processing Facility
<b>IS</b>	Implementing Strategies	<b>OPM</b>	Office of Personnel Management
<b>ISS</b>	International Space Station	<b>OSP</b>	Orbital Space Plane
<b>ITTP</b>	Innovative Technology Transfer Partnerships	<b>PDM</b>	Position Description Manager
<b>JIMO</b>	Jupiter Icy Moons Orbiter	<b>PSR</b>	Physical Sciences Research
<b>KSC</b>	Kennedy Space Center	<b>R &amp; R</b>	Resupply and Return
<b>LC-39</b>	Launch Complex 39	<b>RPFS</b>	Research Partnerships and Flight Support
<b>LCC</b>	Launch Control Center	<b>S &amp; E</b>	Science and Engineering
<b>LEAP</b>	Leadership Excellence Achievement Program	<b>SEC</b>	Sun-Earth Connection
<b>LETF</b>	Launch Equipment Test Facility	<b>SEU</b>	Structure and Evolution of the Universe
<b>MEP</b>	Mars Exploration Program	<b>SFE</b>	Space Flight Enterprise
<b>MSM</b>	Mission & Science Measurement Technology	<b>SFS</b>	Space and Flight Support
<b>MTB</b>	Manage to Budget	<b>SLEP</b>	Shuttle Life Extension Program
<b>NASA</b>	National Aeronautics and Space Administration	<b>SLI</b>	Space Launch Initiative
<b>NGLT</b>	Next Generation Launch Technology	<b>SLSL</b>	Space Life Sciences Laboratory
<b>NMF</b>	Nonminority Female	<b>SSE</b>	Solar System Exploration
<b>NMIS</b>	NASA Management Information System	<b>SSP</b>	Space Shuttle Program
<b>NMM</b>	Nonminority Male	<b>STAR</b>	Spaceport Technology and Research
<b>NORS</b>	NASA Online Registration System	<b>STEM</b>	Science, Technology, Engineering, and Mathematics
		<b>VAB</b>	Vehicle Assembly Building
		<b>VPP</b>	Voluntary Protection Program



# Web Sites

## NASA Home Page

<http://www.nasa.gov/>

Provides up-to-date news on NASA's programs and activities, as well as a link to the various Enterprise home pages

## NASA Human Space Flight

<http://spaceflight.nasa.gov/>

The home page for NASA' Space Flight Enterprise provides direct links to Web pages for the Space Shuttle and International Space Station, as well as other information related to humans in space

## NASA Education Programs

<http://education.nasa.gov/>

The home page for NASA's Education Enterprise provides a variety of information about activities, events, and resources for teachers and students

## NASA Aerospace Technology

<http://www.aero-space.nasa.gov/>

The home page for NASA's Aerospace Technology Enterprise provides direct links to Web pages for the Space Launch Initiative, as well as other information related to aerospace

## NASA Budget Information

<http://www.nasa.gov/about/budget/index.html>

A compendium of current NASA budget and planning information and documentation

## Kennedy Space Center Public Home Page

<http://www.ksc.nasa.gov/>

A source of general information about Kennedy Space Center, its mission, and links to other NASA Web sites

## Kennedy Space Center Internal Home Page

<http://www.ksc.nasa.gov/nasa-only/internal.html>

The internal Web site for Kennedy Space Center organizational information and activities (internal access only)

## Kennedy Space Center Business World

<http://businessworld.ksc.nasa.gov/>

The Web site for Kennedy Space Center business documentation and information (internal access only)





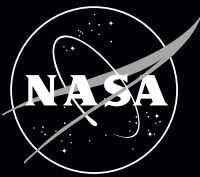


## The NASA Vision

To improve life here,  
To extend life to there,  
To find life beyond.

## The NASA Mission

To understand and protect our home planet,  
To explore the universe and search for life,  
To inspire the next generation of explorers  
... as only NASA can.



National Aeronautics and  
Space Administration

**John F. Kennedy Space Center**  
Kennedy Space Center, Florida 32899

<http://www.ksc.nasa.gov>

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