

National Aeronautics and Space
Administration

**Infrastructure Transition
Implementation Plan**

June 2009



This document is an official release of the Office of Infrastructure (OI), and is coordinated with the Exploration Systems Mission Directorate (ESMD), the Space Operations Mission Directorate (SOMD), and appropriate Headquarters Mission Support Offices . Its guidance shall be implemented by Center Institutional Offices and program elements of the combined directorates.

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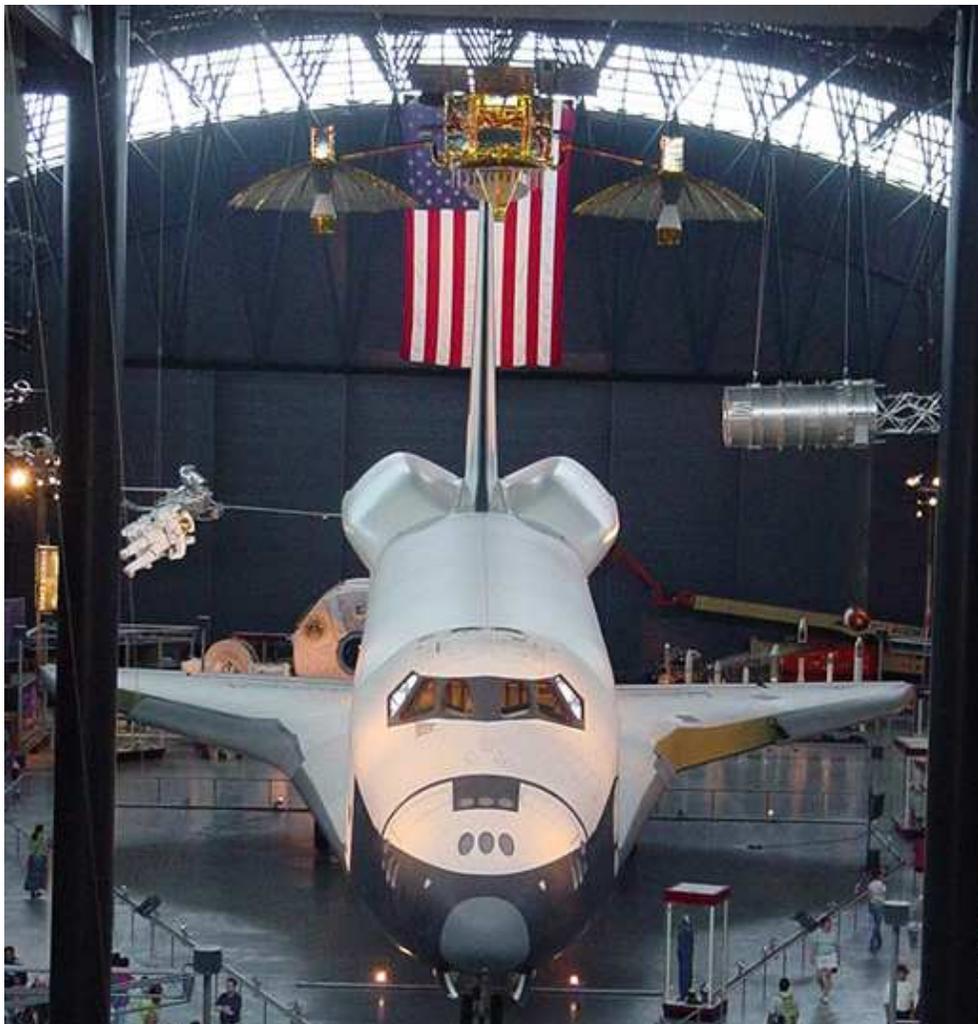
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1.0 Introduction

This Infrastructure Transition Implementation Plan serves as both a top-level strategic management plan and as an over-arching requirements document for management and execution of NASA Transition activity across the facilities and personal property portfolio. This plan contains the goals, objectives, roles, and responsibilities necessary to execute NASA Transition efforts to the fullest benefit of the Agency and the American public.

NASA conducts Transition activities consistent with the intent of NASA Policy Directive (NPD) 1000.0, NASA Strategic Management and Governance, and NASA Policy Requirement (NPR) 7120.5D, NASA Space Flight Program and Project Management Requirements, as well as with established Agency systems engineering and integration processes and management best practices. This document is governed by the NASA Transition Management Plan and will be updated as necessary.



An Orbiter on display

2.0 Infrastructure Transition



Discovery leaves the Vehicle Assembly Building to begin its trek to the launch pad.

For the infrastructure base, Transition requires the careful planning and optimized utilization of personnel, processes, resources across the Agency to effect the disposition of both real and personal property¹, while at the same time, leveraging existing assets for the safety and success of future exploration missions.

¹ Real property is land and facilities (i.e., buildings and other structures) that are owned, leased, or otherwise managed by NASA, and improvements thereto. Personal Property is any property except real property (land), real property improvements, buildings, and intellectual property such as software and data. Personal property includes supplies, materials, ground support equipment, and flight hardware.

2.1 Overview

In January 2004, the President of the United States announced a new plan to advance the Nation's scientific, security, and economic interests through a robust space exploration program that integrates human and robotic exploration activities. The U.S. Space Exploration Policy (NP-2004-01-334-HQ, *Vision for Space Exploration*) commits the United States to implement a sustainable and affordable human and robotic program to explore the solar system and beyond. This policy commits the Nation to extend human presence across the solar system, starting with a human return to the moon by the year 2020, in preparation for human exploration of Mars and other destinations. In announcing this policy, the President directed NASA to retire the Space Shuttle by 2010.

Under Presidential and Congressional direction, NASA will cease operations of its Space Shuttle Program (SSP) at all locations, including Kennedy Space Center (KSC), Johnson Space Center (JSC), Ellington Field (EF), El Paso Forward Operating Location (EPFOL), Stennis Space Center (SSC), Michoud Assembly Facility (MAF), Marshall Space Flight Center (MSFC), White Sands Test Facility (WSTF), Dryden Flight Research Center (DFRC), and Palmdale. SSP retirement necessitates the disposition of all SSP assets.

The Office of Infrastructure (OI) has the responsibility to ensure that all personal property and facilities are properly disposed in accordance with applicable laws and regulations. This complex task involves assessment of all real and personal property with respect to potential reuse; historic status;

applicability to laws and regulations pertaining to export control and the munitions control regime (International Traffic in Arms Control—ITAR), special handling requirements (e.g., safing, demilitarization, removal of sensitive information), and other factors that must be taken into consideration during the disposition process.



External Tank in the Vehicle Assembly Building

2.2 NASA Transition

The *NASA Transition Management Plan* (JICB-001)² defines NASA Transition as a framework for integration and management of the large-scale changes associated with implementing the U.S. Space Exploration Policy. Transition establishes rigorous,

² The NASA Transition Management Plan for Implementing the U.S. Space Exploration Policy (JICB-001) was released on December 18, 2008 and is available at www.nasa.gov/transition.

systematic processes for brokering mitigations to cost, schedule and mission success risks induced by the concurrent development of future Exploration capabilities, ongoing execution of spaceflight missions, and retirement of completed spaceflight programs.

Transition activities span the continuum that includes the near-term SSP Transition and Retirement (T&R) and the utilization of legacy assets by the Constellation Program (CxP); International Space Station Program (ISSP) changes due to Shuttle T&R activities; recurrent CxP Transitions from development to operations; and the transition of the Commercial Orbital Transportation Services (COTS) project towards the implementation of a viable commercial cargo and crew service for International Space Station (ISS) re-supply. In the near term, Transition is focused primarily upon the crosscutting activities associated with the completion of SSP and the beginning of Exploration activities.

2.3 Scope of Infrastructure Transition

The scope of infrastructure transition activities is extensive, with the Space Shuttle T&R effort being one of the largest that the Agency has ever undertaken. The SSP has an extensive array of assets; nationwide, the program occupies more than 654 facilities and comprises more than 1.2 million line items of related personal property. The total equipment acquisition value is over \$12 billion, spread across hundreds of locations. The total facilities replacement cost is approximately \$5.7 billion, which accounts for approximately one-fourth of the value of the Agency's total facility inventory. As of 2008, there are over 1,200 active suppliers for flight hardware and ground support equipment located throughout the United States.

Because of the size, complexity, and geographic dispersion of the SSP's assets, T&R requires extensive and careful preplanning. The infrastructure transition efforts described herein provide the framework for coordinating the smooth transition of SSP and ISS assets and capabilities to the next generation of exploration systems as the CxP matures, bringing new, U.S. human spaceflight capabilities that extend space exploration beyond low Earth orbit to the moon, Mars and beyond.

2.4 Infrastructure Transition Timeline and Milestones

The infrastructure transition timeline is driven by the Multiprogram Integrated Milestones (MPIM) schedule. The MPIM serves as an Agency-level Exploration roadmap that captures the primary human spaceflight program operations and acquisition milestones, including major infrastructure and industrial base drivers, in a single, Agency-integrated schedule. This schedule is updated and certified quarterly for use both internally and externally by NASA Headquarters (HQ), the Centers, institutions, programs, Congress,

the White House, media, industry, and others for planning of development, testing, operations, budgets, acquisition, production, and execution. An updated and current version is located on the NASA Transition website: <http://www.nasa.gov/transition>.

The Agency has achieved extraordinary progress so far. Significant steps have been taken to demolish facilities, dispose of personal property, and prepare for lease terminations with U.S. military host installations at Palmdale, California and White Sands, New Mexico. NASA is working closely with the General Services Administration to excess real property at the Santa Susana Field Laboratory (SSFL). On April 10, 2009, NASA determined that Agency real estate holdings at SSFL are no longer needed for mission requirements and notified the Congress of its intent to declare this real property as excess. On November 17, 2008, NASA submitted the SSP Personal Property Disposition Plan to Congress as required by the NASA Authorization Act of 2008. The Exploration Requirements for Institutional Capabilities (ERIC) facilities study has been completed and multiple facility transfers from SSP to CxP are planned at KSC, MAF, SSC and other locations. A T&R budget estimate for FY 2011 and beyond has been developed and submitted to OMB. Human Spaceflight Capability budget gaps and threats have been systematically reduced over the past two years. Historic eligibility surveys have been completed for all SSP facilities and related personal property assets. A preliminary listing of SSP facility demolition candidates has been developed. The SSP Transition Property Assessment (TPA) has been substantially completed and the Constellation Assessment for Personal Property (CAPP) is underway. A prescreening process for potential SSP artifacts is being developed and a Request for Information was issued to obtain input from museums and educational institutions on alternatives for placement of the Space Shuttle Orbiters and SSMEs. This progress reflects the NASA team's dedication to safely, successfully flying out the Space Shuttle manifest, and meeting the nation's commitments to its international partners.

3.0 Governance



Vehicle Assembly Building



International Space Station components



Atlantis landing

Successful transition of the Agency's infrastructure base depends upon a disciplined and robust framework that leverages Agency capabilities and partnerships.

3.1 Authority

OI and its Center counterparts are responsible for implementing the disposition of all Shuttle assets. Working through formalized infrastructure transition (iTransition) board processes, OI guides Agency, Program and Institutional decisions to effectively, efficiently and economically optimize the transition of all Shuttle assets, with careful consideration of the taxpayer interest and the Shuttle Program’s national significance in aeronautics and space history.



ISS Modules in preparation

3.2 Policies and Requirements Documents

Table 1, below outlines the list of primary NASA Policy Directives and NASA Procedural Requirements that are either directly applicable or related to NASA infrastructure transition. The list is not exhaustive of all relevant NASA directives. NASA infrastructure transition shall use existing guidance, processes, and or direction whenever applicable and appropriate. In the table below, policies with direct impact on the Transition efforts are labeled as “Applicable,” while policies that may be related or are tangentially related are labeled as “Related.”

Document Number	Document Name	Category
NPD 1000.0	Strategic Management and Governance Handbook	Applicable
NPD 1000.3	The NASA Organization	Applicable
NPD 1001.0	2006 NASA Strategic Plan	Applicable
NPD 1050.1	Authority To Enter Into Space Act Agreements	Related
NPD 1387.1	NASA Exhibits Program	Related
NPD 1440.6	NASA Records Management	Related
NPR 1441.1	NASA Records Retention Schedules	Related
NPD 1600.2	NASA Security Policy	Related
NPR 1600.1	NASA Security Program Procedural Requirements	Related
NPR 1620.3	Physical Security for Facilities and Property	Related
NPD 2110.1	Foreign Access to NASA Technology Transfer Materials	Applicable
NPD 2190.1	NASA Export Control Program	Related
NPR 2190.1	NASA Export Control Program	Applicable
NPR 2200.2	Requirements for Documentation, Approval, and Dissemination of NASA Scientific and Technical Information	Applicable
NPR 2210.1	External Release of NASA Software	Applicable
NPD 4100.1	Supply Support and Material Management Policy	Applicable
NPR 4100.1	NASA Materials Inventory Management Manual	Applicable

NPD 4200.1	Equipment Management	Applicable
NPR 4200.1	NASA Equipment Management Procedural Requirements	Applicable
NPR 4200.2	Equipment Management Manual for Property Custodians	Applicable
NPD 4300.1	NASA Personal Property Disposal Policy	Applicable
NPR 4300.1	NASA Personal Property Disposal Procedural Requirements	Applicable
NPD 4300.4	Use of Space Shuttle and Aerospace Vehicle Materials as Mementos	Applicable
NPR 4310.1	Identification and Disposition of NASA Artifacts	Applicable
NPD 7120.4	Program/Project Management	Related
NPR 7120.5	NASA Space Flight Program and Project Management Requirements	Related
NPD 7500.1	Program and Project Logistics Policy	Applicable
NPR 8000.4	Risk Management Procedures and Guidelines	Related
NPD 8010.3	Notification of Intent to Decommission or Terminate Operating Space Systems and Terminate Missions	Applicable
NPD 8500.1	NASA Environmental Management	Applicable
NPR 8553.1	NASA Environmental Management System (EMS)	Applicable
NPR 8580.1	Implementing The National Environmental Policy Act And Executive Order 12114	Applicable
NPR 8590.1	NASA Environmental Compliance and Restoration (ECR) Program	Related
NPD 8700.1	NASA Policy for Safety and Mission Success	Related
NPD 8800.14	Policy for Real Property Management	Applicable
NPR 8800.15	Real Estate Management Program Implementation Manual	Applicable
NPD 8810.2	Master Planning for Real Property	Related
NPD 8820.2	Design and Construction of Facilities	Related
NPR 8820.2	Facility Project Implementation Guide	Related
NPD 8831.1	Maintenance of Institutional and Program Facilities and Related Equipment	Related
NPD 9010.2	Financial Management	Applicable
JICB-001	NASA Transition Management Plan	Applicable

Table 1 – Associated NASA Policy Documents

3.3 Stakeholders

Infrastructure transition stakeholders are many, varied and widespread. Internal to NASA, the SOMD and ESMD, and their Space Shuttle, International Space Station, and Constellation Programs, are the primary customers supported through execution of this plan. Other stakeholders for the OI Transition efforts include NASA Headquarters Mission Support Offices, the Centers, the National Air and Space Museum, the General Services Administration, the Department of Defense, museums and educational institutions, media, and the American public.

3.4 Organizational Responsibilities

The Exploration Systems Mission Directorate (ESMD) and Space Operations Mission Directorate (SOMD) are the organizations primarily encompassed in the scope of Transition. SOMD is responsible for operating NASA’s space flight activities related to exploration in and beyond low-Earth orbit with a particular focus on human space flight, whereas ESMD is charged with developing new capabilities in support of the U.S. Space Exploration Policy.

Because infrastructure transition activities will impact multiple programs at multiple facilities, OI must closely coordinate its activities with the entire Headquarters Transition team, including ESMD, SOMD, and other Agency and Headquarters institutional offices providing policy, programmatic clarification, and coordination services in support of Transition efforts. Coordination occurs primarily between OI, ESMD, SOMD, the Office of Safety and Mission Assurance, the Office of Chief Engineer, Center Transition Managers, and Programs in order to facilitate the disposition of shuttle assets and optimize the use of existing facilities and assets for future exploration programs.

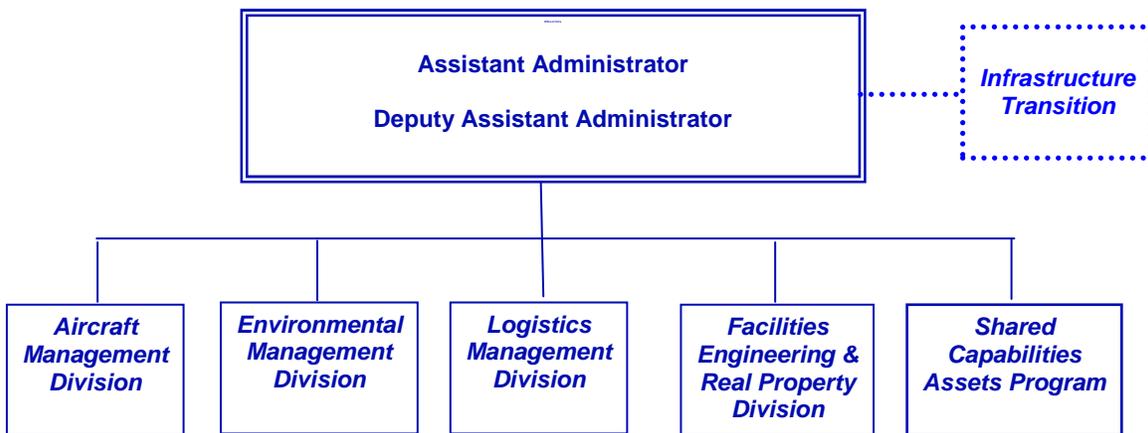


Figure 1 – Office of Infrastructure Organization Chart

3.5 Office of Infrastructure

OI provides oversight of Agency infrastructure and management of aircraft, environmental, facilities engineering and real property, logistics, and strategic capabilities assets. OI participates in the integrated Shuttle Transition planning for infrastructure to identify desired outcomes, goals, milestones, integration processes, priorities, and overall requirements and resources. OI has appointed a Transition Manager to manage OI Transition activities. The OI Transition Manager is responsible to the Assistant Administrator for OI for coordination of infrastructure-related NASA Transition activities across OI Divisions, with the ESMD and SOMD Transition

Managers, and with cognizant Center institutional offices.

3.5.1 Facilities Engineering & Real Property (FERP) Division

This OI Division is responsible for Agency-wide policies, guidance and direction governing real property management, including the disposition of excess real property. Also, FERP develops the Institutional Construction of Facilities program budget and oversee its implementation. The budget includes Facilities Planning and Design funds, construction and demolition funds for institutional projects. FERP is the approving authority for all Construction of Facilities projects that are estimated to cost \$500,000 or more regardless of funding source.

3.5.2 Logistics Management Division (LMD)

LMD is responsible for Agency-wide policies governing personal property management, including the disposition of excess personal property. These policies include personal property that may be considered historic artifacts, as well as assets that have technical utility or educational or public interest value.

3.5.3 Aircraft Management Division (AMD)

AMD manages NASA aviation resources and is responsible for the development and implementation of policies and guidance for the acquisition, and use and disposal of aircraft. Disposition of NASA aviation resources must follow regulations for restricted personal property.

3.5.4 Environmental Management Division (EMD)

EMD is responsible for policies governing NASA's compliance with Federal environmental regulations. These include the National Historic Preservation Act which addresses historic properties. Historic properties are typically real property. However, some personal property, such as the crawler transporters and the Space Shuttle orbiters are considered historic structures.

3.6 Office of Infrastructure Control Boards

Management control boards exist for cross-program and cross-office decision making. OI chairs two control boards to coordinate infrastructure transition as analogs to the Agency Joint Integration Control Board (JICB) and Transition Control Board (TCB).

3.6.1 Control Board Management and Membership

The Assistant Administrator for OI chairs the Infrastructure Joint Integration Control Board (iJICB) and Infrastructure Transition Control Board (iTTCB). The OI Transition Manager schedules Board activities, develops meeting agendas, and serves as executive

secretary. The iJICB and iTCB are chartered to coordinate infrastructure planning and institutional resource requirements in accordance with the evolving program requirements for institutional support of future programs, and the imminent divestment of an extensive assortment of assets upon SSP retirement. Key members include Office of Infrastructure; Office of Safety and Mission Assurance; Office of Chief Engineer; Exploration and Space Operations Directorate and Program Transition Managers, Deputy Center Directors, and Directors of Center Operations. Both Boards pass their findings, reports, and decisions to the Transition Control Board and Joint Integration Control Board. The relationship between these Boards are spelled out in the NASA Transition Management Plan (JICB-001). The iJICB and iTCB have operated independently since FY2008 but will be consolidated into a single board before the end of FY 2009 to streamline operations and improve efficiency.



Crawler Transporter

3.6.2 Infrastructure Joint Integration Control Board (iJICB)

The iJICB provides an integrated strategic direction to infrastructure transition activities and helps determine priorities, risks, and mitigation strategies for those activities. The iJICB also assists with defining budgets, schedules, and operational requirements. This Board is strategic in character. The iJICB Charter is available at: www.hq.nasa.gov/oia/nasaonly/itransition/iJICB_Charter.pdf.

3.6.3 Infrastructure Transition Control Board (iTCB)

The iTCB serves as a collaborative, tactical, decision-making body focused on disposition of SSP assets in accordance with future exploration needs. The iTCB conducts three types of briefings: decision-making, information-only, and review of previous actions. The iTCB Charter is available at: www.hq.nasa.gov/oia/nasaonly/itransition/iTCB_Charter.pdf.

3.7 Other Headquarters Offices

Several other Headquarters Offices support iTransition activities through their assigned functional leadership responsibilities, direct participation in Control Board activities, or in an advisory capacity.

3.7.1 Office of Safety and Mission Assurance

The Office of Safety and Mission Assurance (OSMA) provides policy direction, functional oversight, and assessment for all Agency safety, reliability, maintainability, and quality engineering and assurance activities, and serves as the principal advisory resource for the Administrator and other senior officials on matters pertaining to safety and mission success. OSMA is a member of the OI Transition Board structure to ensure incorporation of safety considerations and risk management best practices in the Transition decision processes.

3.7.2 Office of the Chief Financial Officer

The Office of the Chief Financial Officer (OCFO) provides leadership for the planning, analysis, justification, control, and reporting of all Agency fiscal resources; oversees all financial management activities relating to the programs and operations of the Agency; leads the budgeting and execution phases of the planning, programming, budgeting, and execution process; and monitors and reports the financial execution of the Agency budget. OCFO is a member of the OI Transition Board structure to ensure sound financial management policies and procedures are applied across all infrastructure transition activities.

3.7.3 Office of the Chief Information Officer

The Office of the Chief Information Officer (OCIO) provides leadership, planning, policy direction, and oversight for the management of NASA information and all NASA information technology (IT) in accordance with the responsibilities required by the Clinger-Cohen Act of 1996, the Paperwork Reduction Act of 1995, the E-Government Act of 2002, the Federal Information Security Management Act of 2002, and the Privacy Act of 1974. OCIO provides guidance and support to iTransition on matters pertaining to information technology, the NASA Enterprise Architecture, IT security, records management, and privacy.

3.7.4 Office of the Chief Engineer

The Office of the Chief Engineer (OCE) provides policy direction, oversight, and assessment for NASA engineering and program/project management. OCE is a member of the OI Transition Board structure to ensure the engineering integrity of iTransition decision processes.

3.7.5 Office of Human Capital Management

The Office of Human Capital Management (OHCM) is responsible for developing and aligning NASA civil service workforce strategies, programs, policies, and processes

with the Agency's mission, strategic goals, and desired performance outcomes. OHCM establishes Agency-wide civil service workforce management policies; defines strategies and architectures; defines program objectives and top-level requirements; ensures statutory and regulatory compliance; ensures consistency across the Agency, as appropriate; and monitors program performance. OHCM is a member of the OI Transition Board structure to ensure that workforce considerations are taken into account in all iTransition decision processes.

3.7.6 Office of Procurement

The Office of Procurement provides executive leadership, policy direction, and functional management of procurement and financial assistance activities (excluding Space Act Agreements) for the entire Agency. The Office of Procurement is a member of the OI Transition Board structure to ensure procurement integrity in all iTransition activities that involve Requests for Information, procurement solicitations, and acquisition contracting.

3.7.7 Office of the General Counsel

The Office of the General Counsel (OGC) establishes Agency-wide legal policy, provides legal advice, assistance, and Agency-wide functional guidance, ensures the appropriateness of all legal actions and activities Agency wide, and provides binding formal legal opinions on Agency matters. OGC is a member of the OI Transition Board structure to ensure there is sound legal basis and for all infrastructure transition activities and process innovations.

3.7.8 Chief of Strategic Communications

The Chief of Strategic Communications works to promote effective NASA communications by ensuring synergy and strategic focus among the Offices of Education, Legislative and Intergovernmental Affairs, and Public Affairs. The Assistant Administrators for the Offices of Education, Legislative and Intergovernmental Affairs, and Public Affairs each reports to the Chief of Strategic Communications. The Office of Public Affairs (PAO) is a member of the OI Transition Board structure to ensure that iTransition activities are appropriately communicated to external stakeholders and the public. PAO also manages the NASA Exhibits Program and resolves conflicting requests for space artifacts within NASA and between NASA and NASM. The Office of Legislative and Intergovernmental Affairs supports iTransition by communicating and coordinating with the Congress and other governmental entities.

3.7.9 Office of External Relations

The Office of External Relations (OER) provides executive leadership and coordination

for all NASA international activities and partnerships and for policy interactions between NASA and other U.S. Executive Branch offices and agencies. OER serves as the principal Agency liaison with the National Security Council, the Office of Science and Technology Policy, the Department of State, and the Department of Defense. OER also directs NASA's international relations; negotiates cooperative and reimbursable agreements with foreign space partners; provides management oversight and staff support of NASA's advisory committees, commissions and panels; manages the NASA Export Control Program and policy regarding foreign travel by NASA employees and manages the NASA History Division. OER provides guidance and support to iTransition on matters pertaining to Export Control, ITAR, and associated requirements for property disposition. The NASA History Division also supports iTransition by providing historic information about the Space Shuttle Program and legacy programs to support historic preservation and artifact determination activities.

3.7.10 Office of the Chief Health and Medical Officer

The Office of the Chief Health and Medical Officer (OCHMO) serves as the focal point for policy formulation, oversight, coordination, and management of all NASA health and medical matters in all environments, and medical emergency preparedness and contingency operations and response. OCHMO provides guidance and support to iTransition on matters pertaining to protecting the NASA workforce and the public from hazardous materials and other threats to human health during property disposition activities.

3.7.11 Office of Program and Institutional Integration

The Office of Program and Institutional Integration (OPII) integrates decision-making processes and identifies and resolves issues that cross programmatic and/or institutional lines and provides independent leadership and decision making for selected cross-cutting initiatives. OPII is a member of the OI Transition Board structure to ensure that institutional requirements for T&R are considered and integrated into the budget process and that NASA's post-T&R infrastructure is well positioned to meet ongoing and future mission requirements.

3.8 Centers

SSP sustainment and operations activities are concentrated primarily at the Johnson, Kennedy, and Stennis Space Centers, and the Marshall Space Flight Center and its Michoud Assembly Facility. With the development of new exploration capabilities, work is shared across all ten NASA Centers, distributed by Center according to skills, expertise, core competencies, availability, and capacity. As a result, the impact of Transition is expected to vary among the Centers, and will require local management of

issues particular to individual Centers. Affected NASA Centers are engaged in Transition to the extent that they must adequately plan and implement asset disposition, facility utilization and workforce migration. Centers are encouraged to conduct focused Center Transition planning and develop and apply resources to individual Center Transition plans, guidance and implementation strategies, as necessary.

3.9 Programs

The primary programs dealing with the near-term Transition activities are the SSP, ISSP, and CxP. All of the other programs within the SOMD/ESMD portfolios are potentially impacted by SSP retirement, and are engaged as appropriate in the NASA Transition effort.

3.9.1 Space Shuttle Program

Within the SSP, T&R is jointly managed by the SSP (Level II) Business Office and the SSP Management Integration & Planning Office. The SSP tracks budget, schedule, and management activities associated with the end of the Program, using accepted program and configuration management principles consistent with the intent of 7120.5D. The governance and organization structure for executing T&R post-2010 is under development.

3.9.2 International Space Station Program

The ISSP fully participates in the planning and implementation of Transition activities to ensure coordinated assessment of assets, facilities, and capabilities throughout the Transition continuum. ISSP budgets for and manages impacts resulting from Shuttle Transition and Retirement (STaR) via the annual Agency PPBE process.



Shuttle *Atlantis* (STS-98) docking with ISS

3.9.3 Constellation Program

The implementation of Transition-related activities for the CxP is managed by the Constellation Transition Manager. In many cases, Transition activities are consistent with the developmental program management activities already being accomplished by

the Programs and Projects. However, Transition-related workforce, infrastructure, property transfers, schedule conflicts and issues, program phasing, industrial base, and risk management activities are specifically addressed within the responsible elements of the Program office. The CxP tracks budget, schedule, and management activities in conjunction with the SSP Business and Management Integration & Planning Offices, using accepted program and configuration management principles consistent with the intent of 7120.5D.

3.9.4 Commercial Crew and Cargo Program

The Commercial Crew and Cargo Program Office (C3PO) manages Commercial Orbital Transportation Service (COTS) capability demonstration projects, referred to as Phase I. C3PO pursues funded and non-funded Space Act Agreements (SAAs) with companies to demonstrate orbital spaceflight capabilities. The COTS Phase I demonstrations are being managed by ESMD. Excess property from SSP disposition activities that is not needed by the CxP is prioritized and evaluated for applicability to C3PO activities where benefit to the Government may occur in order to further enable overall COTS success.

3.10 Other iTransition Organizations

The implementation of iTransition activities is managed by the Transition Manager for Infrastructure. The Transition Manager for Infrastructure leads the an informal, matrixed network known as the iTransition team which comprised of civil service and contractor representatives from ESMD and SOMD, OI Divisions, other Mission Support Offices, and Center Institutional Offices. The Transition Manager for Infrastructure also leads several ad hoc working groups including the Agency SSP Artifacts Working Group. In addition, NASA management organizations, including the Operations Management Council (OMC), the Program Management Council (PMC), the Strategic Management Council (SMC), and monthly Baseline Performance Reviews (BPR), provide guidance and oversight to the iTransition efforts. In addition, the decisions resulting from the iTCB and iJICB may be reported to the higher level organizations.

3.10.1 Agency SSP Artifacts Working Group

The Agency SSP Artifacts Working Group is tasked by the Assistant Administrator for Infrastructure to support and effect efficient and expeditious disposition of Space Shuttle artifacts during program closeout and planning for closeout, and to enable preservation of historically important Shuttle-related property in the national interest, including items that belong in the national collection. The Working Group membership is shown in Table 2 below.

Organization	Member
Chair	Transition Manager for Infrastructure
OI	Deputy Transition Manager
JSC, KSC, MSFC	Property Disposal Officer Representatives
OI/Logistics Management Division	Director
OI/Logistics Management Division	Artifacts Lead
Office of Public Affairs	Exhibits Manager
OI/Environmental Management Division	Cultural Resources Management Lead
Office of General Counsel	Attorney Advisor
SSP Business Office	Artifacts Lead
Office of External Relations	Export Control Representative (as needed)
History Office	Representative (as needed)
ARMD, ESMD, SMD, and SOMD	Representative (as needed)

Table 2 – Agency SSP Artifacts Working Group Membership

The Working Group is tasked to:

- a) Provide guidance to Centers to bring consistent approaches to SSP artifact management by creating and sustaining policy and execution continuity between Centers engaged in SSP Transition and Retirement.
- b) Determine which potential artifacts identified by the SSP should appropriately be designated and managed as artifacts or historically significant items at an Agency level.
- c) Maintain and update a consolidated “SSP Agency Artifacts” list to capture items so identified across the Agency.
- d) Review the Transition Property Assessment (TPA) data (and other property databases) to identify SSP Agency Artifacts.
- e) Identify and flag related property and ancillary items needed for effective technical display and storytelling.
- f) Manage the prescreening process for items determined to be significant artifacts or themes, and resolve competing non-NASM external requests for those items.
- g) Refer competing requests for artifacts within NASA to the NASA Artifacts Committee referenced in NPR 4310.1.
- h) Provide NASA with the ability to respond to external queries pertaining to its artifact placement process in a coordinated fashion.
- i) Develop and implement procedures and processes that result in total asset visibility and accounting of artifacts used in support of public affairs, industrial outreach, and education programs.

3.11 Communications Strategy

Internal and external communications of iTransition activities, products, and results will be implemented through a variety of media.

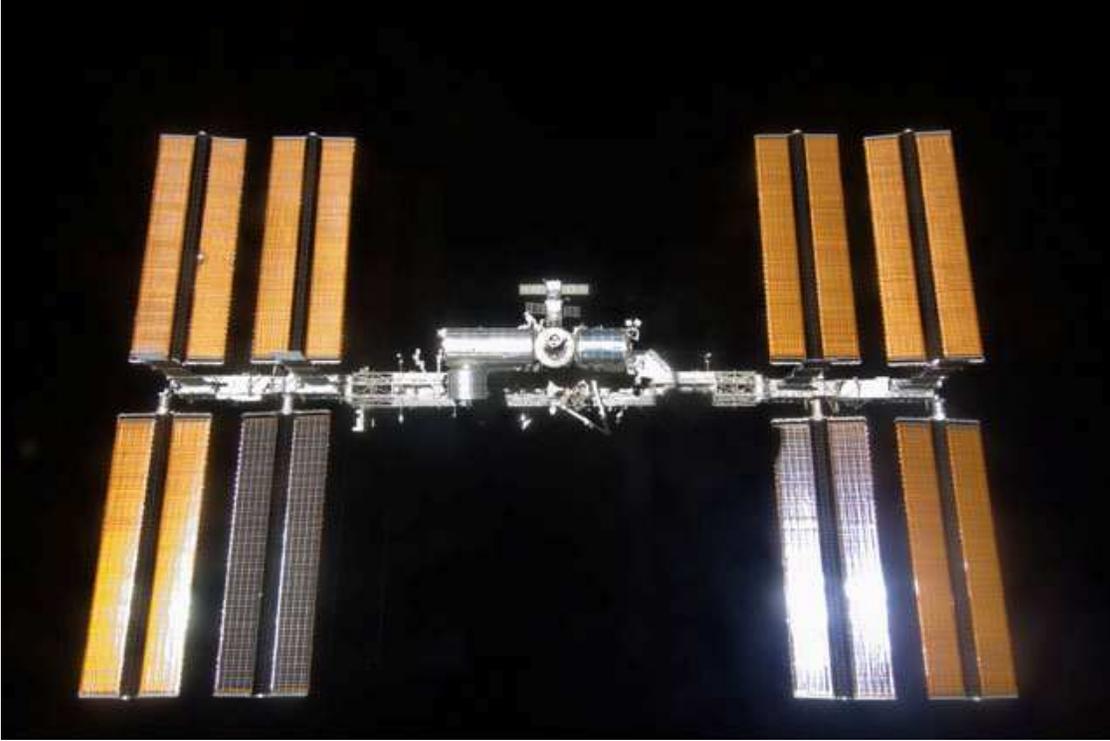
3.11.1 Internal Communications

NASA's Integrated Collaborative Environment (ICE) tool is used to maintain an internal, electronic repository of Transition information. A secured archive library of iTransition material is maintained using ICE's Windchill client. This library contains most iTransition documents, plans, meeting minutes and presentations and provides members of the iTransition Team with a single source for information. Access to the iTransition Windchill site is controlled by the Transition Manager for Infrastructure. The Transition Manager for Infrastructure also maintains an internal iTransition Web site (<http://oim.hq.nasa.gov/oia/nasaonly/itransition/index.html>), accessible to any user within the NASA domain. This iTransition Web page was created to allow the HQ iTransition team to share information, guidance, and internal work products with other Transition team members across the Agency. A series of iTransition white papers are being developed and posted on the iTransition web page to provide guidance to the Centers on various aspects of SSP property disposition. An online archive of iJICB and iTCB agendas, presentations, minutes, and actions items as well as various other iTransition documents is maintained using NASA's Process-Based Mission Assurance (PBMA) tool (<https://secureworkgroups.grc.nasa.gov/itransition>). Access to this site is by invitation only and is controlled by the Transition Manager for Infrastructure.

3.11.2 External Communications

NASA employs a dedicated, public, Transition Web site (www.nasa.gov/transition), as a single source of Transition information. This web site is used as the primary medium for communicating with audiences external to NASA. Other external communication methods being used include conference presentations, talking points, media events and content, Congressional reports, and Agency forums. Outreach to the museum and educational communities has been an area of particular emphasis. An information pamphlet on Space Shuttle Program Artifacts has been produced and the Transition Manager for Infrastructure and the OI Director of Logistics have addressed these communities at numerous conferences, meetings, telecons and video telecons.

4.0 Strategic Planning



The International Space Station near its final configuration after the successful STS-119 mission

All Transition activities will leverage the Agency's rich human and robotic spaceflight legacy and experience for the benefit of sustainable exploration of the moon, Mars, and beyond.

4.1 Strategic Planning

The NASA Transition Management Plan (JICB-001) provides the strategic foundation for the management and execution of Transition efforts. Comprehensive, rigorous, and careful Transition planning is critical to the future success of NASA's programs and projects. Leveraging the Agency's robust human and robotic spaceflight program experience base is an essential component of Transition planning and execution strategies and will provide optimal benefit to the exploration program.

The SSP, ISSP, and CxP are each in different lifecycle phases, which are defined in NPR 7120.5D. As such, the OI Transition activities conducted within each Program will be managed as a continuum and consistent with the intent of NPR 7120.5D processes applicable to that phase. The Program activities will then be integrated within the established Transition management processes.



Artist concept: Orion/Ares I on "clean" launch pad

While NASA addresses Space Shuttle hardware disposition, the Agency must manage and mitigate the associated impacts to the schedules and lifecycle configurations of ISSP, CxP, C3PO, and their associated projects. Decisions must be made regarding which facilities, hardware, tools, and processes will be needed for the new programs, in addition to determining the additional infrastructure challenges which will confront the existing programs as a result of Transition activities. Program requirements will continue to drive infrastructure needs up to the point at which facilities and property enter the disposition process. Post-2010, the

Agency will disposition residual assets and resources remaining from the SSP. This activity could have significant negative impact on the remaining programs unless the effort is properly planned and executed appropriately. Figure 2 presents a notional schedule of the time frame for dispositioning excess Shuttle property at NASA Centers, Component Facilities and major contractor off-site locations based on PPBE 2011 budget planning guidance.

Many of the heritage SSP assets and infrastructure will form key elements of the overall exploration architecture. For some elements of Constellation, the Shuttle-derived exploration architecture and associated Shuttle hardware were found to be more

affordable, safe, and reliable than other approaches. In turn, this provides an opportunity for a relatively smooth Transition of these existing facilities to ensure lower schedule and lifecycle costs, and to reduce industrial base and programmatic risks.

	FY08	FY09	FY10	FY11	FY12	FY13	FY14	FY15	FY16
Kennedy Space Center	Red								
Excess Immediately	Blue								
Disposition in place at Center	Blue								
Disposition in place and Contractor/Offsite	Blue								
Transfer Line Items	Blue								
Johnson Space Center	Red								
Excess Immediately	Blue								
Disposition in place at Center	Blue								
Transfer Line Items	Blue								
Marshall Space Flight Center	Red								
Transfer Line Items	Blue								
Stennis Space Center	Red								
Disposition in place at Center	Blue								
Transfer Line Items	Blue								
Dryden Space Flight Center	Red								
Disposition in place at Center	Blue								
Transfer Line Items	Blue								
White Sands Test Facility	Red								
Excess Immediately	Blue								
Disposition in place at Center	Blue								
Disposition in place and Contractor/Offsite	Blue								
Transfer Line Items	Blue								
Michoud Assembly Facility	Red								
Excess Immediately	Blue								
Disposition in place and Contractor/Offsite	Blue								
Transfer Line Items	Blue								
Remote - ATK	Red								
Excess Immediately	Blue								
Transfer Line Items	Blue								
Remote - PWR - Canoga Park	Red								
Excess Immediately	Blue								
Transfer Line Items	Blue								
Remote - PWR - West Palm Beach	Red								
Excess Immediately	Blue								
Transfer Line Items	Blue								
Remote - Boeing Huntington Beach	Red								
Excess Immediately	Blue								
Transfer Line Items	Blue								
Remote - Boeing Palmdale	Red								
Excess Immediately	Blue								
Transfer Line Items	Blue								
Remote - Other Sites	Red								
Disposition in place and Contractor/Offsite	Blue								

Figure 2: Notional Schedule of Shuttle Property Disposition

4.2 OI Transition Goals and Objectives

OI activities support the achievement of Transition goals and objectives related to infrastructure and property transition established in the NASA Transition Management Plan (JICB-001). OI primarily supports Transition Goal 1 and the first four objectives related to that goal:

Transition Goal 1: Enable more efficient and more cost-effective human spaceflight capabilities in pursuit of space exploration through maximized leverage of Shuttle assets.

Objective 1.1: Plan and implement Transition activities that have minimal impact to the risk posture and safe execution of SSP, ISSP, and CxP.

Objective 1.2: Provide accurate, timely, and effective information to Transition stakeholders.

Objective 1.3: Disposition property as it is no longer needed in an optimal manner, considering budget and resources.

Objective 1.4: Preserve technical, programmatic, and cultural legacy of SSP, ISS, and CxP consistent with federal statutes, regulations, and Presidential Directives while still driving for efficiency and cost effectiveness in these tasks.

4.3 T&R Principles of Property Disposition

OI will apply the following principles of property disposition in achieving these objectives. Personal property disposition activities will:

- Support the safe completion of all remaining Space Shuttle missions;
- Be disciplined, fair, transparent, and compliant with laws and regulations³;
- Provide personal property placement opportunities to preserve history of the Space Shuttle Program;
- Balance potential value to the public with least cost to the taxpayer; and,
- Include appropriate stakeholders and subject matter experts in the planning phase of the disposition process.

³ NASA may request modifications to codes, regulations and laws to enable the lowest cost disposition to the taxpayer, while providing opportunities for educational institutions, science museums, and other appropriate organizations to acquire educationally useful property and items designated as potential artifacts.

In addition, real property disposition activities will:

- Consolidate and or reduce NASA footprints to appropriately support the Agency;
- Involve external communities;
- Maximize reutilization strategies to benefit the national interest and technological capability base;
- Deconstruct facilities where appropriate, and leverage existing resources to maximize the economic value of investments; and
- Prepare effectively for the future transformation of the Agency.

4.4 Risk Management/Opportunity Management

NASA must have sustainable operations and facilities to support its long-term exploration vision of the Moon, Mars, and beyond. NASA Centers must be able to sustain and protect their institutional and strategic capabilities. As such, NASA focuses on managing risk in a high-performance environment; it confronts immense challenges, and through intelligent, deliberate decisions helps to overcome them. Identifying strategic risks to NASA's mission and vision are critical to mission success.

OI employs a risk management methodology used by NASA program/project managers to frame its risks. This approach includes: a risk statement following the condition-consequence format; likelihood, impact, and timeframe of the risk; and a Harvard Business Review methodology of risk timing window and risk changing over time. Risks are then projected onto a risk matrix to identify whether the risk is low, medium, or high priority.

There are four management roles in the OI risk management methodology. They are the OI Risk Manager (RM), the Risk Management Board (RMB), the Risk Management Team (RMT), and the Division Risk Management Officer (RMO). The RM is the individual responsible for implementing and maintaining the OI Risk Management Plan, and the OI Continuous Risk Management process. The Assistant Administrator for Infrastructure, the Deputy Assistant Administrator and Division Directors form the management-level RMB. The working-level RMT is comprised of Division RMOs. The Division RMOs serve as the focal point for risk management and advance the use of risk management principles within their respective Divisions. Due to their cross-functional nature, infrastructure transition risks are identified, communicated, and tracked in a category separate from OI Division risks. However, they are reviewed, approved and managed following the common OI risk management methodology.

Risks are communicated up and down the OI risk management hierarchy to ensure that appropriate visibility, management attention, and resources are directed toward each risk. Transition risks are elevated to the iJICB and iTCB when appropriate. Risks requiring additional attention are elevated to the JICB and TCB or even higher levels. Risks may be identified at any level, although, because of their close familiarity with the work, the Division RMOs will most likely identify a majority of potential risks to NASA's mission and programs. Candidate risks are communicated to the Risk Management Team (RMT) for initial coordination. The RMT reports its findings to the Risk Management Board (RMB). The RMB determines whether identified risks should be managed at the OI Directorate level or at the Division level. The goal of this process is to elevate risks to the appropriate management level to support informed decision-making. Risks can also flow down through the chain so that they are assigned to the appropriate level for their management and mitigation.

After identifying and assessing the severity and likelihood of each risk, potential mitigation strategies are proposed to minimize the impact to NASA. In some instances, such as potential budget cuts from Congress or severe environmental threats, the temptation is to say that no mitigation is possible, and that NASA must simply accept the risk. Such an approach is antithetical to the forward-thinking attitude of the Agency. While some risks are primarily due to outside forces beyond NASA's control, OI finds aspect of those risks that are within its purview to affect, either as an office or as an Agency. Every mitigation OI implements helps protect NASA and our ability to achieve our mission.

Viewing this process from another angle, all risks are opportunities to improve NASA's effectiveness. For example, a risk relating to outreach planning and communication for SSP artifacts provides an opportunity for NASA to prescreen potential SSP artifacts with eligible recipients thereby giving those organizations extra time to raise funds required to acquire desired artifacts. This helps the recipients acquire the most appropriate artifacts for their collections and allows NASA to reduce T&R costs for items that would otherwise need to be excessed. Alternatively, NASA could capitalize on its brand to form strategic alliances with organizations dedicated to outreach with museums and educational organizations to improve communications with the targeted audience.

4.5 Benchmarking

NASA conducted a number of benchmarking studies of previous, large-scale, high-technology program Transitions, including the Titan IV rocket flyout, the F-14 fighter production closeout, the F-117 program closeout, and Navy base realignment and closure

activities. Through benchmarking these program closeouts, NASA captured lessons learned that might apply to infrastructure transition activities.

5.0 Implementation and Management



Artist's concept of landing on the moon to begin work on the lunar outpost



Artist's concept of Ares I launch

A successful Transition will preserve the Agency's critical infrastructure assets, enabling a challenging and dynamic exploration mission. Disposition of Shuttle assets will be driven by the needs of Constellation and other NASA programs and projects.

5.1 Infrastructure and Property Disposition Implementation Overview

The infrastructure base currently used by the SSP is both extensive and widely distributed. Components of that SSP infrastructure, including both real and personal property, must be dispositioned by either excessing or transferring to follow-on programs. Accordingly, it is prudent to have an integrated strategy for the disposition of SSP property to achieve the most cost-effective approach and minimize the potential resource impact to the missions of the Agency.

The SSP must ensure that sufficient resources are applied for proper accounting of both real and personal property prior to SSP retirement. This includes a descriptive inventory of property, in accordance with NASA policy and contract requirements, to enable effective property disposition planning by NASA Headquarters and the affected Centers. After SSP's retirement, the Centers will be responsible for appropriately disposing of any remaining property.

The SSP will determine when SSP assets and capabilities are no longer needed and can be dispositioned. Exploration Programs (particularly CxP, but also C3PO) will determine when current SSP assets will be needed for use in the Constellation systems' development and identify in a timely manner those first need dates.

Currently NASA expects to have 1.2 million line items of property that will either be transferred to CxP or another NASA program, or dispositioned through the excess process. The notional burndown chart of this property is provided in Figure 3 below. Note that this chart is subject to change as transition plans are refined.

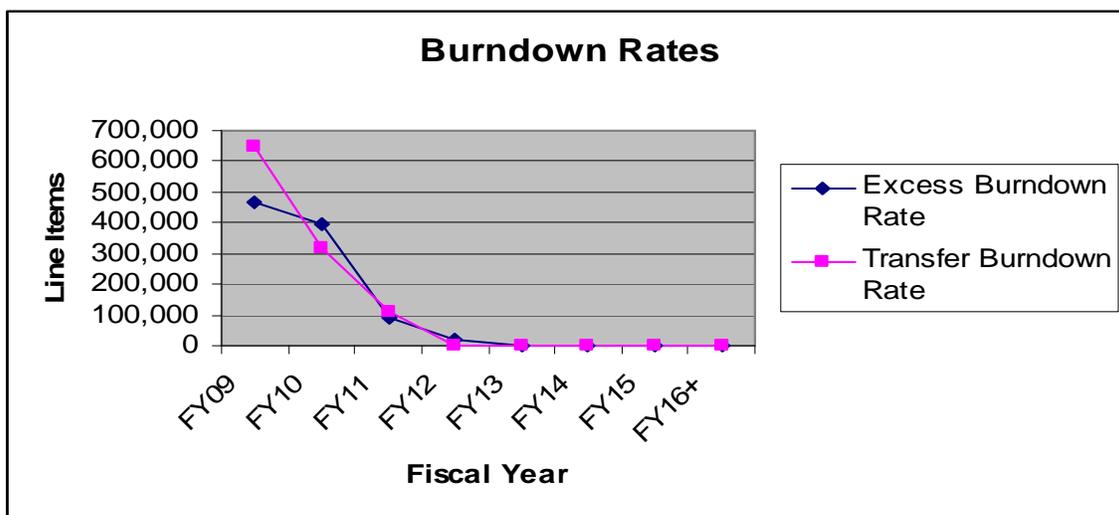


Figure 3 – Notional Burndown Rates for Transfer and Reporting of Excess Shuttle Personal Property

Conflicts between need dates (i.e. gaps and overlaps) will be adjudicated through the Transition Board structure. Affected Centers will coordinate with the Programs and OI to provide information on the anticipated usage of institutional assets across the Agency. This will include their anticipated usage by SSP, exploration programs, and others. Additionally, the SSP, in close coordination with Level 1 organizations, shall identify appropriate end-state requirements for major elements of the Program that will be preserved.

For property that is determined to be excess to the needs of NASA, policies and procedures are in place to handle the disposition. Personal property and assets will be handled in accordance with the versions of NPD 4300.1 and NPR 4300.1 in effect at the time of disposition. Real property will be handled in accordance with the versions of NPD 8800.14 and NPR 8800.15 in effect at the time of the disposition decision.

Property disposition activities will comply with all policies, rules, and regulations via NASA procedures, including the latest versions of: NPR 2190.1, NPR 2200.2, NPR 2210.1, and NPD 2110.1 unless specific waivers, deviations, or exceptions are granted by the appropriate approval authorities. NASA's property disposition actions must comply with Export Control laws and ITAR in determining if property can be released outside NASA or the Federal government, or what restrictions are passed to the receiving organizations. Some items may not be able to be released from NASA to the public, or may need to be substantially modified or even destroyed to prevent release of export controlled information.

No separate export control or ITAR plans are anticipated, although all NASA policies and procedures for export and ITAR control apply to the property disposition process. Each Center shall establish a process for making export control determinations for excess SSP property.

5.2 Legislative Authority

The close of a program as large as SSP will result in the retirement of large quantities of equipment and supplies. These unusually large quantities will require implementation of innovative approaches and strategies within the disposition process in order to properly complete the process within existing budget and time constraints. While the principles, laws, regulations and processes are applicable to virtually every property disposition circumstance, OI will provide property disposition guidance specifically to facilitate the Shuttle T&R process. These may take the form of a policy letter, changes to NPDs and

NPRs, or white papers posted on the iTransition web page:

<http://oim.hq.nasa.gov/oia/nasaonly/itransition/index.html>

Infrastructure transition shall conform to existing law or Federal regulation. However, when not prohibited by Federal law and regulation, NASA guidance can be modified to minimize negative impact to the Program or Agency and to minimize cost by implementing innovative ideas.

Congress's authority over Government property is derived from the Constitution, Article IV, Section 3, Paragraph 2. Most Federal property management and disposition actions are derived from instructions in the Federal Property and Administrative Services Act of 1949 as amended, (40 USC).



Shuttle Orbiter in VAB

5.3 Shuttle Property Disposition Process

5.3.1 Introduction

The property that NASA uses does not belong to any one employee, the employee's program, or even to NASA. Government property belongs to the public. NASA has a fiduciary responsibility to act in the best interests of the public and to be the trusted caretaker of public property. This responsibility demands that all property disposal actions follow the appropriate disposition process.

The disposition process is, in large part, a recycling process that provides many opportunities and benefits to the Agency and its internal and external stakeholders and customers. The process follows a logical sequence as the property to be dispositioned passes a suite of decision and control gates, becoming available to an increasingly large pool of stakeholders. The process of dispositioning Space Shuttle property after the last mission is described in Figure 4.

5.3.2 Procedural Hierarchy

Once all Shuttle property has been described and characterized and it has been determined that the property is no longer required for its original use within a NASA program or project, the disposition process requires the following analyses:

- Determination of human spaceflight programs' need for the property in question;
- Determination of other NASA programs' need for the property in question;

- Determination if the property is NASA-held or contractor-held;
 - If NASA-held, the property proceeds through the existing NASA property disposition system;
 - If contractor-held, property is disposed of through the Plant Clearance Automated Reutilization Screening System (PCARSS) system, administered for NASA and other Federal agencies by the Defense Contract Management Agency (DCMA);
- Determination of other Federal agencies' need for the property in question.

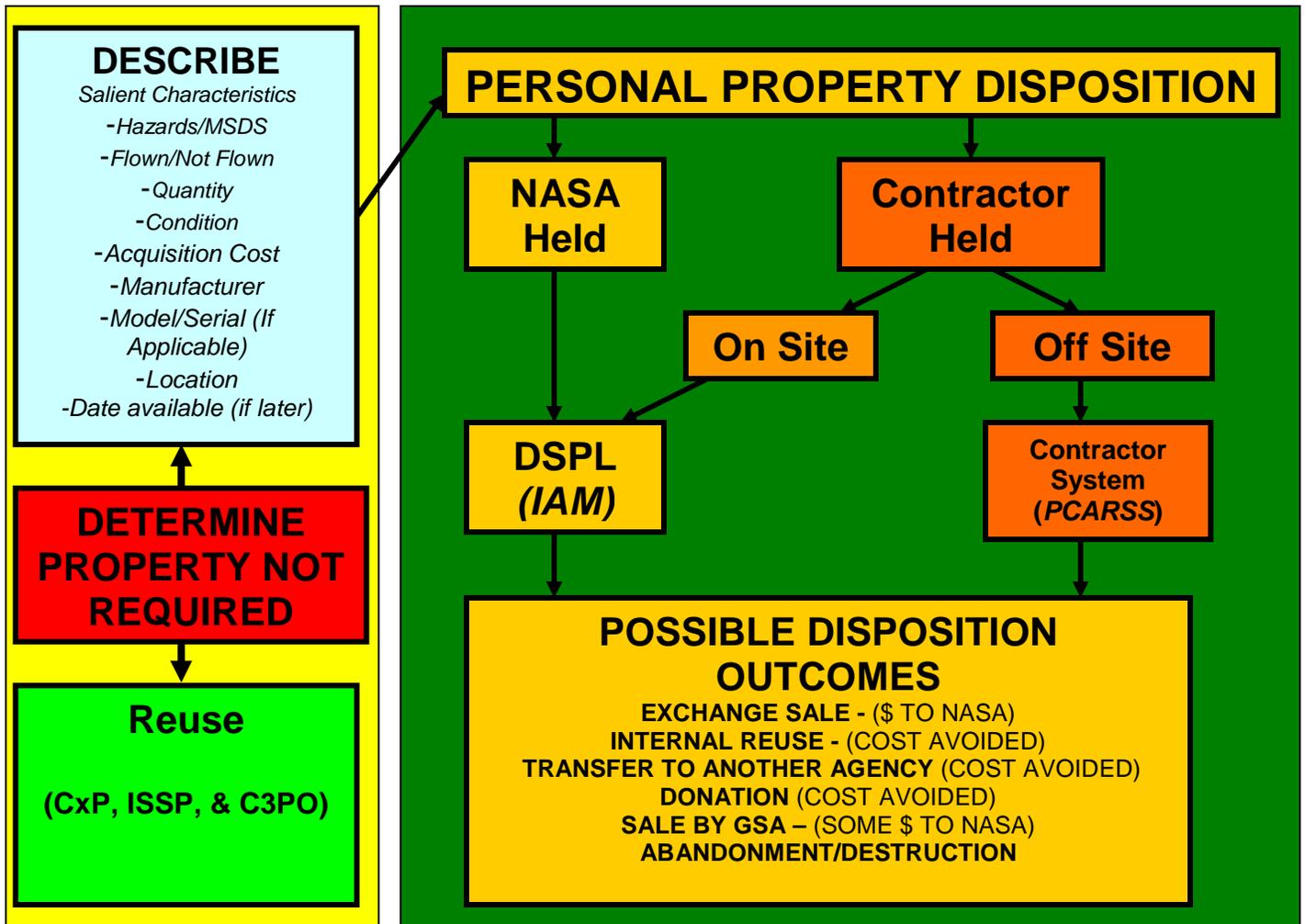


Figure 4: The NASA Property Disposition Process⁴

⁴ Legend for the NASA Property Disposition Process:

C3PO – Commercial Crew and Cargo Program Office

CxP – Constellation Program

ISSP – International Space Station Program

DSPL – The property DiSPosaL module of NASA's Integrated Asset Management (IAM) system

MSDS – Material Safety Data Sheet

Thus, possible disposition outcomes include re-use, transfer to another Federal agency, donation (to museums or other eligible donees), exchange or sale in partnership with the General Services Administration (GSA), or abandonment and/or destruction if required by the export control regime.⁵

To be consistent with the GSA terminology, the term “direct transfer” refers to the disposition of property within NASA; to other Federal agencies; or to qualified schools and non-profit organizations under the Federal Technology Innovation Transfer Act of 1980 (15 U.S.C. 3701 et. Seq., as amended). “Donation” refers to disposition of property through GSA to qualified non-Federal organizations, generally through State Agencies for Surplus Property (SASP) offices. The term “donation” means the permanent transfer of property ownership and accountability from NASA to an eligible organization. Donations are fundamentally different than “loan” arrangements, under which NASA retains property ownership and accountability.

When dispositioning property, NASA will remove or render safe all known safety and environmental hazards associated with the property, or clearly identify any unusual hazards that are not removed, prior to donating the property or offering it for sale.



Space Shuttle Discovery on Launch Pad 39B

5.3.3 Re-use within NASA

The first step in the disposition process involves determining if there is another NASA use for property, and reassigning it accordingly. Through the internal reassignment of personal property that is no longer required for their original purpose, NASA avoids new procurement costs allowing other NASA programs to benefit directly from

this activity. The projected reuse of significant amounts and values of Shuttle property by Constellation and Station are prime examples of this cost avoidance.

⁵ The Space Shuttle System and some of its associated hardware are considered controlled items under the ITAR, specifically Category IV (as a Launch Vehicle) and Category XV (as Spacecraft Systems).

5.3.4 Use by Other Federal Agencies

When NASA determines that the Agency no longer requires property, it is declared excess and reported to General Services Administration (GSA) to be made available to other Federal agencies. If no Federal Agency has an interest in acquiring the property, then the property is made available for donation as surplus property. As noted above, the first significant external reutilization efforts are those performed by GSA or, for contractor held property, the Defense Contract Management Agency (DCMA) and the Office of Naval Research (ONR). DCMA performs property administration and plant clearance activities for NASA when we have an off-site commercial or private contractor. ONR performs these same services for NASA when the contractor is a non-profit research institution or institution of higher education. These activities make property available first for transfer to other Federal agencies that need it, and then to other qualifying entities such as museums as described in section 5.3.5.

NASA has a special artifacts agreement with the Smithsonian Institution's National Air and Space Museum (NASM). Under the agreement, excess NASA property is available to NASM if there is no other NASA program requirement or other Federal program use⁶. Title 20 of the U.S. Code, Chapter 3, Subchapter VII, Section 77d authorizes executive departments and independent agencies to transfer or loan to NASM aircraft, spacecraft, aircraft and spacecraft parts, instruments, engines, or other aeronautical and space flight equipment or records for exhibition, historical, or educational purposes. The NASA/NASM agreement is listed in its entirety at Appendix C. Transfers between NASA and NASM are normally made without charge for the property itself, but care, handling, and transportation costs are paid by NASM.

5.3.5 Public Engagement in Partnership with GSA

There are two other methods for making property available to public entities and eligible organizations through direct transfer or donation. The first method involves the direct transfer of excess NASA property under the Federal Technology Innovation Transfer Act and Executive Order 12999. The Executive Order makes educationally useful property available to schools. The Federal Technology Innovation Transfer Act makes research equipment available to universities and non-profit research institutions. Property transferred under either authority extends the ability of the Agency to perform research and to stimulate the development of the next generation of scientists, engineers, and space travelers.

⁶ NASA program requirements span the full range of NASA's mission responsibilities, including technical, educational, communication and outreach. Other Federal program use includes any authorized official purpose of the requesting agency.

The second method involves the donation of surplus property to the various State Agencies for Surplus Property for reuse by state and local government, museums and other public bodies and non-profit organizations that may qualify as eligible recipients under the program. Recipients are responsible for all costs associated with the transfer of property to their activity, including pickup, transportation, packaging, preparation and extra storage charges if the property must be stored after transfer.

Both the Agency and the public benefit from property transfers and donations. NASA avoids possible disposition costs associated with abandonment and destruction, long-term storage costs, and even transportation costs. The public also benefits when other agencies and public entities that make use of the property avoid acquisition costs.

Surplus Federal property which is not donated to museums or other qualifying organizations may be sold. Current Federal regulations require that NASA-held, on-site property be reported to GSA for sale through the Federal Asset Sales Program. The Federal Asset Sales Program collects information from Federal Agencies regarding surplus Government property, advertises the property, and contracts for the sale of the property.

NASA derives some benefit from the proceeds of property sales. NASA may use some of the sales proceeds to offset the costs of conducting the sales and, in the case of the exchange sale program, NASA may use the proceeds to offset the costs of new acquisition of an equivalent replacement asset. Experience has shown that NASA property, even those items that may be considered to be scrap, often has considerable value as collectables. As a result, it is important that NASA property, particularly property flown in space, is properly identified as such, to ensure the maximum return at sale, should the property go to exchange sale or surplus sale.

5.4 Property Disposition Alternatives

Within these three steps in the property disposition process, there are several process variations or alternatives available for use, depending on NASA's specific needs. The decision to use these alternatives is normally made by the Center Property Disposal Officer (PDO) or the Contracting Officer in coordination with the Center PDO. These variations are explained in the alternatives below.

5.4.1 Exchange Sale

Federal property may be exchanged or sold, under the "exchange sale" authority, as part of a new procurement in much the same way an automobile would be "traded in" on another automobile. The exchange sale authority also allows agencies to reserve the

proceeds of normal disposition sales by identifying items which will be replaced with similar items as “exchange sale” and applying the proceeds of those sales to the acquisition of the replacement items. There are several restrictions on the exchange sale process. First, property cannot be acquired from other Federal Agencies for the purpose of putting it in the exchange sale process. Second, the proceeds of the exchange sale process have to exceed the costs of conducting the process. Third, a new, similar item to the one being exchanged or sold must be acquired. Last, there are restrictions on some classes of items, generally for safety reasons. These include, but are not limited to, used aircraft parts. Space Shuttle hardware is not classified as aircraft parts for this purpose. Use of the exchange sale alternative requires that the items are processed through NASA internal disposition processes. Property in the custody of contractors destined for disposal through DCMA that is eligible for exchange sale shall be identified and DCMA will account for sale proceeds for return to NASA as an exchange sale.

5.4.2 Abandonment and Destruction

NASA PDOs may decide to abandon and destroy property when there is no known use for the property and the cost of continued care and handling during the sales process will likely exceed the proceeds from sale. For Space Shuttle property, the decision must be either to do both abandonment and destruction or neither; both are required. Property proposed for abandonment must be advertised unless a similar determination is made that the cost of advertisement would exceed any expected proceeds from sale, and there is no known use for the property. To avoid the appearance of a conflict of interest, the individual who proposes abandonment may not be the same individual who approves it. Abandonment cannot be used simply to avoid processing items through the reutilization process.

Federal agencies cannot decide to abandon sensitive (hazardous or military sensitive) property on a contractor’s site without the contractor’s prior written approval. Abandonment of off-site, contractor-held property must be processed through the Plant Clearance Officer (PLCO).



Electrical Connector from Shuttle Atlantis

5.4.3 Contractor Buy-back

Contractors are permitted by the FAR property clause to purchase back any property that they originally acquired under the instant contract. That does not include property purchased under preceding contracts. Contractors may purchase the property at full cost prior to the beginning of the disposition process. If they do not wish to purchase the property at full cost, they may wait until sale during disposition. However, the items may

be transferred or donated prior to sale and once the disposition sale process begins, they may be in competition with other bidders for the same item.

5.4.4 Return of Contractor Materials to Suppliers

Contractors are permitted to return contractor acquired property to suppliers and obtain a refund, less reasonable care and handling fees, and credit the refund to the cost of the contract.

5.4.5 Contractors with Approved Scrap Procedures

Contractors with approved scrap procedures have authority to disposition property according to those procedures in accordance with the FAR Government property clause in their contract. Sales proceeds from disposition of Federal property under contracts may be credited to the cost of the contract if the contract so states. Otherwise, sales proceeds must be credited to the Treasury.

5.5 Roles and Responsibilities in Property Management and Disposition



The Space Shuttle Enterprise on display at the National Air and Space Museum

5.5.1 User

Users of Government property must assure that it is properly used. They must do what is reasonable to protect the property against misuse, theft, damage, and destruction. They must report changes to the location, status, or character of the property to their property custodian or other record keeper. They must obtain appropriate approval before they dismantle or cannibalize property. Of significant

import to this document, they must expeditiously report any property that they no longer require for reassignment and use for other official, authorized purposes or disposition.

5.5.2 Property Custodian

Property custodians are NASA's official record keepers for items that are in NASA's custody and recorded in NASA's property systems. They must report changes to property status, location, or custody for inclusion in NASA's property management systems. Changes in property status include reporting property that is no longer required by the activity.

Contractors who have custody of NASA property are responsible for maintaining custodial property records under the Federal Acquisition Regulations (FAR). They may assign this activity differently, but they must still have an auditable record of property and associated transactions. Contract language specifically requires that contractors report property that they no longer require for performance of the contract under which it was provided for possible reuse or other disposition. Contractors may not unilaterally reassign Government property for other use, even on other Government contracts.

5.5.3 Supply and Equipment Officer (SEMO)

The SEMO is the official, designated by the Center Director, with authority over Center supply and property management activities. SEMOs are responsible for the development of specific local procedures that implement Federal law and regulation and NASA policy at their Center.



Crawler Transporter

5.5.4 Property Disposal Officer (PDO)

The PDO is responsible for the management and Federal reporting of NASA held and on-site contractor held property that has been reported for disposition. Each Center has a PDO. The PDO maintains the records of property in the disposition process; prepares reports for disposition through GSA; manages the storage of the property awaiting final disposition activity; coordinates the pickup of items by transferees, recipients or buyers; maintains appropriate documentation for each type of transaction; and as needed, supervise the sale of property when authorized by GSA to do so.

5.5.5 General Services Administration (GSA)

The GSA is the Federal Agency authorized by law to oversee and conduct the disposition of civilian agency property assets. GSA provides regulatory guidance for property management and disposition activities. GSA decides on the recipient of property when there are conflicting requests for the same items. GSA provide processes and systems to advertise property for reuse or sale and conduct property sales.

5.5.6 Defense Contract Management Agency (DCMA)

The DCMA is a Department of Defense combat support agency responsible for ensuring the integrity of contractual processes and providing a broad range of contract-procurement management services for the DOD and other federal agencies. The DCMA ensures that federal acquisition programs, supplies and services are delivered on time and

within cost and meet performance requirements. The DCMA provides NASA with a wide range of contract management services, including plant clearance services for reporting, screening, requisitioning and disposing of excess Government property located at contractor facilities.

5.5.7 On-site Contractors

On-site contractors are normally required to manage property according to NASA policy and using NASA systems whenever possible. They must disposition property through NASA's on-site disposition activities using NASA's disposition system.

5.5.8 Off-site Contractors

Off-site contractors manage property using their own property systems, in accordance with the requirements of the contract. Contractors are required to monitor inventory and expeditiously report property they no longer require for performance of the contract. They report property that is no longer required through a PLCO using standard forms or electronic equivalents of those forms. Contractors are responsible for and must continue to store, manage and secure NASA property during the disposition process.

5.5.9 Plant Clearance Officer (PLCO)

The PLCO serves, essentially, the same role as the PDO for property in the custody of NASA contractors and their subcontractors when those contractors are located off-site. Generally, NASA delegates this function to the Department of Defense, Defense Contract Management Agency or the Office of Naval Research. PLCOs from these agencies are located throughout the country and the world. They assist NASA in disposition of contractor held property and allow this process to proceed without the need for duplicative NASA functions.

5.5.10 Property Recipients

Recipients of NASA on-site property are required to pickup property in concert with the instructions from GSA and in coordination with the PDO. They must pay transportation charges associated with the property and may be required to pay for any special preparation charges.

Recipients of NASA property in the custody of off-site contractors must pickup property in accordance with the instructions of the PLCO and arrangements made with the contractor.

5.6 Requirements

5.6.1 Property Management

Government property must be managed, controlled and accounted for until disposition activities are complete. Individuals with custody of property, regardless of whether or not they were the users at an earlier point, should ensure that a chain of accountability is maintained until that time.

5.6.2 Property Records

Property records are the primary source for property disposition information. Typical property management systems contain, but are not restricted to data such as an item's value, a brief generic description, a history of transactions, user information, location, and the date received, the Material Safety Data Sheet (MSDS) reference if the property is hazardous, and any special handling instructions. Items stocked in bulk will also have additional information such as quantity, storage location, and reorder point.

NASA's official Government property records may take several forms. Regardless of the form, an item's description may contain a significant number of individual information items. For example, a description may be comprised of a simple statement of what the item is, its physical characteristics such as color, size, weight, circumference and condition, and the MSDS number for any special handling instructions if the property is hazardous. In other cases, an item of equipment may carry a serial number to distinguish it from other similar items. In many instances descriptions are effected by use. For example, a used car is likely to have a significantly lower value than a new car. Likewise, an item that has flown in space is likely to have significantly more value than a similar item that has not flown and is just described by the simple material content and description. Items that are hazardous in nature must be fully described to protect current and future holders of the property.

5.7 The NASA Government Property Record

All NASA organizations will use the NASA Integrated Asset Management (IAM) Property, Plant, and Equipment (PP&E) System described in NASA Policy Directive (NPD) 4200.1, to identify, account for, and control Center-held equipment. The NASA PP&E System is an Agency-wide tool hosted at the Integrated Enterprise Management Program (IEMP) Competency Center at NASA's Marshall Space Flight Center. The NASA PP&E System consists of the following components: SAP⁷; N-PROP, the web-based front end; DSPL, the disposal component; and Business Warehouse (BW). The SAP component contains the following modules: Asset Accounting (containing the Asset Master Records (AMRs) and Plant Maintenance (containing the Equipment Master

⁷ NASA implemented SAP R/3 software as the foundation of the Agency-wide financial system.

Records (EMRs)). NASA PP&E System requires accurate and complete item descriptions, locations, and equipment information to permit cost effective Agency-wide control, equipment accountability and reuse consideration wherever equipment is located. The governing policy documents are the NASA Equipment Procedural Requirements, NPR 4200.1, and the NASA Personal Property Disposal Policy, NPR4300.1. To maximize the return to NASA or to assure the most appropriate use of property, individuals who are aware of information that may affect an item's reuse potential or its value at sale must report that information as well. This is particularly true of items that have higher value due to a known use, such as items flown in space or used in a particularly important mission or by a historically significant person.

The governing policy document for Supply Management is the NASA Materials Inventory Management Manual, NPR 4100.1. Records may exist within the NASA Supply Management System, or within one of many project or program property management level record keeping systems. Some on-site contractors are authorized to maintain supply records within their company.

5.8 Contractor Records of Government Property

Contractor who are performing off-site are required to maintain their own custodial records of Government property. The minimal requirements for data are contained in the FAR Government property clause. The standard, current contract requirement follows:

(iii) *Records of Government property.* The Contractor shall create and maintain records of all Government property accountable to the contract, including Government-furnished and Contractor-acquired property.

(A) Property records shall enable a complete, current, auditable record of all transactions and shall, unless otherwise approved by the Property Administrator, contain the following:

- (1) The name, part number and description, manufacturer, model number, and National Stock Number (if needed for additional item identification tracking and/or disposition).
- (2) Quantity received (or fabricated), issued, and balance-on-hand.
- (3) Unit acquisition cost.
- (4) Unique-item identifier or equivalent (if available and necessary for individual item tracking).
- (5) Unit of measure.
- (6) Accountable contract number or equivalent code designation.
- (7) Location.
- (8) Disposition.
- (9) Posting reference and date of transaction.
- (10) Date placed in service.

5.9 Physical Inventory

Contractors are normally required to perform physical inventories of Government property in their possession at the conclusion of a contract. Physical inventories are particularly important when property is to be offered on following contracts. However, if the contractor has an approved property management system, their normal physical inventory practices and records systems are found to be adequate, and the Property Administrator concurs, a physical inventory can be waived. This is particularly true if the follow-on contract is awarded to the same contractor and they are willing to accept the inventory in place.

5.10 Reporting Government Property When No Longer Required for Original Purpose

5.10.1 Property in Custody of NASA or On-Site Contractors



Aerospace tooling parts

5.10.1.1 Reporting excess material

NASA civil servants and on-site contractors who no longer require material for official use must coordinate the disposition of those materials through the PDO. When quantities are significant and when significant savings in costs associated with processing times may be achieved, contractors should consolidate material items of common physical content and lot them together for reporting purposes. For example, steel hardware items such as bolts and nuts could be lotted together and reported by weight rather than by individual count.

5.10.1.2 Reporting excess equipment

If the property is accountable equipment, civil servants must coordinate the disposition through their Property Custodial Officer utilizing the NASA PP&E System. On-site contractors are required to report property they no longer require for performance through the PDO, using NASA guidance, systems and procedures. At the conclusion of a contract, the contractor must report all remaining property that was provided (either as Government furnished property or acquired by the contractor at Government direct cost) under the contract. Flown property must be identified as such. Prime contractors, who are not reporting through NASA's internal property systems, are required to report property they no longer require for performance according to the terms and conditions of the contract's Government property clause(s).

Contract language normally requires Contractors who have custody of NASA property on a NASA installation to disposition property in the same manner as civil servants. On-site

contractors usually record equipment within the NASA PP&E System. They may use their own systems to record material and supplies. Contractors may have property with special handling requirements such as contaminated property that is unsafe for further processing without additional remediation or safing activity. As Center disposition activities are not normally equipped or staffed to perform these functions, they must be performed before reporting the property for disposition. Though necessary, safing and remediation activities are not part of the disposition process. Rather, they are considered normal best practice as part of program activity.

If the equipment is accountable, contract employees must coordinate the disposition through their Property Custodial Officer utilizing the NASA PP&E System.

5.10.1.3 Reporting Non-Controlled Equipment

NPR 4200.1 defines controlled equipment as:

- 1) nonsensitive equipment with an acquisition cost of \$5,000 or more that has an estimated service life of two years or more, which will not be consumed or expended in an experiment; and
- 2) selected items of equipment with an acquisition cost less than \$5,000 that are designated and identified as sensitive, by the holding Center, such as weapons and certain types of hazardous devices. All other equipment is non-controlled.

Quantities of non-controlled equipment and controlled equipment valued under \$100,000 may be lotted and reported by quantity, rather than by each item, without serial number identification. For example, 100 flat screen computer monitors in inventory at the conclusion of the Program could simply be reported as 100 flat screen computer monitors, if, in fact, they all exist and are of the same general condition and description. These items must be reported to the PDO for direct inclusion in DSPL.

5.10.2 Property in the Custody of Off-Site Contractors

5.10.2.1 Requirements of FAR

The property disposition process at contractor sites is called “Plant Clearance.” Instruction for NASA contracting personnel, property administrators and plant clearance personnel on personal property disposition resides in FAR Part 45. Instructions to the contractor reside in the pertinent Government property clause. Insertion of a government property clause in the contract language is required by FAR Part 45.

5.10.2.2 Prime Contractors

The contractor submits reports of property they no longer require for performance to the PLCO. After a review of the submission, the contractor may be required to provide additional information or corrections to facilitate further processing. Once the report has been accepted by the PLCO, it becomes a “plant clearance case.”

Under contracts awarded after May 2004, the Government Property Clause specifically requires that contractors report any property they no longer require, using a Standard Form (SF) 1428, Inventory Schedule, or by an electronic equivalent. Contractors are required to submit reports within 30 days of their determination that the property is no longer required. Under contracts awarded before the May, 2004 change, contractors are required to submit such documentation in a form acceptable to the contracting officer.

Contracting Officers generally delegate the reporting requirement to PLCOs. Instructions to Contracting Officers and PLCOs require that they obtain reports from contractors using the same SF1428 or electronic equivalent. Contractors are required by the form’s instructions to provide descriptions in sufficient detail to permit the Government to determine the most appropriate disposition. Information on precious metals, hazards, and whether the items were acquired by the contractor or furnished by the Government are additional data items required by the form. Contractor’s property systems are regularly reviewed to assure that they are capable of providing the information required for correct reporting.

The instructions for completion of the SF 1428, Inventory Schedule, require that the contractor provide any information that would facilitate the government’s reuse or disposition of the property. As a result, the contractor should report *known* information on flight use, use by significant individuals or use in significant testing or other activities. In an attempt to discern potential artifacts or items that have potential for greater value at sale, NASA’s delegation instructions to PLCOs have long required that contractor prepared inventory schedules at least identify flown items separately.

Because NASA delegates much of its offsite property administration activities to the Department of Defense, most offsite plant clearance reports are filed, on-line through the Department of Defense’s Plant Clearance Automated Reutilization Screening System (PCARSS). The PCARSS system requires the same data that would normally be submitted on the form and allows some flexibility for using Departments and Agencies to collect, sort and cut data slightly differently.

5.10.2.3 Subcontractors

NASA has no direct relationship with subcontractors and may not provide direction or property to them. NASA provides government property to prime contractors for performance of contracts. Prime contractors may provide government property to subcontractors, at their discretion. However, the prime contractors remain responsible for proper management, use and disposition efforts. As a result, prime contractors must require subcontractors to report property they no longer require for performance of subcontracts through the primes for disposition. Prime contractors report subcontractor held property in the same way as they report other government property.

5.10.2.4 Validation and Acceptance by PLCOs

The PLCO may not accept incorrect or incomplete forms. They are required to advise the contractor of deficiencies. Contractors must correct the deficiencies and resubmit. NASA's delegation instructions to the PLCO require them to reject reports that do not separately categorize and describe flown articles.

5.10.3 Requirements of NASA FAR Supplement

There are no special disposition reporting requirements within the NASA FAR Supplement.

5.11 Contract Language

Contract language, including the statement of work, may contain special instructions to the contractor regarding their pre-disposal activities such as safing and decontaminating. Centers may require and specify pre-disposal and reporting activities to assure the safety of their personnel and the expeditious processing of property. Other than the aforementioned differences associated with on-site contractor performance, there are no such NASA-wide special requirements within the property regulations or within the property instructions and clauses of the NASA FAR Supplement.

5.12 Environmental Management

5.12.1 Environmental Planning

In February 2008, and in accordance with requirements of the *National Environmental Policy Act (NEPA)* and associated environmental policies and regulations, NASA issued a Draft Space Shuttle Program Environmental Assessment, which addressed the potential environmental impacts associated with the transition and retirement of the Space Shuttle, including the impacts of NASA's discretionary actions regarding disposition of real and personal property. In July 2008, after review of comments received from the public,

NASA released the Final Space Shuttle Program Environmental Assessment, along with a Finding of No Significant Impact (FONSI).

5.12.2 Remediation of Soil and Groundwater

Remediation of contaminated soil and groundwater resulting from past NASA operations at NASA Centers and facilities is the responsibility of the agency. Much of the contamination is due to past practices and activities. Most environmental remediation projects are regulated by one of two major laws, RCRA (Resource Conservation and Recovery Act) and CERCLA (Comprehensive Environmental Response Compensation and Liability Act). RCRA cleanups are required as a result of the Site's storage, treatment or disposal of hazardous waste. CERCLA focuses on past contamination at sites.

The potential cost associated with the cleanup of soil and groundwater contamination associated with SSP operations has been cited as a potential cost threat to the Agency after the Shuttle is retired. Most of the Agency's total environmental liability (estimated at approximately \$940 million at the end of FY 2008) is attributable to the Apollo Program. Because contamination is most often co-mingled from one or more Programs, it is impossible to quantify the responsibility to an individual program or project like the Space Shuttle Program. It is estimated that the Space Shuttle Program is responsible for more than half of the estimated environmental cleanup effort at 25 of 134 projects in the Environmental Compliance and Restoration (ECR) Program and approximately 4 percent of NASA's total estimated environmental liability.

Routine spills and releases at NASA facilities are managed by the Center Environmental Offices and spill response teams. Affected Centers work with the SSP and its contractors to address immediate spills as part of normal compliance with environmental laws.

In general, SSP contracts do not directly provide for cleanup of soil or water contamination at SSP contractor and vendor sites. Environmental support and cleanup projects may be indirectly funded through contract overhead cost. If issues arise concerning soil and groundwater contamination at contractor sites, the SSP Elements/Projects will work with the procurement, environmental, and legal organizations at the responsible Center. Headquarters General Counsel would coordinate with Department of Justice for claims against the US Government.

Responsibility for the remediation of soil and water contamination at sites leased for SSP use will be negotiated with the site lessor before SSP leaves the leased facility. This negotiation is the responsibility of the responsible PDO and Environmental Management

Office (EMO) in consultation with the Center Chief Counsel's Office and the responsible SSP Element/Project.

5.12.3 Minor Contamination Associated with Real and Personal Property

Contamination in buildings (such as asbestos or lead paint) and contamination associated with personal property (such as lead or chromium contamination or hazardous waste) are addressed through the property dispositioning process and contract requirements. SSP elements provide information on property being dispositioned, including the presence of hazardous materials to support the safe handling of the property.

The SSP T&R Environmental Plan lays out the process the Program will use to address minor contamination of environmental media associated with SSP government-owned personal property at both NASA centers and contractor sites may be the responsibility of the SSP and elements/projects if contamination is the result of normal equipment



NASA Shuttle Tile

operations. When the SSP leaves a government-owned facility, or removes government-owned personal property from a contractor facility, an assessment of the environmental condition of the facility associated with the removal, decontamination, and dispositioning of government-owned equipment will be done. Final conditions will be documented in a Final Site Condition Report that describes the asset, environmental risks, actions taken and final environmental condition. This documentation will serve to reduce SSP future liabilities, as well as to document environmental data associated with T&R activities.

The SSP is also evaluating the technical requirements and costs associated with safing flight hardware such as the Orbiters for eventual museum display. Costs to safe the Orbiter are likely to be high, because of its complexity and the use of hypergols. The extent of safing required and the decision on how it will be paid for has not been made. These are not environmental remediation costs. These are considered decontamination and/or safing costs.

5.13 Cultural and Historic Resources

5.13.1 Historic Assets and Artifacts

The Space Act from which NASA gets its charter states in Section 203 that it is a function of NASA to “provide for the widest practical and appropriate dissemination of information concerning its activities and the results thereof.” Because of the SSP’s national and international importance to human spaceflight history, and its significant

contributions to state and regional economies across the Nation through NASA's Centers and contractor facilities, NASA is responsible for ensuring that T&R activities embody good stewardship of these valuable national assets. Throughout the T&R process, NASA will ensure that national assets and historic artifacts are appropriately dispositioned and that documentation of the SSP's history and its contributions are properly captured. This includes disposition of artifacts in accordance with the requirements of NASA policy, NPR 4310.1, Identification and Disposition of NASA Artifacts.

NASA is responsible for compliance with the National Historic Preservation Act (NHPA) in the U.S. Code (16 U.S.C. §§ 470 et seq.), which directs Federal agencies to inventory and maintain properties of historic significance. The term "historic property" means any prehistoric or historic district, site, building, structure, or object included in, or eligible for inclusion on the National Register of Historic Places, including artifacts, records, and material remains related to such a property or resource.

NASA currently manages a wide range of historic resources including buildings and structures listed (or eligible for listing) on the National Register of Historic Places as well as designated National Historic Landmarks (NHL). Many of these resources have supported and continue to support the Space Shuttle Program. NASA has a Cultural Resource Management (CRM) program to comply with the NHPA. The NHPA implementing regulations allow NASA to transition assets to best meet Agency mission. The compliance process is the same whether NASA plans to modify, excess or demolish a historic resource.

The Center CRM program is managed by a Historic Preservation Officer (HPO) designated at each Center and three Component Facilities Wallops Flight Facility (WFF), Michoud Assembly Facility (MAF), and White Sands Test Facility (WSTF). The transition of the SSP to CxP involves the change in use of many of NASA's historic resources. To support the corresponding increase in NHPA compliance activity, NASA contracted for the completion of an Agency-wide inventory of assets associated with the SSP. The HPOs now have the survey information to proactively work with the State Historic Preservation Officers as required under the NHPA implementing regulations.

Historic resources often contain equipment and tooling that may be historic artifacts (e.g., assets that have public education or display value). NASA does not manage equipment and tooling under the NHPA or consider them for listing on the National Register. However, if they are located within a historic building, the HPO must consider if/how they contribute to the building use (e.g., are they what make the building historic). As

such, the HPOs will be working closely with the PDOs to determine any compliance actions that may be needed before personal property are excessed during T&R.. So while historic resources are not the same historic artifacts, there is a need for coordination due to the overlap.

5.13.2 Historic Eligibility Surveys

NHPA requires Federal agencies to “*provide leadership in the preservation of the prehistoric and historic resources of the United States*” (NHPA Section 2 16 U.S.C. 470-1). In particular, Federal agencies are required to:

- 1) “*...Establish... a preservation program for the identification, evaluation, and nomination to the National Register of Historic Places, and protection of historic properties.* (NHPA Section 110 16 U.S.C. 470h-2(a) (2); and
- 2) “*...shall, prior to the approval of the expenditure of any Federal funds on the Undertaking..., take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the National Register. The head of any such Federal agency shall afford the Advisory Council on Historic Preservation established under Title II of this Act a reasonable opportunity to comment with regard to such undertaking.*” (NHPA Section 106 16 U.S.C. 470f)

5.13.3 NHPA Compliance

In response to the NHPA-governed mandate for Federal Agencies to preserve historic resources, NASA formed the SSP Historic Preservation Working Group (HPWG) following direction that the SSP would conclude at the end in 2010. The HPWG was formed in 2006 in order to provide Agency-level oversight and execution of NHPA-mandated activities prior to the retirement of the SSP. The HPWG is co-chaired by OI EMD and SOMD. Membership includes the NASA HPOs at each of the 13 field Centers and Component Facilities as well as members of the Shuttle Environmental Support Team (EST).

In response to NHPA requirements, NASA conducted a historical survey and evaluation of all NASA-owned facilities and properties associated with SSP activities (real property assets) to determine their eligibility for listing in the National Register of Historic Places (NRHP). Such facilities included, but were not necessarily limited to, those used for research, development, design, testing, fabrication, and operations. The historical survey also included certain types of resources that are not facilities but which are considered “personal property” under Federal regulations. These resources (e.g., Orbiters, retrieval

ships, crawler transporters) are typically large, and while they may be mobile, they are also usually associated with a geographical location.

The survey of potential historic facilities that supported the Shuttle Program was conducted at the 13 NASA Centers and Component Facilities. The Center-specific historic contexts and survey results were presented in a series of draft reports which were reviewed by the Center HPOs and in consultation with the relevant State Historic Preservation Officers (SHPOs). The Agency-wide SSP survey report, including all individual Center and Component Facility survey findings, supports NASA's regulatory obligations to inventory resources in accordance with the NHPA, and also is intended to provide information needed to support any subsequent consultations for undertakings related to SSP asset disposition and Constellation Program facility use planning.

Using the information from the historical survey, the HPWG has developed a listing of historically significant assets that supported the Shuttle Program. Depending on future NASA program requirements, the Shuttle-supported assets may be transferred in their current state, modified to meet future program requirements, or demolished if it is determined that NASA no longer requires the infrastructure. The role of the HPWG is to provide coordination and general Agency oversight in determining forward planning of the historic assets and, in particular, ensuring that proper mitigation strategies are in place prior to engaging in an *undertaking* (i.e. any change that alters the asset's historical significance).

In order to ensure proper NHPA compliance, the HPWG, through the Center HPOs, engages in consultation activities with the appropriate SHPOs and coordinates activities with the Advisory Council on Historic Preservation (ACHP). The HPWG will draft a Historic Preservation report, depicting the mitigation activities performed, for each Shuttle-supported historic asset.

5.13.4 Artifact Identification

NASA is working with the General Services Administration (GSA) to pre-screen and handle the influx of potential Space Shuttle Program artifacts to ensure that NASA's property disposition process is sensitive to the identification and placement of historically significant Shuttle hardware. These potential artifacts are receiving extra scrutiny as they represent those items that have significance to the history of human spaceflight in the Space Shuttle era – from its inception in 1972 to its retirement in 2010. It is NASA's intent to make these artifacts available for preservation and document the rich history of the U.S. space program.

NPR 4310.1F, “Identification and Disposition of NASA Artifacts,” Appendix A defines a NASA artifact as “unique objects that document the history of the science and technology of aeronautics and astronautics. Their significance and interest stem mainly from their relation to the following: historic flights, programs, activities, or incidents; achievements or improvements in technology; our understanding of the universe; and important or well known personalities.”

For initial Transition planning purposes, three broad categories of shuttle property will be considered potential SSP artifacts:

- **Wish List Items** - A preliminary Agency-wide “wish list” of Shuttle hardware has been compiled. This list is intended to serve as a baseline of what is considered a desirable “potential artifact” among the museum and NASA Visitor Center communities and NASA education and public outreach functions.
- **Space Flown Hardware** - Additional space-flown hardware identified by the SSP Elements (Projects) using standardized approaches (e.g., “flown repairable hardware that has a documented flight history”) through the Transition Property Assessment (TPA) and certain non-flight but historically significant items are anticipated to have higher-than-normal public interest and placement potential.
- **Non-flight Historically Significant Items** - Shuttle ground equipment or institutional assets (for example: communications and control consoles, handling and processing equipment, special purpose vehicles) and commemorative public affairs assets (for example: paintings, drawings, one-of-a kind models or displays) of special significance and interest per the NPR 4310.1F artifact definition.

An Agency level SSP Artifacts Working Group has been established to support and effect careful, efficient, and expeditious disposition of SSP artifacts during program closeout and planning for closeout, and to enable preservation of historically important Shuttle-related property in the national interest, including items that belong in the national collection. The Working Group’s primary customers are the NASA-NASM Joint Artifacts Committee , the NASA Artifacts Committee , and the NASA Transition Control Board.

5.13.5 Artifact Prescreening

The artifact prescreening process will provide eligible recipients an early opportunity to request shuttle artifacts for their collections. Artifact prescreening will occur prior to an item being declared excess and will be followed by a pre-decisional determination for placement with a particular recipient. Notification that a pre-decisional determination has been made enables a potential recipient to design a collection theme, build a support

infrastructure as needed, and plan the ultimate receipt of the artifact post program close out.

Potentially thousands of items that represent portions of the Shuttle history will be made available to museums, educational institutions, or other authorized recipients. NASA is working closely with GSA to advertise potential artifacts before they are officially excessed (i.e., prior to actual availability) to give interested parties time to determine specific needs associated with acquiring, displaying, or transporting the item. GSA has also agreed to assist NASA in its outreach to interested parties, facilitate strategic planning for transfer, making final recipient determinations, and identifying any conditions associated with the transfer or donation.

NASA and GSA are working to ensure that the process for prescreening potential Shuttle Program artifacts is streamlined while following the basic tenets of the normal disposal process. This process will be efficient, equitable, impartial, auditable, transparent and designed to meet both NASA requirements and the anticipated demand for donated Shuttle artifacts. The process will allow potential recipients to prescreen property for future acquisition under the Federal Technology Innovation Transfer Act authority as well as acquisition under GSA's utilization and donation programs.

The prescreening will be accomplished within GSAXcess®, a Web-enabled platform that eligible customers can use to search GSA's inventory of available property. Space Shuttle Program property available for prescreening will not be mixed with regular Government excess/surplus property; a separate GSAXcess® module will be created solely to support NASA prescreening. Development of prescreening procedures and tools is underway, and NASA and GSA anticipate beginning external prescreening in mid-2009. The dialogue created by prescreening may spread word of the Shuttle T&R in smaller education and museum circles, sparking additional donation or sale requests and possibly building a larger user base for GSAXcess®.

SSP Property that is prescreened through the NASA/GSA SSP Prescreening portal and that is **not** requested by a recipient will no longer be treated as a potential artifact. In this case, the property will be declared excess when the program ends, enter the disposal process as Exchange Sale property, and be disposed of in accordance with NPR 4310.1. The NPR states that the Center Property Disposal Officers, working with their respective Public Affairs offices, will assist program and project managers to determine which items may qualify as artifacts during the disposal process. As a result, the excess and exchange sale process will permit a second opportunity to identify SSP artifacts; however because

this effort will happen after the property is declared excess (when the program ends) it minimizes the strategic planning opportunities for potential recipients.

5.13.6 Major Space Shuttle Program Hardware

Due to the significance of the Shuttle Orbiters and the role they played in our Nation's space program, special attention will be paid to ensuring they will retire to appropriate places. NASA is keenly aware of the essential value of these key assets to the space program's rich history; the Agency is therefore committed to making placement decisions that are determined to be in the best interest of the American taxpayer.

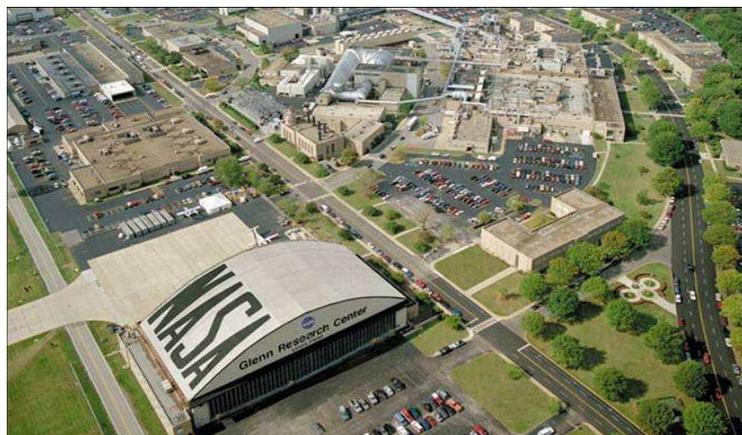
NASA has initiated discussions with the Smithsonian Institution, National Air and Space Museum regarding accession of Space Shuttle Orbiter *Discovery* to the national collection. NASA issued a Request for Information (RFI) on December 17, 2008, to gather market research for NASA to make decisions regarding development of strategies for placement of Space Shuttle Orbiters *Atlantis* and *Endeavour* and non-flight Space Shuttle Main Engines (SSMEs) for public display after conclusion of the SSP. The RFI solicits information to gauge the level and scope of interest of U.S. educational institutions, science museums, and other appropriate organizations in acquiring these significant pieces of Space Shuttle hardware. Information gained from the RFI process will be used to identify potential recipients, evaluate Orbiter placement alternatives, and inform the development of further selection criteria to be used in subsequent Orbiter placement determination assessments.

5.14 Facilities and Real Property

NASA has developed a series of review processes to identify NASA needs to current and future facilities, in order to effectively manage the conversion and/or disposal of the inventory of Space Shuttle facilities to other NASA initiatives, such as exploration. During this process, NASA will ensure that the transition of facilities is completed efficiently and that demolition of excess facilities is completed in a manner that minimizes the burden of NASA's un-needed facilities.

5.14.1 Background

Over 640 facilities are used exclusively or nearly exclusively by the Space



Glenn Research Center

Shuttle Program to support Shuttle operations. It is anticipated that most of these facilities will be utilized by the Constellation Program, or by other programs, but it is expected that 40 – 100 facilities will become excess at the end of the SSP and will require demolition. In addition, NASA has already identified 3 entire sites, Palmdale manufacturing facility, Santa Susana Field Laboratory (SSFL), and White Sands Space Harbor (WSSH), that will potentially no longer be required by the Agency and may require disposal. NASA has existing processes in place to manage the disposal of facilities and properties. These processes will be used to manage the disposal of excess Shuttle facilities as they are identified. This paper summarizes the processes that will be used to manage the identification and disposal of excess Shuttle property and outline the disposal plan.

5.14.2 Identification of Shuttle Facilities and Last Need Dates

NASA conducted reviews at Headquarters and at each of the four space and space flight Centers to determine last need dates and capability retirement/transition timeframes for facilities that support Shuttle

operations. There are facilities at NASA Centers that provide support to the SSP even though they may not normally be considered Shuttle facilities.

Examples of these facilities are: the Merritt Island Launch Area (MILA) managed by GSFC and the Arcjet and Vertical Motion Simulator at Ames Research Center. NASA Centers will continue to inventory and identify facilities



Shuttle Launch Complex

which provide support to the SSP during the budget process and will provide this input to the SSP to determine last need dates for these facilities.

ESMD initiated the Exploration Requirements for Institutional Capabilities (ERIC) review to provide an initial assessment of those SSP and other facilities required to support the CxP. The other Mission Directorates performed similar reviews as part of the Agency Facility Review conducted by the Office of Program Analysis and Evaluation. These activities are helping the Agency develop program requirements for the Agency's highest value facilities that will be used to establish timeframes for transferring facilities

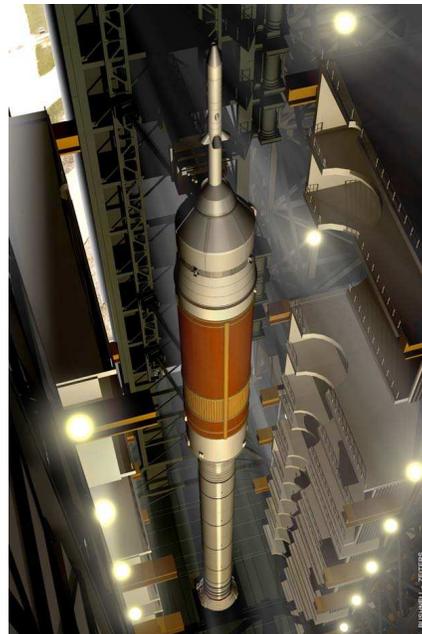
and determine the appropriate disposition path for facilities lacking firm programmatic requirements.

5.14.3 Determining Future Disposition of Shuttle Facilities

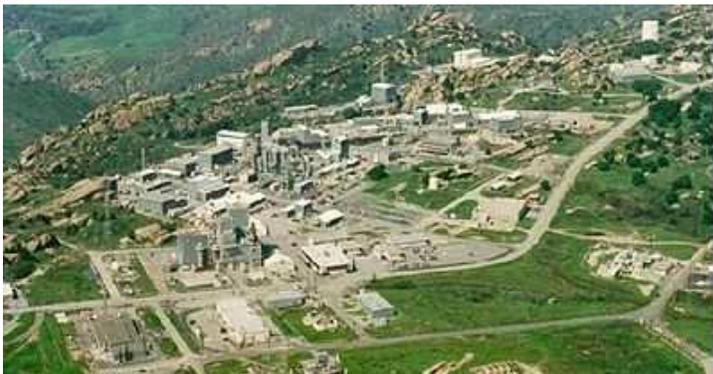
Once SSP last need dates are determined and the results of the Agency Facility Review are known, Center Space Planners, Real Property Officers, and Master Planners will compare facility capabilities against potential short-term and long-term requirements for programs at the Center. Based on the timing of future program needs for SSP facilities, the facility will either be turned over to the new program, or the facility will be mothballed until the capability is required. If no requirement can be identified for a facility in the foreseeable future, the Center will propose demolishing the facility.

5.14.4 Demolition of Unneeded Facilities

Centers will request funding for demolition of unneeded facilities as part of their annual Planning, Programming, Budgeting, and Execution (PPBE) Construction of Facilities (CoF) budget request. Demolition requirements must be identified at least 2 years before the desired demolition date to provide time for environmental surveys, consultation and mitigation for facilities with historic significance and design for the demolition project. SSP facilities demolition will be included in the overall Agency demolition program. Estimates will be refined during future budget development cycles as Centers review the last need dates for SSP facilities and determine which facilities have future uses.



Artist Rendering of Reuse of VAB by Ares/Orion



Santa Susana Field Laboratory (SSFL)

5.14.5 Re-use of SSP Facilities
NASA's goal will be to re-use SSP facilities whenever possible. Centers will attempt to maximize the use of facilities that are in good condition, are not nearing the end of their service life, and can be reasonably modified to meet Agency requirements.

Centers will work with current and emerging programs to identify new uses for SSP facilities. If a facility is to be modified to meet a program need, the benefiting program will be expected to bear the cost of the modifications. If a facility is to be modified for an institutional use, the modification project will be submitted as an institutional CoF request and prioritized among other Agency CoF requirements.

The Agency goal is to minimize the number of facilities that are moved to mothball status and to minimize the length of time that facilities remain in mothball status.

5.14.6 Disposal/Divestment of Entire Sites

Three sites have been identified for potentially complete divestment following the retirement of the Space Shuttle. These sites are: Santa Susana Field Laboratory (SSFL), the Palmdale manufacturing facility, and White Sands Space Harbor (WSSH). A separate divestment plan will be developed for each of these sites and others if and when identified.

NASA is currently following the disposal process as outlined in NPR 8800.15 to develop a divestment plan for SSFL. When no longer needed, SSFL will be reported as excess to the GSA. GSA will then be responsible for managing the disposal of the site using standard processes. Any SSP personal property remaining at the site will be handled by GSA as other related real property.

JSC is managing the disposal of the Palmdale site. The Palmdale land and buildings are owned by the United States Air Force (USAF) and are operated by NASA under an interagency agreement. JSC is negotiating the terms of the termination of that agreement. JSC has provided budget estimates to return the property to the USAF. These estimates will be refined based on the USAF requirements under the agreement termination, and a determination of the best approach to closing out the site.



NASA Gulfstream G-II

The land at WSSH is owned by the United States Army. NASA owns facilities at WSSH and operates the site under an agreement with the Army.

5.15 Aircraft Management

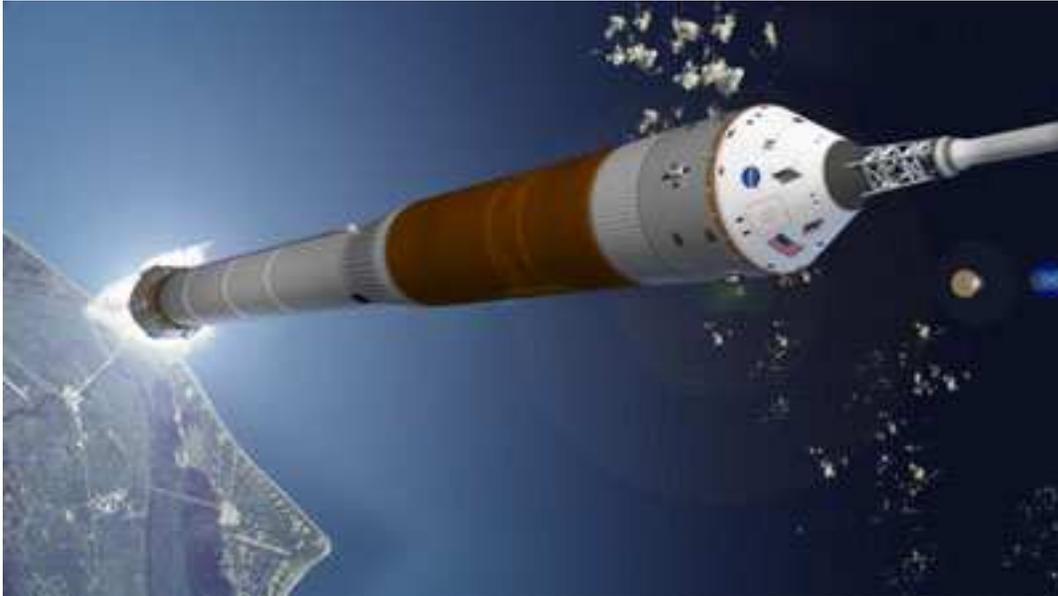
Seven Gulfstream G-II's and G-IIIs are used by the SSP for Shuttle

pilot training requirements and are based at JSC. One is on long-term loan to another Federal agency and two are available for reassignment. The remaining four Gulfstream II's will be available late in FY 2010, but have been highly modified, which reduces their commercial appeal. They may, however, be desired for parts to support NASA programs.

In addition to the Gulfstream aircraft, the SSP also uses two modified B-747s to transport the Shuttle Orbiters. Due to the high level of modifications it is likely these will be retained solely for parts to support the Stratospheric Observatory for Infra-red Astronomy (SOFIA) B-747 after final ferry flights to transport the Space Shuttles to their final destinations.

The anticipated reduction in size of the astronaut corps after Shuttle retirement will also result in a need for fewer T-38 jet trainers. NASA currently plans to reduce its T-38 fleet to 20 aircraft by 2010. Any T-38 jets excess to the Agency's future operational needs will be disposed of in accordance with NASA's personal property disposition guidelines and procedures.

6.0 Conclusion



Lockheed Martin Corp. artist rendering of an Orion crew vehicle launching atop an Ares I rocket

Transition represents a series of strategic challenges that are influenced by the interaction of people, organizations, processes, regulations, ongoing tactical decisions, external drivers, technology, and the interconnections between different events. To ensure success, OI has initiated an Agency-wide Transition approach, led by a joint team comprised of HQ and Center Transition Managers. Working through formalized Transition Control Board processes, OI is responsibly managing decisions in a way that optimizes opportunities for success in the Constellation Program. The plan emphasizes best practices, sound program management guidance, and robust systems engineering principles to effectively implement the infrastructure Transition activities.

Appendix A: Acronyms

AA	Assistant Administrator
ACHP	Advisory Council on Historic Preservation
AMARG	Aerospace Maintenance and Regeneration Group
AMD	Aircraft Management Division
AMR	Asset Master Record
BW	Business Warehouse
C3PO	Commercial Crew and Cargo Program Office
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CoF	Construction of Facilities
COTS	Commercial Orbital Transportation Services
CRM	Cultural Resource Management
CxP	Constellation Program
CxCB	Constellation Control Board
CxP	Constellation Program
DFRC	Dryden Flight Research Center
ECR	Environmental Compliance and Restoration
EF	Ellington Field
EMD	Environmental Management Division
EMO	Environmental Management Officer
EMR	Equipment Master Record
EMS	Environmental Management System
EPFOL	El Paso Forward Operating Location
ERIC	Exploration Requirements for Institutional Capabilities
ESMD	Exploration Systems Mission Directorate
EST	Environmental Support Team
DSPL	
FAR	Federal Acquisition Regulations
FERP	Facilities Engineering and Real Property Division
FONSI	Finding of No Significant Impact
GAO	Government Accountability Office
GSA	General Service Administration
HPO	Historic Preservation Officer
HPWG	Historic Preservation Working Group
HQ	Headquarters
HQTWG	Headquarters-level Transition Working Group
IAM	Integrated Asset Management
iJICB	Infrastructure Joint Integration Control Board
ICE	Integrated Collaborative Environment
IEMP	Integrated Enterprise Management System
IM	Integrated Milestones
ISS	International Space Station
ISSP	International Space Station Program
ITAR	International Traffic in Arms Regulations

iTCB	Infrastructure Transition Control Board
iTransition	Infrastructure Transition
JSC	Johnson Space Center
KSC	Kennedy Space Center
LMD	Logistics Management Division
MAF	Michoud Assembly Facility
MILA	Merritt Island Launch Area
MPIM	Multiprogram Integrated Milestones
MSFC	Marshall Space Flight Center
NASA	National Aeronautics and Space Administration
NASM	National Air and Space Museum
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPD	NASA Policy Directive
NPDMS	NASA Property Disposal Management System
NPR	NASA Procedural Requirement
NRHP	National Register of Historic Places
OCE	Office of the Chief Engineer
OI	Office of Infrastructure
OSMA	Office of Safety and Mission Assurance
PBMA	Process-Based Mission Assurance
PCARSS	Plant Clearance Automated Reutilization Screening System
PLCO	Plant Clearance Officer
PDO	Property Disposition Officer
PPBE	Planning, Programming, Budgeting, and Execution
PP&E	Property, Plant, and Equipment
RCRA	Resource Conservation and Recovery Act
RMB	Risk Management Board
RMT	Risk Management Team
SAP	Systems Applications and Products
SASP	State Agency for Surplus Property
SEMO	Supply and Equipment Management Officer
SF	Standard Form
SHPO	State Historic Preservation Officer
SOFIA	Stratospheric Observatory for Infra-red Astronomy
SOMD	Space Operations Mission Directorate
SSC	Stennis Space Center
SSFL	Santa Susana Field Laboratory
SSP	Space Shuttle Program
STaR	Shuttle Transition and Retirement
T&R	Transition and Retirement
TMO	Transition Management Office
USC	United States Code
USAF	United States Air Force
VSE	Vision for Space Exploration
WFF	Wallops Flight Facility

WSSH White Sands Space Harbor
WSTF White Sands Test Facility

Appendix B: Glossary

Agency Inventory is Government property that is still in the custody of NASA or its contractors, but it is no longer needed for its original purpose.

Contractor Acquired Property is property the contractor acquired but which was titled to the Government in accordance with the Government property clause in the contract.

Contractor Inventory is Government property that is no longer required for performance of a Government contract.

Demilitarization is the act of destroying the offensive or defensive characteristics of equipment or material to prevent its further military or lethal use.

Disposition is the act of preparing property for abandonment, destruction, or donation.

Donation refers to disposition of property through GSA to qualified non-Federal organizations, generally through State Agencies for Surplus Property (SASP) offices.

Eligible Donees are entities that are approved by the General Services Administration to receive donated Federal Government property. They typically request this property through their State Agency for Surplus Property (SASP).

Excess Property is Government property that is no longer required by the holding agency and is available for use by other agencies and departments of the Federal Government.

Government Furnished Property is property that was held by the Government and transferred to the contractor. It also includes contractor acquired property from prior contracts and completed deliverable items left in place at the contractors site.

iTransition is the Infrastructure and Administration component of the Transition effort. iTransition focuses on identifying and distributing artifacts, dispositioning the excess shuttle property from the retirement of the shuttles, and dispositioning excess facilities.

iJICB is the Infrastructure Joint Integration Control Board, which provides an integrated strategic direction to infrastructure transition activities and helps determine priorities, risks, and mitigation strategies for those activities. The iJICB also assists with defining budgets, schedules, and operational requirements.

iTCB is the Infrastructure Transition Control Board, which serves as a collaborative, tactical, decision-making body focused on disposition of SSP assets in accordance with future exploration needs. The iTCB conducts three types of briefings: decision-making, information-only, and review of previous actions.

Near-site is a NASA contractor site located physically adjacent to a NASA Center or within close proximity to a NASA Center. Contract language may instruct near site contractors to disposition Government property through the Center Property Disposal Officer rather than through the Plant Clearance process.

On-site is within the physical boundaries of a NASA Center.

Off-site is outside of the physical boundaries of a NASA Center.

PCARSS, also known as the Plant Clearance Automated Reutilization Screening System, is part of the Government directive to achieve a paperless Contracting environment. It automates the process for reporting, screening, requisitioning and disposing of excess Government property located at contractor facilities.

Personal Property means any tangible property, except real property. It does not include software and data.

Surplus Personal Property means excess personal property no longer required by the Federal agencies as determined by GSA.

Transition is the careful planning, optimized utilization, and responsive disposition of personnel, processes, resources, and real and personal property, focused upon leveraging existing Shuttle and ISS assets for Exploration programs' safety and mission success. NASA Transition has four components 1) Space Shuttle Program Transition & Retirement (T&R); 2) International Space Station Program Shuttle Transition and Retirement (STaR); 3) Constellation Transition(s) from Development to Operations; and 4) Commercial Orbital Transportation Services (COTS) Transition to ISSP Crew Resupply Services. Space Shuttle Transition and Retirement (Shuttle Phase-out) is comprised of two activities – Close Out of the Space Shuttle Program (including disposition of excess property), and transfer of any assets needed by Constellation, International Space Station or other NASA flight programs.

Appendix C: Memorandum of Understanding between NASA and the National Air and Space Museum (NASM)

AGREEMENT BETWEEN THE NATIONAL AERONAUTICS AND SPACE ADMINISTRATION AND THE SMITHSONIAN INSTITUTION CONCERNING THE TRANSFER AND MANAGEMENT OF NASA HISTORICAL ARTIFACTS

WHEREAS in the course of its programs the National Aeronautics and Space Administration produces a large number of artifacts, many with great historical value and others with great value for education, exhibition, and other purposes, relating to the development, demonstration, and application of aeronautical and astronautical science and technology of flight, and will continue to acquire such materials; and

WHEREAS such artifacts are unique specimens relating to the science and technology of aeronautics and astronautics, and of flight in the atmosphere and space, which may consist of aeronautical and astronautical objects including, but not limited to, aircraft, space launch vehicles, spacecraft (both manned and unmanned), subsystems of the above, such as rocket engines, pressure suits and personal equipment, instruments, significant recorded data, operating handbooks, drawings, photographs, motion picture film and related documents, audio and video tapes, training devices, simulators, and memorabilia; and

WHEREAS the Smithsonian Institution is charged with the responsibility to preserve for perpetuity artifacts representative of aviation and space flight; to collect, preserve, and display aeronautical and space flight equipment of historical and educational interest and significance; to serve as a repository for scientific equipment and data pertaining to the development of aviation and space flight; and to provide educational material for the historical study of aviation and space flight.

THEREFORE, under the authority set forth in Section 203(c)(6) of the National Aeronautics and Space Act of 1958, as amended (72 Stat. 430; 42 U.S.C. 2473(c)(6); Section 4 of the Act of August 30, 1961 (75 Stat. 415, 20 U.S.C. 80c); and Sections (4) and (8) of the National Air Museum Amendments Act of 1966 (80 Stat. 310, 311; 20 U.S.C. 77a, 77d), the National Aeronautics and Space Administration (hereafter called "NASA") and the Smithsonian Institution (hereafter called "Smithsonian") enter into this Agreement concerning the transfer and management of those artifacts having such historical and educational or other value which have emerged and will emerge from the aeronautical and space programs administered by NASA.

1. NASA shall offer to transfer to, and the Smithsonian may accept such artifacts under NASA control which become available, after programmatic utility to NASA or other government agencies has been exhausted, although, in extraordinary circumstances, exceptions or alternative dispositions can be made by NASA. Before the decision to make an exception or alternative disposition is made, the proposed action shall be referred to the Joint Artifacts Committee (established in paragraph 4, below) for consideration. In addition, the Smithsonian may, pursuant to the procedures contained in paragraph 4, call a special meeting of the Joint Committee to discuss the transfer or

preservation of items of unusual historical interest that NASA has not yet declared to be artifacts. In either instance, if no consensus can be achieved by the Joint Artifacts Committee, the issue shall, upon request of either NASA or the Smithsonian, be referred to the NASA Administrator and the Director of the Smithsonian's National Air and Space Museum (NASM) for consideration. In the event agreement still cannot be reached, the NASA Administrator will decide the issue. NASA undertakes no obligation to provide financial support to the Smithsonian for the storage, transport, preparation, and final transfer of space artifacts.

2. The Smithsonian Institution's National Air and Space Museum will accession into its National Collections and accept responsibility for the custody, control, protection, preservation, and display of such artifacts transferred by NASA both in the Museum itself and on loan to NASA and other appropriate organizations in a manner consistent with the prevailing collections policy of NASM. If NASM refuses a request from a NASA component or visitor center for a loan of a NASA artifact, or states its intention to terminate or not to renew an existing loan to NASA, NASA may call a meeting of the Joint Committee at which the reasons for and possible alternatives to the denial will be discussed. Loans of artifacts to NASA shall be made for periods of from three to five years, with the expectation that renewals will be granted. NASM may specify reasonable curatorial practices to be followed by NASA components or visitor centers with respect to loaned NASA artifacts, and NASA will implement these practices to the extent practicable.

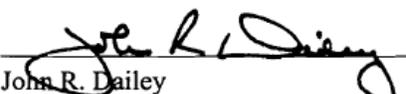
3. In connection with the NASA artifacts transferred to the Smithsonian, it is understood that in no instance shall a NASA artifact be finally disposed of to an agency other than the United States Government, or destroyed, before an opportunity is extended to NASA to reacquire, not on a basis of purchase but of reasonable defrayment of the costs involved, custody, and control of the artifacts. Further, in the event that NASA determines that an item declared an artifact and transferred to the Smithsonian has renewed technical utility with respect to NASA's programs, the NASA Chair of the Joint Artifacts Committee may request NASM to loan the item back to NASA. NASM will make a good faith effort to comply with the NASA request in light of NASA's stated need and the potential impacts on the NASM collection and/or operations. In utilization of this procedure, both NASA and the NASM will work promptly and closely to minimize any adverse impact that the loan could have on NASM operations. Cost of shipping and packaging the item for return to NASA will be borne or reimbursed by NASA.

4. The Smithsonian and NASA will establish a Joint Artifacts Committee to collect information on and consider issues relating to NASA artifacts and their transfer to the Smithsonian. This charter includes, but is not limited to, those issues identified for Committee consideration in paragraphs 1 and 2 above. It is anticipated that the Committee will meet at least two times per year, although either NASA or NASM may call a special meeting on 30 days notice.

5. The agreement shall be effective for five years from the date of the latest signature. Unless written notification is given by either party at least six months prior to expiration, it will be renewed automatically for an additional five years.



Michael D. Griffin
Administrator
National Aeronautics and Space
Administration



John R. Dailey
Director
National Air and Space Museum
Smithsonian Institution

Date 8 Aug 2008

Date 8.20.08