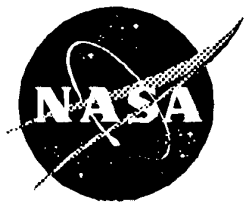

National Aeronautics and
Space Administration

**Lyndon B. Johnson Space Center**
Houston, Texas 77058

**NSTS 60576**

**SPACE SHUTTLE**

# SPACE SHUTTLE PROGRAM
# TRANSITION MANAGEMENT PLAN

**MAY 9, 2007**

# REVISION LOG

| REV LTR | CHANGE NO | DESCRIPTION | DATE |
|---|---|---|---|
| | | BASELINE ISSUE (Reference: Space Shuttle PRCBD S063552, dated 4/11/07). | 05/09/07 |

CHANGE SHEET

FOR

NSTS 60576 - Space Shuttle
Space Shuttle Program
Transition Management Plan

CHANGE NO. 1

Program Requirements Control Board Directive No. S063700/(1-1), dated 10/18/07.(1)

November 8, 2007

Kathleen E. Kaminski
Secretary, Program Requirements
Control Board

---

CHANGE INSTRUCTIONS

1. Remove the following listed pages and replace with the same numbered attached pages:

| Page | PRCBD No. |
|---|---|
| vii - ix | S063700 |
| x | |
| 2-1 | S063700 |
| 2-2 | |
| 4-7 | S063700 |
| 4-8 | |
| 5-1 | S063700 |
| 5-2 | |
| 5-19 | |
| 5-20 - 5-22 | S063700 |
| A-3 - A-5 | S063700 |
| A-6 | |

| | |
|---|---|
| D-1 | S063700 |
| D-2 | |
| D-3 - D-6 | S063700 |
| D-7 - D-10 (Add) | S063700 |
| J-1 | S063700 |
| J-2 | |
| J-3 - J-8 (Add) | S063700 |

NOTE: A black bar in the margin indicates the information that was changed.

2. Remove the List of Effective Pages, dated May 9, 2007 and replace with List of Effective Pages, dated November 8, 2007.

3. Sign and date this page in the space provided below to show that the changes have been incorporated and file immediately behind the List of Effective Pages.

_____ _____

Signature of person incorporating changes Date

NSTS 60576 - Space Shuttle
Space Shuttle Program
Transition Management Plan

## LIST OF EFFECTIVE PAGES

November 8, 2007

The current status of all pages in this document is as shown below:

| Page No. | Change No. | PRCBD No. | Date |
|---|---|---|---|
| i - vi | Baseline | S063552 | April 11, 2007 |
| vii - ix | 1 | S063700 | October 18, 2007 |
| x | Baseline | S063552 | April 11, 2007 |
| 1-1 - 1-4 | Baseline | S063552 | April 11, 2007 |
| 2-1 | 1 | S063700 | October 18, 2007 |
| 2-2 - 2-4 | Baseline | S063552 | April 11, 2007 |
| 3-1 - 3-2 | Baseline | S063552 | April 11, 2007 |
| 4-1 - 4-6 | Baseline | S063552 | April 11, 2007 |
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| 4-8 | Baseline | S063552 | April 11, 2007 |
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| 6-1 - 6-2 | Baseline | S063552 | April 11, 2007 |
| A-1 - A-2 | Baseline | S063552 | April 11, 2007 |
| A-3 - A-5 | 1 | S063700 | October 18, 2007 |
| A-6 | Baseline | S063552 | April 11, 2007 |
| B-1 - B-4 | Baseline | S063552 | April 11, 2007 |
| C-1 - C-6 | Baseline | S063552 | April 11, 2007 |
| D-1 | 1 | S063700 | October 18, 2007 |
| D-2 | Baseline | S063552 | April 11, 2007 |
| D-3 - D-10 | 1 | S063700 | October 18, 2007 |
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| G-1 - G-12 | Baseline | S063552 | April 11, 2007 |
| H-1 - H-4 | Baseline | S063552 | April 11, 2007 |
| J-1 | 1 | S063700 | October 18, 2007 |
| J-2 | Baseline | S063552 | April 11, 2007 |
| J-3 - J-8 | 1 | S063700 | October 18, 2007 |

NSTS 60576

# SPACE SHUTTLE

# SPACE SHUTTLE PROGRAM
# TRANSITION MANAGEMENT PLAN

Approved by:

Robert M. Lightfoot
Transition Manager, Space Shuttle Program

4/23/07
Date

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# PREFACE

Efficient management of the Space Shuttle Program (SSP) dictates that effective control of program activities be established. Requirements, directives, procedures, interface agreements, and system capabilities shall be documented, baselined, and subsequently controlled by SSP management.

Program requirements, specific to transition, controlled by the Manager, Space Shuttle Program, are documented in Volume XX of NSTS 07700. This Transition Management Plan (TMP) defines the management approach to accomplish the Volume XX requirements. The management organizational structure, interfaces, processes, products and tools to implement and manage the Transition and Retirement (T&R) of the SSP capabilities are described within the TMP. The Office of Prime Responsibility (OPR) for the TMP is the SSP Strategic Planning Office (SPO). Changes to the TMP are approved at the Transition Program Requirements Control Board (TPRCB) which is chaired by the Transition Manager, Space Shuttle Program.

All elements of the SSP must adhere to these baselined requirements. When it is considered by the Space Shuttle program element/project managers to be in the best interest of the SSP to change, waive or deviate from these requirements, an SSP Change Request (CR) shall be submitted to the Program Requirements Control Board (PRCB) Secretary. The CR must include a complete description of the change, waiver or deviation and the rationale to justify its consideration. All such requests will be processed in accordance with NSTS 07700, Volume IV - Book 1 and dispositioned by the Manager, Space Shuttle Program, on a Space Shuttle PRCB Directive (PRCBD).

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# 1.0 INTRODUCTION

## 1.1 BACKGROUND

On January 14, 2004, President Bush announced the Vision for Space Exploration (VSE). The first goal of the vision is completing assembly of the International Space Station (ISS) and retiring the Space Shuttle by 2010. In support of this goal, the Space Shuttle Program (SSP) evaluated hardware, infrastructure, and workforce inventories needed to continue Space Shuttle flights through 2010. The SSP also initiated a number of best practices research studies of previous and on-going closeouts within and external to NASA. The closeouts included the United States Air Force Titan IV program, Navy Base Realignment and Closure activities, and the NASA Downey facility. The complete reports of the best practices research studies are available at http://sspweb.jsc.nasa.gov/webdata/spo/transition/documents.htm.

In 2006, NASA developed the Human Space Flight Transition Plan pursuant to Section 502(b) of the NASA Authorization Act of 2005. The plan includes a description of how NASA will deploy personnel from, and use the facilities of, the SSP to ensure that the Space Shuttle operates safely through its final flight, and to ensure personnel and facilities from the SSP are effectively used in NASA exploration programs.

## 1.2 PURPOSE

This document defines how the SSP is organizing and managing the implementation of its end-of-program Transition and Retirement (T&R) to support the VSE and to align with the Human Space Flight Transition Plan. This plan describes the organizational structure, management approach, processes, products, and tools to manage the T&R of the SSP capabilities. The results of the closeout best practices research studies and the deliberations and recommendations of the Integrated Space Operations Summit process were taken into consideration in developing this document. This document will be revised as SSP T&R management organizations, processes, and products evolve.

## 1.3 SCOPE

This document is applicable to the NASA centers, organizations and personnel involved in the conduct of the SSP T&R. SSP program and elements/projects are responsible for implementing the project level requirements.

## 1.4 CHANGE CONTROL

The Transition Program Requirements Control Board (TPRCB) has baseline authority for this plan. All changes shall be coordinated through the Strategic Planning Office (SPO), and submitted to the TPRCB on the most current version of an SSP Change Request (CR) form.

### 1.5 GOALS AND OBJECTIVES

The SSP T&R goals and objectives were developed in order to meet the agency's transition goals and the VSE. At the end of T&R, all the program capabilities will either be transitioned or retired from the SSP rolls, as those capabilities are no longer required. For purposes of this plan, transition is defined as the process of planning and implementing tasks required to transfer SSP capabilities, in whole or in part, to another program or the institution. Retirement is defined as a form of transition, but for which there is no reuse within NASA. Retired capabilities will be either preserved due to historical significance, donated, sold, or scrapped/demolished. (Reference Appendix C for definitions of additional terms.)

The SSP T&R goals are to:

a. Take no action that will impede the ability to safely and effectively complete the fly out of the SSP

b. Perform T&R in a cost effective manner

c. Provide an interface to other programs and institutional elements for capability transition

To meet these goals the following objectives have been identified.

## TABLE 1.1

## SSP TRANSITION OBJECTIVES

| Transition Objectives | Rationale |
|---|---|
| Maintain flight safety | First and foremost, SSP T&R must not impact safety of flight. Each decision is to be made with a clear understanding of its effect on the risk posture of the SSP and the informed approval of the responsible managers. |
| Maintain ground safety | SSP T&R must not impact safety of ground support personnel and assets. T&R of ground facilities and tools are also to be assessed for risk prior to execution by management. |
| Make efficient use of resources | Transition is to strive for expeditious decision-making and implementation to avoid waste, minimize closeout costs, and maximize funding available for follow-on programs. |
| Preserve critical skills for use within NASA | Human capital planning is to ensure the retention of critical skills and knowledge required for successful fly-out and follow-on programs. |
| Preserve SSP physical assets for use by other NASA programs | The SSP T&R requirements are to provide good stewardship of NASA infrastructure to facilitate use by other programs. |

## TABLE 1.1

## SSP TRANSITION OBJECTIVES - Concluded

| Transition Objectives | Rationale |
|---|---|
| Preserve critical single-source suppliers for use by other NASA programs | Best efforts are to be made to assure the availability of goods and services needed by follow-on programs in instances of limited or single-source availability and high-risk vendors. |
| Advise the SSP Planning, Programming, Budgeting, and Execution (PPBE) process | Transition planning and processes are to produce products and guidelines that help shape SSP element/project budget formulation in order to enable transition processes and reduce total SSP program costs as soon as possible. |
| Manage Environmental Risks | SSP transition plans and processes must identify and mitigate environmental risks and associated tasks to assure environmental laws and regulations as well as NASA policies and guidelines are followed. |
| Meet legal/Federal Acquisition Regulations (FAR)/contractual constraints | Transition closeout and transfer activities must fulfill contractual obligations and be consistent with FAR. |
| Meet historical preservation guidelines | Transition decision-making must accommodate federal, state, and local historical preservation policies. Transition processes are to ensure historical preservation is factored into budget formulation. |
| Maximize stakeholder consensus | Successful transition of the SSP requires buy-in from both external and NASA stakeholders. Decision-making processes are to solicit the views and desires of the stakeholders and provide due process prior to a decision. |
| Be responsive to political concerns | The SSP and NASA Headquarters (HQ) transition management must provide adequate public visibility into SSP transition planning and decision-making to ensure political issue resolution without undue delay. NASA SSP transition teams are to generate frequent and substantive status reports to support external requests for information. |
| Minimize negative impacts to morale | Mission execution and T&R planning and execution are to include measures to minimize adverse impacts to morale. Sensitivity to the concerns of people involved is essential to successful SSP retirement. |

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## 2.0 APPLICABLE DOCUMENTS

The latest revisions of the following documents form a part of this document to the extent specified herein.

| | |
|---|---|
| NSTS 07700<br>Volume IV<br>(Current Issue) | Configuration Management Requirements |
| | Ref. Apx. B |
| NSTS 07700<br>Volume IV - Book 1<br>(Current Issue) | Configuration Management Requirements, Requirements |
| | Ref. Preface, Para. 4.5.4 |
| NSTS 07700<br>Volume XIX<br>(Current Issue) | Program Risk Management Plan |
| | Ref. Para. 5.3.7.1; Apx. B |
| NSTS 07700<br>Volume XX<br>(Current Issue) | Transition and Retirement Requirements |
| | Ref. Preface, Para. 4.3.3, 5.3.3.3, 5.3.6, 5.4.1; Apx. B |
| NSTS 60575<br>(Baseline Pending) | Space Shuttle Program Transition and Retirement Environmental Plan |
| | Ref. Apx. B |
| FAR 45 | Government Property |
| | Ref. Apx. D |
| FAR Part 45.3 | Providing Government Property to Contractors |
| | Ref. Para. 5.3.2 |

| | |
|---|---|
| FAR Part 45.5 | Management of Government Property in the Possession of Contractors<br><br>Ref. Para. 5.3.2 |
| FAR Part 45.6 | Reporting, Reutilization, and Disposal<br><br>Ref. Para. 5.3.2 |
| JPR 1440.3 | JSC Files and Records<br><br>Ref. Para. 5.3.5, Fig. 5-13 |
| KNPD 1440.1 | Records Management and Vital Records Program<br><br>Ref. Para. 5.3.5, Fig. 5-13 |
| MPR 1440.2 | MSFC Records Management Program<br><br>Ref. Para. 5.3.5, Fig. 5-13 |
| NASA FAR Supplement Subpart 1845 | Government Property<br><br>Ref. Para. 5.3.2 |
| NPD 1440.6 | NASA Records Management<br><br>Ref. Para. 5.3.5.3, Fig. 5-13 |
| NPD 4100.1 | Supply Support and Material Management Policy<br><br>Ref. Para. 5.3.2 |
| NPD 4200.1 | Equipment Management<br><br>Ref. Para. 5.3.2 |

| | |
|---|---|
| NPD 4300.1 | NASA Personal Property Disposal Policy<br><br>Ref. Para. 5.3.2 |
| NPD 4300.4 | Use of Space Shuttle and Aerospace Vehicle Materials as Mementos<br><br>Ref. Para. 5.3.4.3 |
| NPR 1441.1 | NASA Records Retention Schedules<br><br>Ref. Para. 5.3.5.3, Fig. 5-13, 5-14; Apx. H |
| NPR 4300.1 | NASA Personal Property Disposal Procedural Requirements<br><br>Ref. Para. 5.3.2; Apx. D |
| NPR 4310.1 | Identification and Disposition of NASA Artifacts<br><br>Ref. Para. 5.3.2, 5.3.4.3, 5.3.4.5; Apx. D |
| NPR 8800.15 | Real Estate Management Program Implementation Manual<br><br>Ref. Para. 5.3.2 |
| NPR 8810.1 | Master Planning Procedural Requirements<br><br>Ref. Para. 5.3.2 |
| NSTS TBD | Human Capital Management Plan<br><br>Ref. Apx. B |
| TCB-001 | NASA HQ Human Space Flight Transition<br><br>Ref. Para. 5.3.6 |

| | |
|---|---|
| 41CFR102<br>Chapter 36-40 | Disposition of Excess Personal Property<br><br>Ref. Para. 5.3.2 |
| 44 USC 3301 | Definition of Records<br><br>Ref. Para. 5.3.5, Fig. 5-13 |

## 3.0 GROUNDRULES, CONSTRAINTS AND ASSUMPTIONS

The following groundrules, constraints and assumptions are established to support the development of the approach to manage SSP T&R activities.

a. Program complete is defined as the successful completion of the manifest while maintaining full confidence in the integrity of the system throughout the schedule.

b. The last flight of the SSP will be completed by the end of fiscal year 2010.

c. The manifest defined by the PPBE process defines the baseline flight schedule for T&R planning and budget estimation.

d. The SSP will not make T&R decisions that compromise safety to the crew, to ground teams, or to the public.

e. The mission execution and T&R emphasis is to maintain capability for only as long as it is needed to safely execute the manifest, and then to disposition the capability.

f. SSP T&R activities utilize existing NASA institutional processes to the greatest extent possible.

g. SSP T&R scope and schedule for each year is constrained by the amount of funding the SSP Program Manager is able to allocate from the SSP annual operating budget for T&R activities, and a firm T&R completion date cannot be determined due to the funding uncertainties.

h. SSP T&R will use existing budgetary processes with transition requirements being captured as specific elements under the existing budgetary structure as requirements are identified.

i. SSP T&R is annually funded by the SSP Program Manager to an amount that can be allocated from the SSP operating budget, which means a firm T&R completion date cannot be determined.

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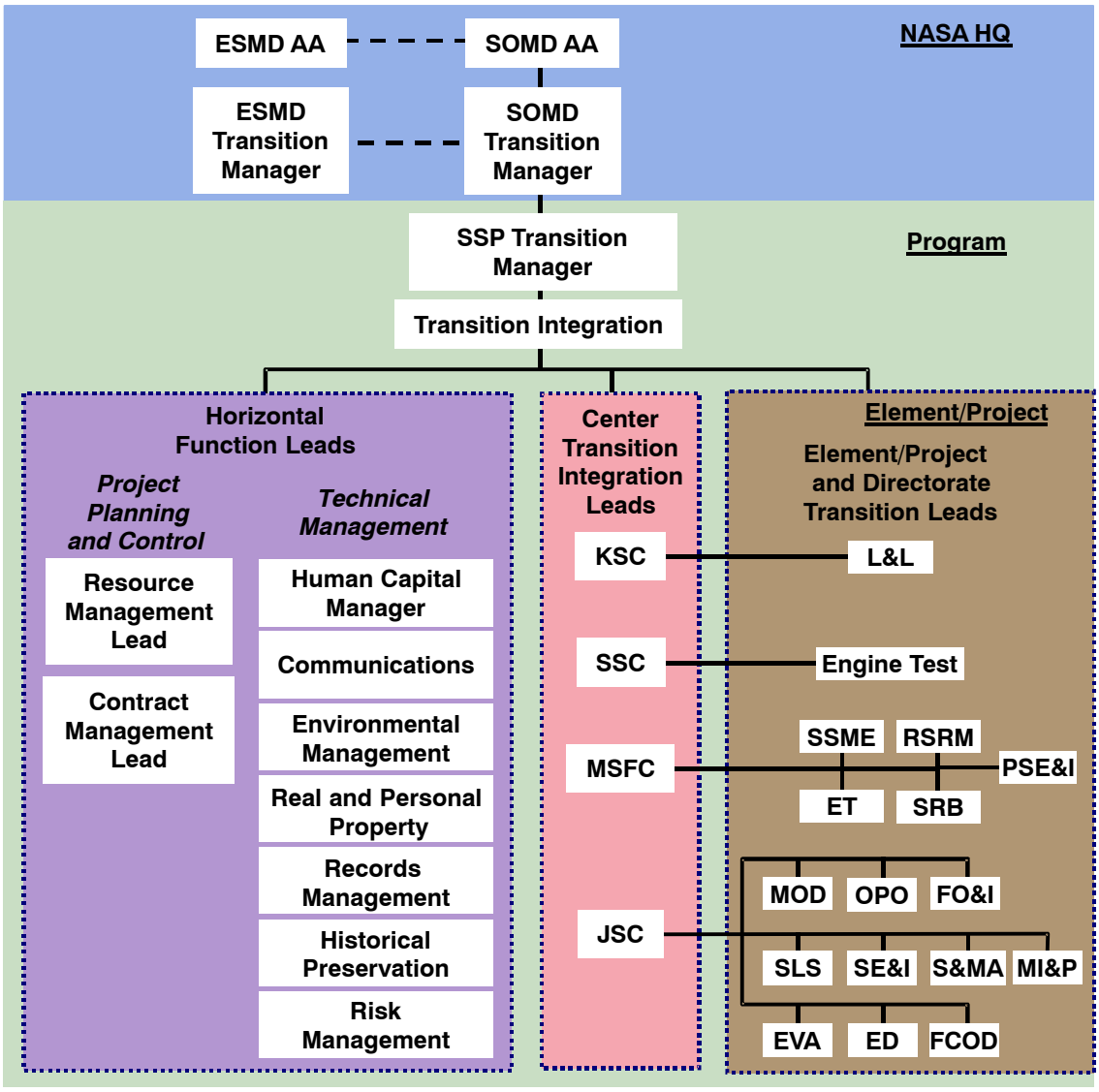
## 4.0 GOVERNANCE

This section describes the lines of authority and reporting for the SSP T&R activities, including the board structure that provides the forums for managing the T&R components of cost, schedule, technical and risk.

### 4.1 ORGANIZATIONAL STRUCTURE

**FIGURE 4-1**

**SSP T&R ORGANIZATION STRUCTURE THROUGH 2010**



The organizational structure begins at NASA HQ with the Associate Administrator (AA) and the Space Operations Mission Directorate (SOMD) Transition Manager. At the program level, the SSP Program Manager has delegated responsibility for the T&R activities to an SSP Transition Manager. Sections 4.2 through 4.4 provide additional detail on the T&R organizational structure. Not shown in Figure 4-1, are the representatives from the ISS Program and the Constellation Program (CxP) that are involved at the HQ, SSP and center-level discussions due to shared or potential transfer of capabilities.

The organizational structure depicted in Figure 4-1 is assumed to exist through 2010 with a restructure anticipated after 2010. As 2010 approaches, the post-2010 organization and board structure will be defined and published in this management plan.

## 4.2 NASA HQ T&R ORGANIZATION

Oversight for SSP T&R at NASA HQ is provided through the SOMD. The SOMD AA assigns a SOMD Transition Manager to oversee the day-to-day T&R issues for NASA HQ. Their counterparts in the Exploration Systems Mission Directorate (ESMD) are involved in T&R to enable cross-program synergy of capability utilization. Decision-making is supported through the Joint Integrated Control Board (JICB) and the Transition Control Board (TCB) as defined in Section 4.5.

## 4.3 PROGRAM T&R ORGANIZATION

### 4.3.1 SSP Transition Manager

The SSP Transition Manager leads the SSP T&R activities. The SSP Transition Manager has primary responsibility for SSP T&R cost, schedule, technical, and risk management. The SSP Transition Manager chairs the TPRCB and authorizes T&R funding, prioritizes tasks and provides direction for asset disposition for program-level issues that cannot be resolved at the element/project-level. The SSP Transition Manager is the prime interface with NASA HQ for SSP transition reporting and decision requests.

### 4.3.2 SSP Strategic Planning Office

The SSP SPO is responsible for integration of the program T&R planning, management and reporting. The SPO provides direct support to the SSP Transition Manager, coordinates the horizontal transition functions defined in Section 5.3, and chairs the Transition Integration Working Group (TIWG) as described in Section 5.2.3.

### 4.3.3 Horizontal Function Leads

The horizontal functions, common to the program, are prescribed in NSTS 07700, Volume XX, Transition and Retirement Requirements.

T&R project planning and control is provided by the Space Shuttle Business Office (SSBO). The SSBO assigns leads for Resource Management and Contract Management. These leads are responsible for providing the overall budget management and contract management functions for the SSP Transition Manager.

T&R technical management is provided by functional areas. The SSP Transition Manager identifies transition leads in functional areas to facilitate coordination across centers and elements/projects. The functional areas are:

a. Human Capital Management

b. Real and Personal Property Management

c. Environmental Management

d. Historical Preservation

e. Records Management

f. Communications Management

g. Risk Management

The horizontal functions are described in more detail in Sections 5.2.1 and 5.3.

### 4.3.4 Center Transition Integration Leads

Given the unique issues faced by the NASA centers that support the SSP, the SSP Program Manager, assigns Center Transition Integration Leads to provide an intermediate-level of integration of SSP element/project T&R activities at each Center and to provide an SSP T&R interface to center management and institutions that support SSP T&R.

Each Center Transition Integration Lead provides management oversight and integration of the center's SSP elements/projects. Each Center Transition Integration Lead also provides information regarding the status of activities, issues, or other T&R topics to the TIWG, TPRCB and Transition Quarterly Program Manager's Review (TQPMR) on an as-needed basis.

### 4.3.5 Representatives from Other Programs

The ISS Program and CxP participate in a number of T&R forums at the agency, SSP and center levels. This participation encourages open communication of program requirements and schedules for more informed transition decision-making.

## 4.4 ELEMENT/PROJECT T&R ORGANIZATION

Each SSP element/project and directorate assigns a transition lead that is responsible for all transition planning and implementation within that element/project. Responsibilities include, but are not limited to, scheduling, coordination, integration, developing

T&R budget requirements in the PPBE submittals, and developing T&R Decision Packages (DPs). A key area of responsibility is to fully integrate all decisions within the element/project and with the institutional stakeholders.

Element/Project and directorate members include:

a. Engineering Directorate (ED)

b. Engine Test

c. External Tank (ET)

d. Extravehicular Activity (EVA)

e. Flight Crew Operations Directorate (FCOD)

f. Flight Operations and Integration (FO&I)

g. Launch and Landing (L&L)

h. Management Integration and Planning (MI&P)

i. Mission Operations Directorate (MOD)

j. Orbiter Project Office (OPO)

k. Propulsion Systems Engineering and Integration (PSE&I)

l. Reusable Solid Rocket Motor (RSRM)

m. Safety and Mission Assurance (S&MA)

n. Solid Rocket Booster (SRB)

o. Space Shuttle Main Engine (SSME)

p. Space Shuttle Systems Engineering and Integration (SE&I)

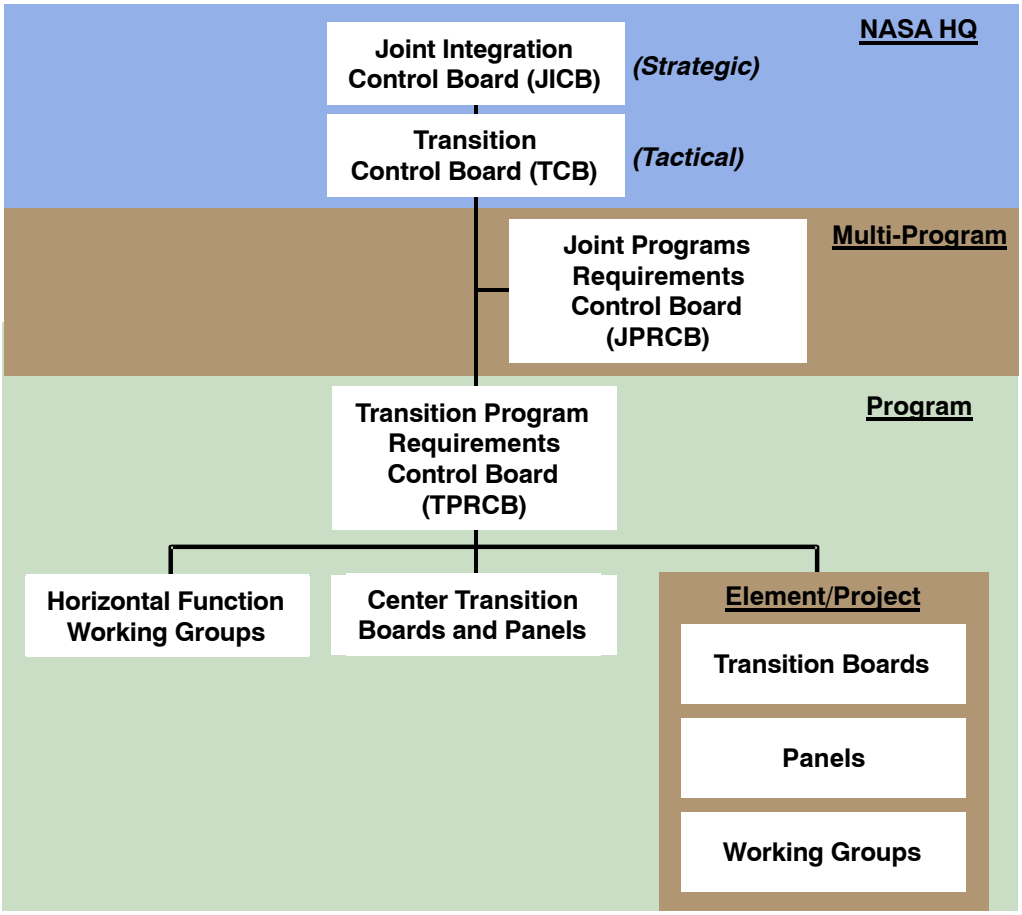
q. Space Life Sciences (SLS)

### 4.5 T&R BOARDS AND WORKING GROUPS

A transition-unique board structure at NASA HQ, the centers, and within the SSP is established to manage the T&R activities (reference Figure 4-2). Program working groups are also established to support several of the SSP T&R functional areas. The elements/projects have the flexibility to create transition-unique boards or to integrate the transition review and decision-making into existing boards.

## FIGURE 4-2

## T&R BOARDS AND WORKING GROUPS




The Human Space Flight Transition Plan identifies the need for the SSP, CxP and ISS Program to work together to define an intelligent and efficient transition of capabilities. The interface between programs is provided through membership and participation in various T&R forums. The JICB and TCB forums provide an interface between SOMD, ESMD and the agency's Mission Support Offices for CxP and ISS Program. The cross-program interface is further enhanced through CxP and ISS Program membership and participation in the TPRCB and center-level transition forums.

### 4.5.1 Joint Integration Control Board

The JICB is a NASA HQ board co-chaired by the AA's for SOMD and ESMD, with the directorate transition manager acting as the executive secretariats. The JICB is a strategic decision-making body that meets on a monthly basis and is restricted to Civil Servant attendance. The JICB:

a. Focuses on strategic decisions

b. Ensures the successful integration of development with operations in support of the Exploration Architecture

c. Establishes and maintains an integrated perspective, drawing on key cross-Directorate, center, and Program leadership to ensure joint strategic direction and decision-making on integrated priorities and risk mitigation strategies, budgets, schedules, and top-level development and operation requirements

d. Resolves conflicting Directorate priorities, makes decisions, evaluates progress of implementing decisions, and directs required course correction to achieve the decisions goals

### 4.5.2 Transition Control Board

The TCB is a NASA HQ board jointly chaired by SOMD, ESMD, and agency institutions and Management Office. The TCB is a tactical decision-making body that meets monthly to perform shared program transition planning. The TCB:

a. Evaluates program transition decisions on SSP resources to ensure efficiencies and synergies are realized

b. Ensures that mechanisms and timing for transfer of capabilities are in place

c. Promotes the possible evolution of infrastructure to advance future programs and/or reduce operational cost

d. Serves as a formal mechanism to ensure adequate cross-Directorate level consideration is provided prior to the formal program divestment of assets considered of no further value

e. Communicates its activities, as required, to agency governing councils

f. Performs tactical implementation and decision making for transition related activities

### 4.5.3 Joint Program Requirements Control Board

The JPRCB is a tri-program board chartered to resolve joint technical and programmatic issues and/or the approval of joint program requirements, agreements (memorandum of agreement, etc.), and milestones. The JPRCB resolves issues and/or approve joint program baseline documents and changes, such as requirements, agreements, schedules, and rules that are not delegated to a lower authority. The JPRCB is co-chaired by the program managers of the SSP, ISS Program and CxP.

### 4.5.4 Transition Program Requirements Control Board

The TPRCB is chaired by the SSP Transition Manager with two meetings per month nominally scheduled.

The TPRCB authority, responsibilities and membership are defined in NSTS 07700, Volume IV - Book 1, Configuration Management Requirements, Requirements.

TPRCB authority includes, but is not limited to:

a. All decisions within a predefined transition budget/reserves allocation in order to fulfill the Program Manager's transition delegation intent

b. Transition issues are elevated to the TCB upon direction from the TPRCB

Prime contractors inputs to this board are made via their respective SSP board representatives.

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## 5.0 OVERALL MANAGEMENT APPROACH/PHILOSOPHY

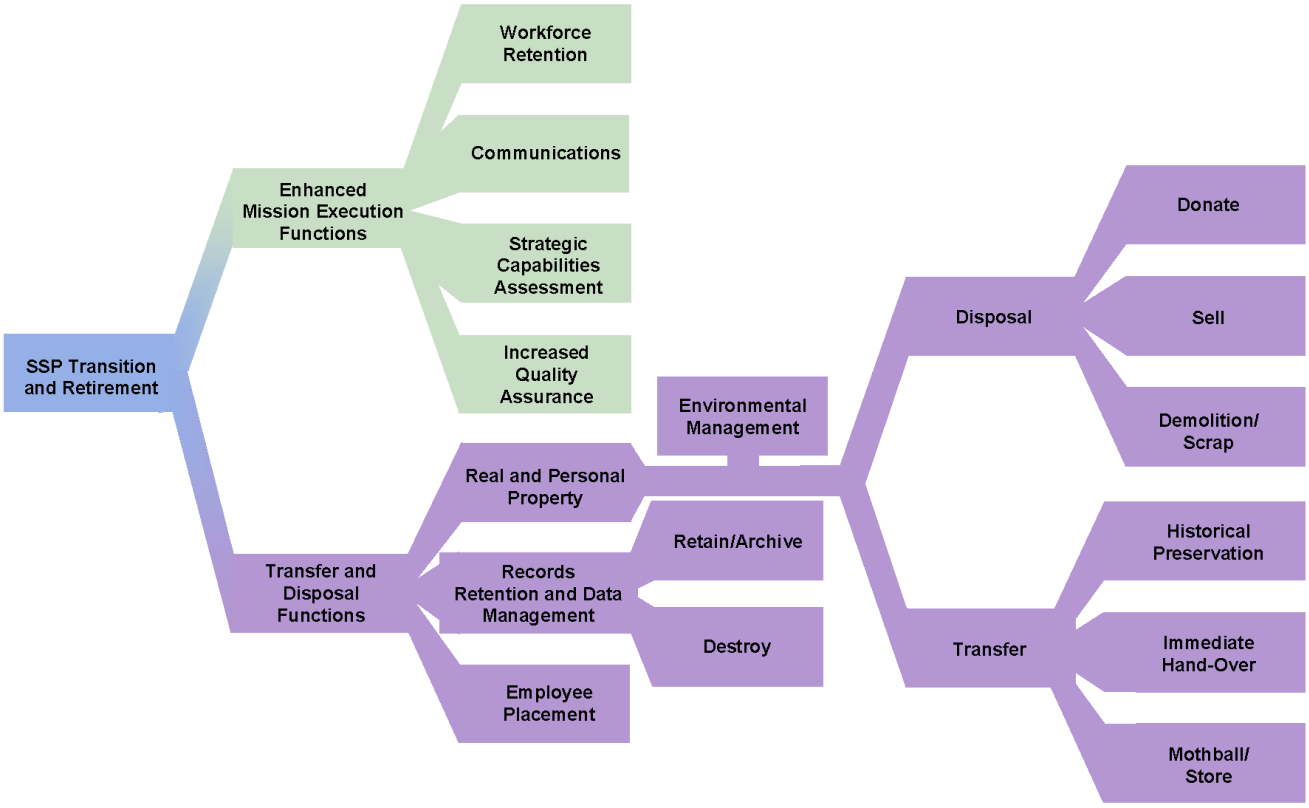
As the SSP nears retirement, the management approach needs to focus on two major functions to accomplish the goals of the SSP T&R: enhanced mission execution; and transfer and disposal. The separation of these functions allows management to concentrate on their different goals and objectives.

Enhanced mission execution functions are defined as the additional set of activities that are uniquely required due to the program's pending retirement and to safely fly the remaining flights of the Space Shuttle.

The transfer and disposal functions are defined as the program activities needed to prepare for and facilitate transfer or disposal of SSP capabilities and to complete program retirement.

**FIGURE 5-1**

**TRANSITION FUNCTIONS**




*Two functions are carried out to accomplish the goals of SSP T&R - enhanced mission execution functions and transfer and disposal functions. The separation of transition into mission execution and transfer and disposal addresses their different goals and objectives.*

To accomplish the T&R functions, processes and tools have been developed to assess the capabilities of the SSP; develop plans to retain, transfer, or excess these capabilities; and then implement those plans, reference Figure 5-2.

The overall approach to successful T&R includes the following activities:

a. Performing best practices research in order to develop an understanding of predecessor work for major program closeouts or terminations

b. Identifying the strategic capabilities across the Program which allows decisions to be made relative to a capability - the human capital, tangible assets and intangible assets - recognizing the dependency between the three components of a capability

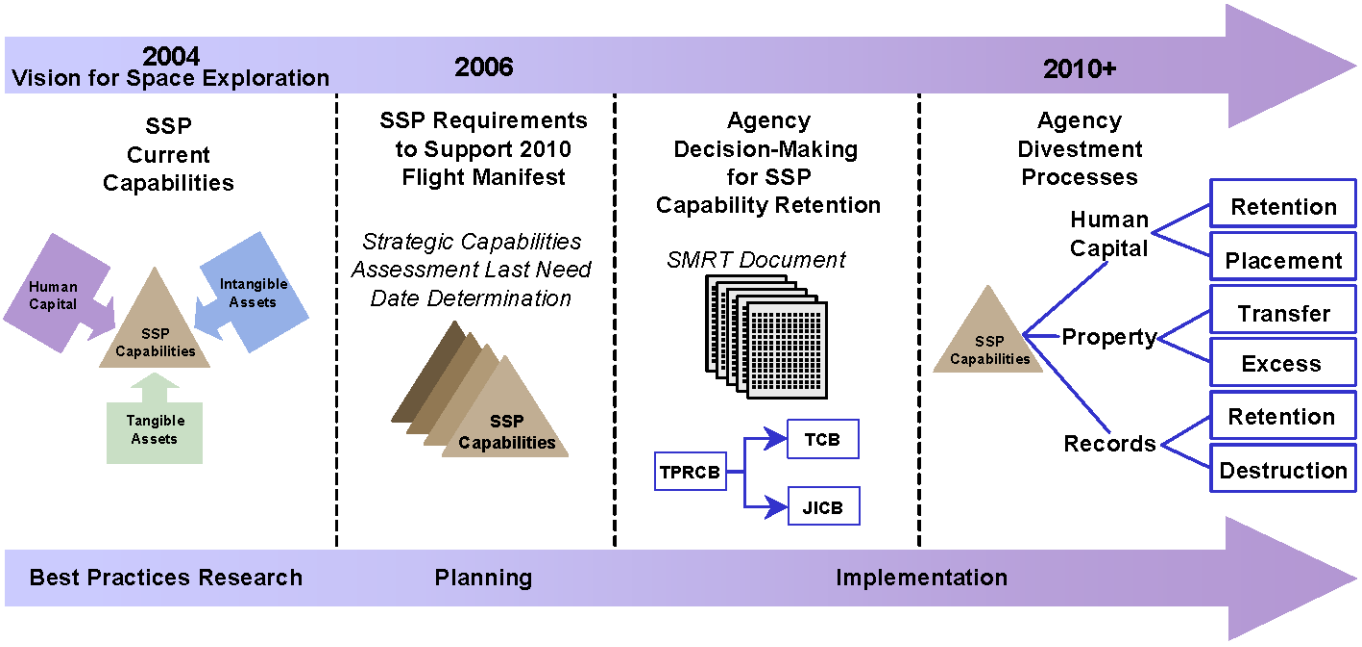
c. Evaluating capabilities for the Last Need Date (LND) to support the manifest

d. Evaluating capabilities that have LNDs prior to the end of the program to ensure release of that capability does not increase risk to mission execution

e. Implementing disposition decisions following review and approval at the appropriate level board

**FIGURE 5-2**

**SSP T&R PROCESS**




*This figure shows the overall flow of the T&R process along with tools that have been developed to support the process.*

## 5.1 T&R ACTIVITIES

### 5.1.1 Best Practices

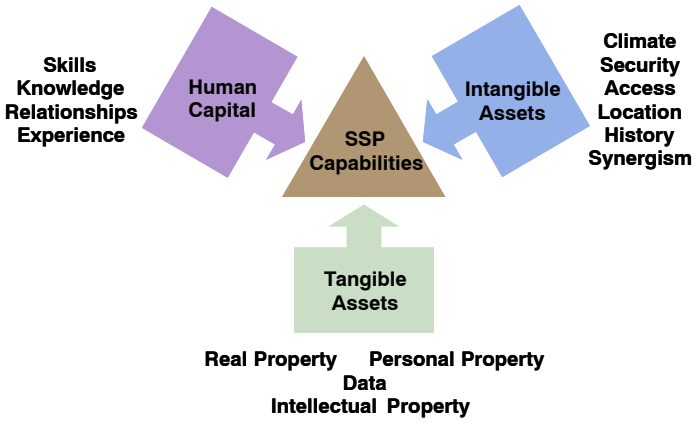
One of the initial T&R activities undertaken was best practices research of previous and on-going closeouts. Results of the research can be found at the SSP SPO website http://sspweb.jsc.nasa.gov/webdata/spo/transition/documents.htm .

### 5.1.2 Planning

Based on the results from the best practices research, the T&R planning starts with an identification of the Program's strategic capabilities. SSP capabilities are composed of three main components: human capital, tangible assets, and intangible assets (reference Figure 5-3). The combination of human capital and assets provides the SSP with a suite of capabilities that are used to implement program objectives. Performing a Strategic Capability Assessment (SCA) is the first and most important element of the overall SSP T&R effort as it provides the initial review and categorization of SSP assets. As shown in Figure 5-1, the SCA is an enhanced mission execution function that defines capability requirements through the end of the program. The SCA starts with each element/project defining their top-level capabilities in support of mission execution requirements. The elements/projects then perform a risk assessment that defines the LND for each capability while maintaining an acceptable level of risk for operations. The element/project managers make the determination on the acceptable level of risk for mission execution. The capabilities are then assessed for LND and other information used in T&R planning. The elements/projects are responsible for providing and maintaining the applicable SCA data. An SCA database is utilized by the program and elements/projects to document the capabilities of the SSP. (Reference Appendix F for detail on the dataset blocks of the SCA database.)

**FIGURE 5-3**

**CAPABILITY COMPONENTS**




*The combination of human capital, tangible assets, and intangible assets define the SSP capabilities.*

Once the capabilities and program requirements for those capabilities have been documented in the SCA, management can utilize this information in the decision making process. In general, these capabilities are assessed and a decision process determines whether to: 1) retain the capability for current or subsequent NASA programs, 2) transfer it to an external agency, 3) preserve it, or 4) dispose of it. The agency's capability disposition decision process weighs each capability's value to NASA and to the nation by carefully considering how human capital, tangible assets, and intangible assets can provide value to other NASA programs.

The T&R decision process provides direction and appropriate delegation of authority for decisions associated with the disposition of capabilities released from Mission Execution by element/project managers. To ensure an efficient process due to the large scope of the SSP, it requires decision-making on the release of assets to be made at the lowest level possible. The process does provide mechanisms to elevate issues and decisions to the Program or agency as necessary, as well as reporting of decisions made at the lower levels. The criteria used to determine which level can make decisions include their dollar value, replacement cost, location, political sensitivity, condition, risk, and uniqueness.

The SSP elements/projects control boards provide the first level review of disposition decisions for SSP capabilities. Element/Project control boards report decision results to the TIWG for the purpose of process performance metrics. Decisions that are beyond the element/project authority are elevated to the TPRCB. The elements/projects have the flexibility and responsibility for defining their specific review and decision-making process. These will be documented in the individual element/project Transition Management Plans (TMPs).

## FIGURE 5-4

## CAPABILITIES DISPOSITION PROCESS

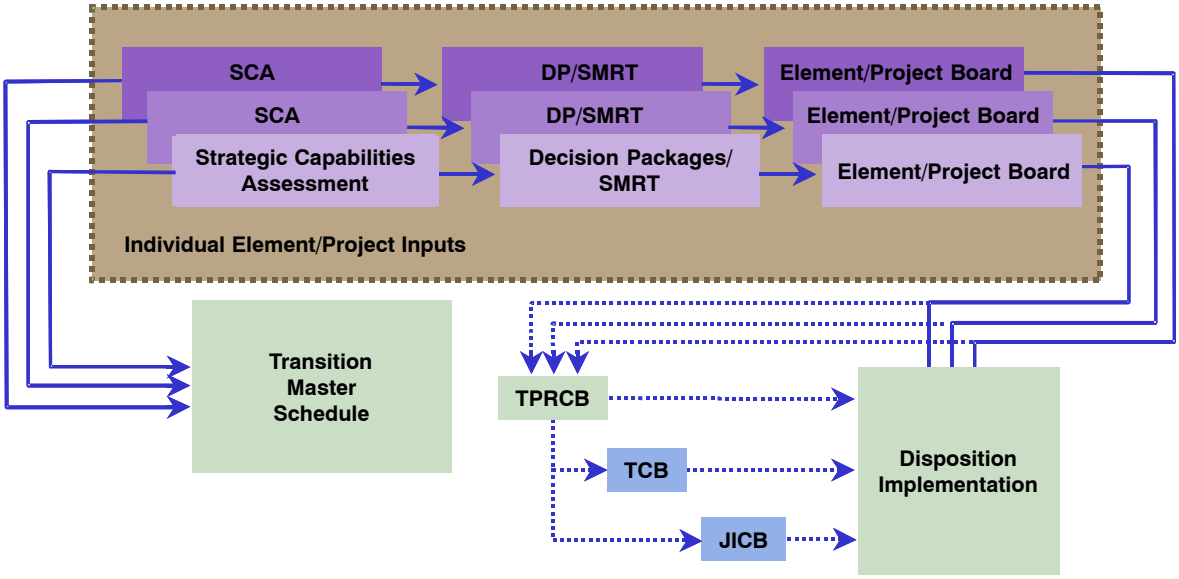



*Figure 5-4 provides a detailed functional flow of the capabilities disposition process. It shows the relationship of the various tools utilized for T&R as well as the need to maintain the decision-making authority at the lowest level possible while maintaining reporting to the higher levels.*

One of the primary tools used to ensure that credible, consistent, and accurate information is provided to management for decision-making is the Space Shuttle Management Resource Transition (SMRT) document. The document provides a body of relevant information from which decisions are rendered, communicated, and documented. The SMRT document is used to elevate capability decisions to the appropriate approval level and, when required, facilitate decisions about how retained assets will be sustained and funded prior to a new program assuming their costs. In addition, the SMRT document can be called upon in the future to explain why the decisions to either transfer or phase-out of a specific SSP capability were made. The configuration controlled baseline version of the SMRT document is attached as Appendix G. The current version of the SMRT document template can be found at http://sspweb.jsc.nasa.gov/webdata/spo/transition/documents.htm.

### 5.1.3 Implementation of T&R Plans

Once a decision is made to transition or retire a capability, the existing institutional processes will be utilized to accomplish this task. Appropriate funding and authority is provided to the SSP elements or host field center to implement the disposition decisions.

The SSP's SCA identifies program real and personal property and human capital assets that are no longer required to successfully fly out the program. These assets enter the disposition process sooner than those that are needed for mission execution. The items that have larger implications for individual institutions, future programs, and national space flight capability will be dispositioned through the agency-wide process, as will eventually all of the mission execution-necessary assets that meet these criteria.

## 5.2 T&R MANAGEMENT AND CONTROL

### 5.2.1 Budget and Procurement

#### 5.2.1.1 Objective

The SSBO establishes and maintains the business and contract management controls over the T&R work, and manages the PPBE process for T&R to promote cost effective T&R planning and implementation.

#### 5.2.1.2 People/Working Group

The SSBO has assigned T&R leads for Resource Management and Contracts Management to give clear lines of responsibility for directing, managing and reporting the resources associated with SSP T&R. The SSBO leads provide the overall budget management and contract management functions for the SSP Transition Manager.

#### 5.2.1.3 Process and Tools

As a subset of the total SSP budget, SSP T&R resources are governed by the processes, products and services identified within the SSBO work instructions. Unique fund codes and work breakdown structure have been established to enable the Program to manage and track the T&R costs.

The PPBE process establishes the requested funding to perform the T&R functions. The distribution of funds is made on an approval basis through the CR process at the TPRCB. The T&R resource lead maintains the fund availability status for the SSP Transition Manager to support the decision-making process.

#### 5.2.1.4 Interfaces

The SSBO Leads interface with the SSP Business Manager and the Transition Manager to obtain direction for flow down to the elements/projects. The SSBO Leads interface with the elements/projects to provide business and contract direction and guidance that is:

a. Consistent across the elements/projects

b. Conforms to SSP business practices

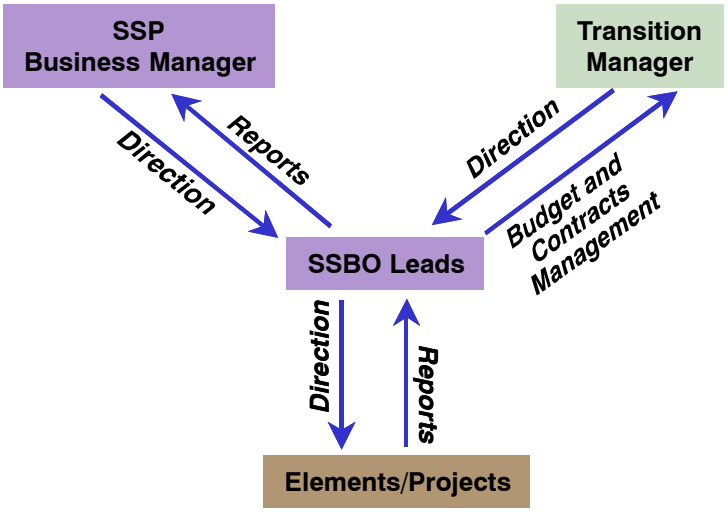
c. Compliant with T&R goals and budget constraints

The guidance includes establishing the need for the Contracting Officers and Contracting Officer's Technical Representatives for the SSP prime contracts to conduct the necessary planning to facilitate effective contract closeouts upon program completion.

Additionally, the SSBO Leads interface with the elements/projects to obtain budget performance and planning data that is flowed up to the SSP Business Manager and the Transition Manager.

**FIGURE 5-5**

**SSBO INTERFACES**




*The SSBO Leads receive direction from the SSP Business Manager and the SSP Transition Manager, and provide direction to the elements/projects.*

### 5.2.1.5 Products and Metrics

The SSBO develops PPBE guidelines for T&R-related cost estimating in line with Congressional appropriations, and issues the guidelines to the elements/projects and centers. The SSBO approves the PPBE inputs developed by the elements/projects and centers. Additionally, the SSBO distributes T&R funds as approved by the SSP Transition Manager.

The following budget and cost metrics are tracked and reported to assist the SSP Transition Manager on a monthly and trend basis. (Reference Appendix E for further metrics details.)

The first metric is cost avoidance that measures agency efficiencies associated with SSP transition to CxP. This includes multiple measurements which may range from cost avoidance to SSP associated with capability closeouts to cost burden to SSP for covering gap (subsidy to CxP or other programs). The data is obtained through analysis of capability dispositioning, board decisions, and other data.

Cost trends are shown by a graphic summary depiction of SSP budget performance with comparative data (actual costs compared to baseline program costs without T&R). The trend data is obtained through an analysis of TQPMR reporting data.

Budget status is a report of current funds available, liens and threats summary. This status is obtained from the SSP financial system and forecast data.

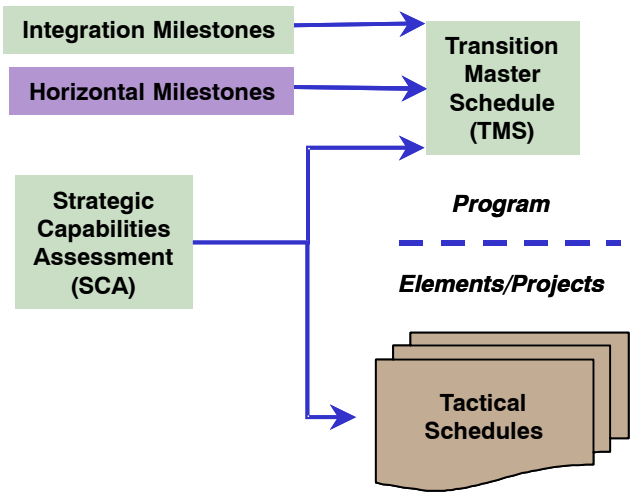
### 5.2.2 Schedule Management

#### 5.2.2.1 Objectives

Schedule management is performed at a strategic and tactical level. The strategic level captures capabilities LNDs and major milestones from the T&R horizontal and integration leads. This top-level schedule defines the Transition Master Schedule (TMS). The TMS provides a basis for the element/project tactical plans, and insight into T&R progress and expected TPRCB traffic. The tactical schedules are produced by the elements/projects in support of detailed planning. These schedules use the SCA LNDs to define lower level tasks necessary to prepare for disposition following the LND.

**FIGURE 5-6**

**TMS ARCHITECTURE**




*The T&R strategic schedule has two types of data, Transition Integration and SCA. The data is at the program-level and the tactical schedules are the element/project schedules.*

#### 5.2.2.2 People/Working Group

The TIWG is responsible for the development and management of the TMS, including statusing at the TQPMR.

#### 5.2.2.3 Processes and Tools

The element/project input and maintenance of the SCA database is critical to the usefulness of the TMS. Horizontal and integration milestones are updated on a monthly basis. These are managed by the appropriate lead and submitted to the TIWG for updates to the TMS. The TIWG maintains the TMS in a scheduling tool that provides baseline and plan schedule, and progress information. The baseline for both the TMS and the SCA dates are configuration controlled by the TPRCB in accordance with Appendix J, To Be Supplied.

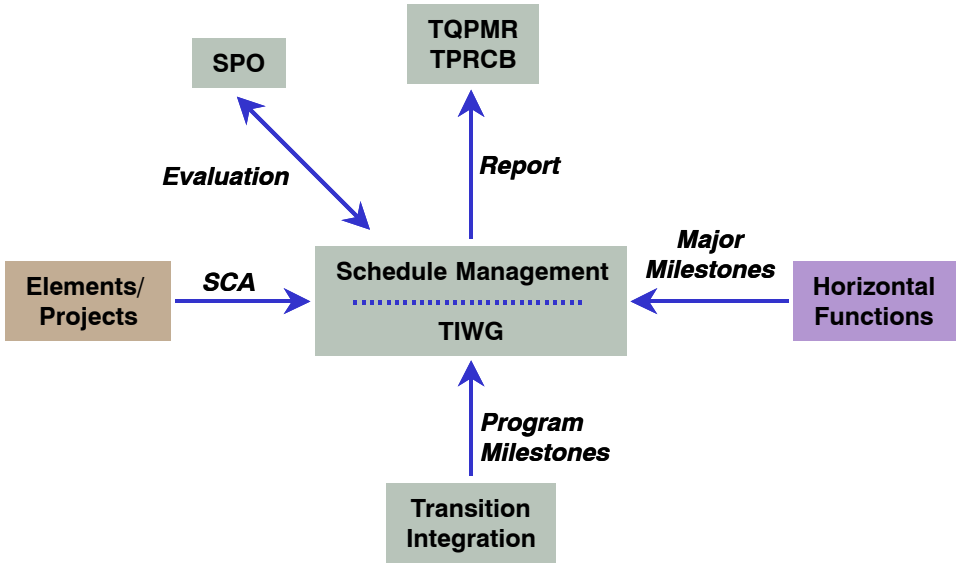
The SPO performs an integrated assessment of the TMS. The integrated assessment factors in program-wide risk assessment and utilizes the baseline shuttle manifest and launch schedule to determine if there are element/project level LNDs that could impact the program or other organizations. Additionally, the TMS is used to support time-phased cost estimates by defining the major milestones and LNDs.

#### 5.2.2.4 Interfaces

The TIWG is the central interface for all schedule management activities. The TIWG interfaces with the horizontal functions and transition integration for reporting of T&R milestones. The TIWG interfaces with the elements/projects to obtain inputs and maintenance of the SCA database. The TIWG interfaces with the SPO for evaluation of the TMS. The TIWG interfaces with the TQPMR and the TPRCB to provide schedule reporting.

## FIGURE 5-7

## SCHEDULE MANAGEMENT INTERFACES




*The TIWG is the central interface for the T&R schedule management.*

#### 5.2.2.5 Products and Metrics

The SCA data yields the SSP asset release schedule that flows into the overall SSP TMS. The TMS is a strategic schedule that provides the roadmap and pacing for the entire SSP T&R effort. Schedule performance is monitored by tracking and reporting schedule variance and trends. (Reference Appendix E for further metrics details.)

Tactical plans, that define the detailed steps required to achieve the LND milestones, will be developed and maintained by the elements/projects.

### 5.2.3 T&R Integration

#### 5.2.3.1 Objective

The T&R integration function occurs at two levels: 1) the program, and 2) the centers. The integration function is required to issue common guidance and direction, and to integrate the element/project information to the extent necessary for the Transition Manager to manage the overall T&R effort.

#### 5.2.3.2 People/Forums

TQPMR - The TQPMR is the forum for management review of integrated program-level status of T&R activities. The SSP Transition Manager chairs the TQPMR. The T&R

integration leads, horizontal function leads, and element/project transition leads present cost, schedule, technical, and risk management status at the TQPMR.

TIWG - The program-level integration function is performed by the TIWG. The TIWG provides T&R integration support to the SSP Transition Manager and the TPRCB. The TIWG is led by the SPO and supported by program office, the horizontal leads, element/project, and institutional support representatives, on an as-needed basis.

The purpose of the TIWG is to:

a. Provide integrated transition management products and services to support proactive management of SSP T&R by the SSP Transition Manager

b. Produce a documented record of SSP T&R execution

c. Manage the production of T&R metrics and TQPMR reports

Leadership Team - A transition leadership team is comprised of the SSP Transition Manager plus a core group of the T&R managers, including the Center Integration Leads, and program-level integration support. The transition leadership team provides leadership coordination, targets key issues for resolution, sets strategy, and provides guidance to element/project-level T&R managers.

Center Integration - To meet the needs of center-level integration, the Center Transition Integration Leads support forums to achieve integration among the resident programs, elements/projects, and institutions, and to promote the use of existing and common processes and requirements.

The JSC Transition Integration Panel (JTIP) is established as a forum for the planning, coordination, and integration of transition-related activities among the SSP, ISS Program, CxP, and JSC. The JSC Transition Integration Manager leads the JTIP with equal representation from the SSP, ISS Program, and CxP, and the Center Operations Directorate. Details of objectives and operations for this panel are documented in the JSC TMP. Reference Appendix B for relationship of this plan to other T&R plans. The JSC Transition homepage is located at http://sspweb.jsc.nasa.gov/webdata/spo/transition/jscInt/index.htm.

The MSFC Transition Working Group (MTWG) is established as a forum for planning, coordination, and integration of T&R-related activities among the SSP, ISS Program, CxP, and MSFC. The MSFC Transition Integration Manager leads the MTWG. Details of objectives and operations for this group are documented in the MSFC TMP. Reference Appendix B for relationship of this plan to other T&R plans. The MSFC Transition homepage is located at https://shuttleportal.msfc.nasa.gov/mt/default.aspx.

The KSC Transition Working Group is established as a forum for planning, coordination, and integration of T&R-related activities among the SSP, ISS Program, CxP, and KSC Institution. Details of objectives and operations for this team are documented in the KSC TMP. Reference Appendix B for relationship of this plan to other T&R plans. The KSC Transition homepage is located at http://ksctransition.ksc.nasa.gov/index.htm.

#### 5.2.3.3 Process/Tools

The process of T&R integration includes reviewing products, schedule analysis, and generating products for the TQPMR. The process to review T&R integration status is at the TQPMR. It is held to provide periodic status of progress and issues to the NASA T&R Team. Requested inputs are submitted by the Element/Project Transition Leads and horizontal leads. The focused review and NASA team attendance promotes a desired level of integration and coordination.

The tools of T&R integration include websites designed to aid in the T&R integration process. Center-level process and tools are identified in the center transition plans.

The SSP Transition website, a tool available to the greater NASA community, provides a resource for the entire NASA team. The SSP Transition website is located at http://sspweb.jsc.nasa.gov/webdata/spo/transition/index.htm.

The Transition SharePoint website provides document posting, action tracking, calendars, and on-line discussion capabilities for the transition team and sub teams. The Transition SharePoint website is an access-controlled collaboration tool designed for internal T&R Team use only. The Transition SharePoint website is located at https://portal.nasa.gov/sites/shuttletransition/default.aspx.

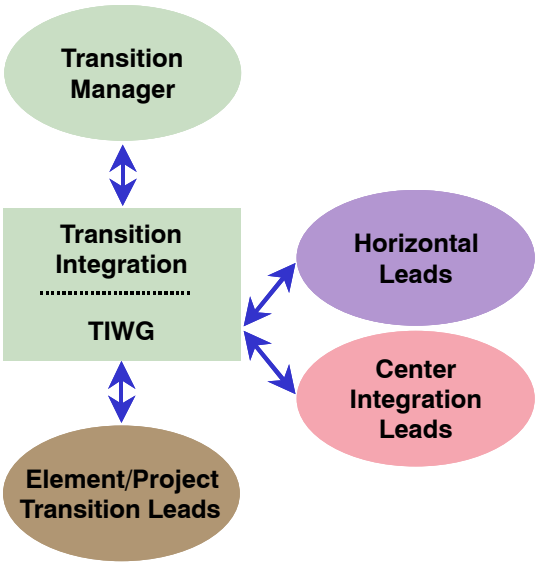
The SCA database website is a secure, web-accessible repository for capturing, maintaining, and tracking the strategic capabilities. The SCA data is “owned” by the responsible organization, and the database reporting capabilities allow the integrated assessment of that data. Additional details on the SCA and SCA database are provided in Appendix F. The SCA database is located at http://sspweb.jsc.nasa.gov/webdata/spo/transition/sca/scadb.htm.

#### 5.2.3.4 Interfaces

The TIWG is the central point for program-level transition integration. The TIWG interfaces with the Transition Manager to provide T&R integration support. The TIWG interfaces with the horizontal and integration leads to provide templates and requirements and to obtain report status updates. The TIWG interfaces with Element/Project Transition Leads to obtain status inputs and provide feedback on the inputs.

## FIGURE 5-8

## T&R INTEGRATION INTERFACES




*The TIWG is the central point for integration with all T&R interfaces.*

#### 5.2.3.5 Products and Metrics

The Transition Integration produces evaluation reports based on integrated assessments of the TMS and the SCA data. In addition, working through the TIWG, the TQPMR is coordinated and the integrated presentation package is produced. The Transition Integration Team is also responsible for managing the Program's T&R actions.

The primary metrics are defined in Appendix E.

The center integration leads define their products and metrics in the center transition plans.

### 5.3 T&R TECHNICAL MANAGEMENT

The program-level technical management is organized around common functions that cross all elements/projects. Each of these horizontal functions has defined lead positions that work to ensure the activities are handled in a consistent and coordinated manner. The horizontal functions are:

a. Human Capital Management

b. Property Management

c. Environmental Management

d. Historical Preservation

e. Records Management

f. Communication Management

g. Risk Management

### 5.3.1 Human Capital Management

#### 5.3.1.1 Objectives

NASA's number one priority is safe and successful mission execution through Space Shuttle fly-out and retirement no later than 2010. At the same time, the agency must plan for the smooth transition of much of the same workforce to other exploration programs during the short timeframe between SSP retirement and the beginning of future system operations. The SSP has identified retaining critical skills as a Top Program Risk (TPR) for safe and successful mission execution.

#### 5.3.1.2 People/Working Group

Because the transition spans multiple mission directorates, accountability for an effective transition rests with top agency management, supported by program and element/project managers in each mission directorate, and line managers at the centers. Some of the key roles and responsibilities relevant to the SSP workforce transition include:

a. Human Capital Manager (HCM) - The SSP Program Manager established the position of SSP HCM to maintain insight into human capital status throughout SSP T&R. The HCM's responsibilities include:

   1. Develop and implement the SSP Human Capital Management Plan

   2. Represent the current condition of the critical skill base (civil service and contractor) that supports the program

      (a) Establish metrics

      (b) Characterize risk

   3. Recommend strategies that mitigate the identified risks for civil service positions (e.g., retention incentives, alternative staffing, organization structure)

4. Recommend strategies to thoughtfully manage employee transitions (civil service)

5. Review and assess risk mitigation strategies (e.g., retention, alternative staffing) and transition plans for contractor positions

6. Assess and communicate best practices for critical skill retention and transition

7. Represent the program in various agency-wide forums and external reviews on human resource planning

b. SSP Human Capital Working Group (HCWG):

1. Address workforce management issues (led by the HCM)

2. Serve as the interface between the human capital community and the SSP Program Manager and Transition Manager

3. Serve as the SSP human capital interface with other programs i.e., CxP, ISS Program, Center Maintenance and Operations

4. Integrate across all centers (particularly SOMD centers), HQ, and the SSP elements/projects

c. Agency Office of Human Capital Management (OHCM):

1. Responsible for integrated workforce transition planning and management efforts across the agency

2. Provide agency-level leadership, expertise, and policy direction in work-force transition issues

3. Apply agency resources or influence to resolve workforce issues that cannot be solved by centers or programs alone

d. Center Management and Center Human Capital Officers:

1. Responsible for designing and implementing human capital strategies that ensure mission success

2. Human Capital Officers/Human Resource Directors serve as an advisory group and help integrate human capital strategies for the SSP

3. Engage mission directorates and agency offices when center efforts are insufficient to resolve civil service workforce transition issues at the center level

e. SSP Program Manager:

1. Responsible for managing human resources within the program to ensure mission success

2. Plan for future workforce needs and potential workforce transition costs related to significant program changes

f. Mission Directorates:

1. Responsible for workforce planning required to support programs and projects

2. Facilitate smooth, effective transition of workforce through assignment or redistribution of programs/projects/work to centers as appropriate to sustain 10 healthy centers

3. Provide information on program content to enable centers to determine how to plan for future workforce needs

g. Element/Project Managers:

1. Responsible for managing human resources within their project to ensure mission success

2. Identify critical skills needed to safely fly-out the Space Shuttle

3. Plan for future workforce needs and potential workforce transition costs related to significant project changes

#### 5.3.1.3 Processes and Tools

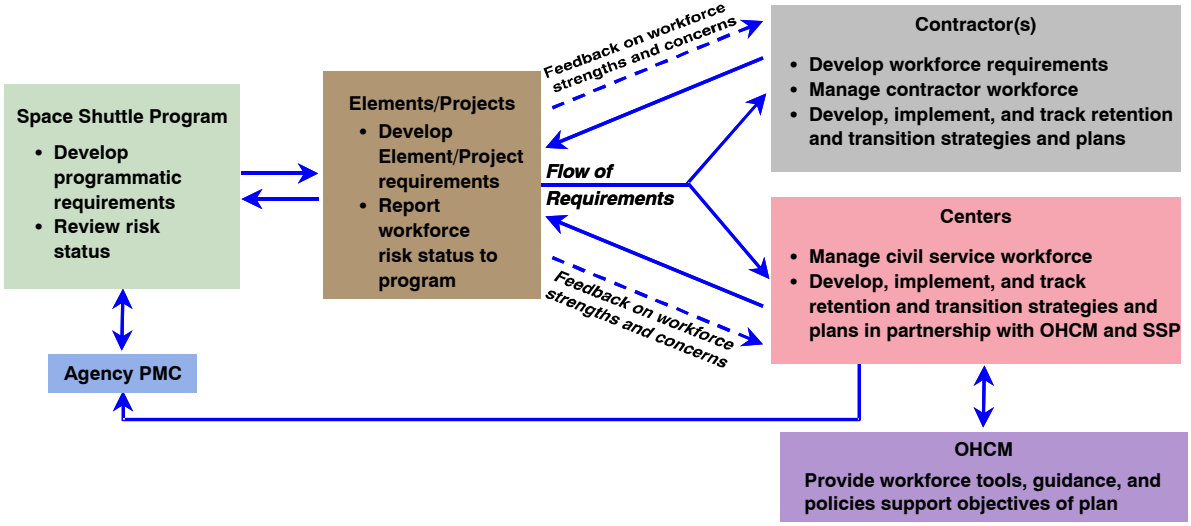
The SSP Human Capital Management Plan (reference Appendix B for relationship of Human Capital Management Plan to other T&R plans) focuses specifically on the strategies that NASA will implement to ensure retention of critical workforce skills needed for safe and successful mission execution and the smooth transition of Shuttle workforce skills, as appropriate, to the ISS Program, CxP, and other future programs. The latest plan is available in SSP T&R website at http://sspweb.jsc.nasa.gov/upgrades/transition/documents.htm.

The HCM assists the elements/projects with development of their individual Human Capital Management Plans. These plans are consistent with the SSP Human Capital Management Plan, and their focus is on the identification and monitoring of the critical and essential skills needed to successfully complete the mission execution objectives, definition of the skills retention approach, and development of a workforce transition

plan. The SSP elements/projects provide project level requirements to the centers and the contractors that are translated into contractor and civil service workforce requirements. The centers and prime contractors develop supporting human capital management plans. The SSP elements/projects provide feedback to the contractors and centers on their workforce plans, including retention and transition plans and strategies, and report element/project workforce risk status (both contractors and civil service) to the program. Figure 5-9 shows the SSP human capital process for workforce planning.

**FIGURE 5-9**

**SSP HUMAN CAPITAL PROCESS**




*This figure shows the SSP human capital process for workforce planning to define long-term program management requirements.*

Fundamental human capital tools used in SSP T&R are effective communication and collaboration between the key SSP stakeholders, especially the workforce. Keeping personnel up to date on the status of their work, benefits and entitlements, and their follow-on employment opportunities is an essential element of successful mission execution and transition. Active communication will be a key tool used to limit program risk throughout the remaining years of the SSP.

### 5.3.1.4 Interfaces

The HCWG interfaces with the human capital community across the agency. The HCWG works directly with the Space Shuttle Program Manager and the Transition Manager to assist in workforce planning. Additionally, the HCWG integrates across the centers, the SSP elements/projects and other NASA programs to communicate and facilitate smooth workforce transitions.

#### 5.3.1.5 Products and Metrics

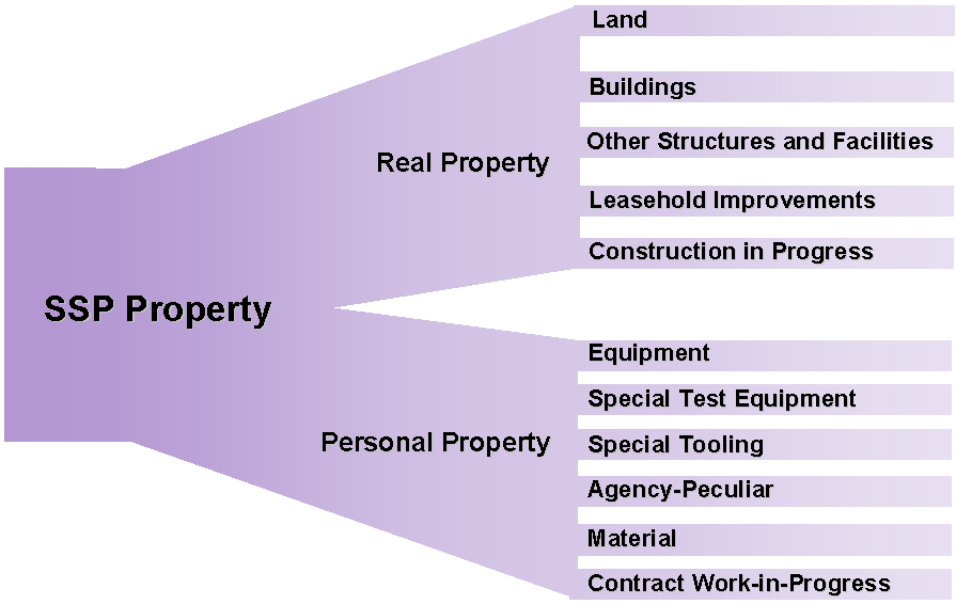
The HCM maintains appropriate metrics such as planned vs. actual civil service and contractor workforce numbers, workforce transition to other programs and attrition. These metrics are integrated at the agency, program, and center levels. (Reference Appendix E for further metrics details.)

### 5.3.2 Property Management

Among the tangible assets of the SSP are real property and personal property.

**FIGURE 5-10**

**SSP PROPERTY CLASSIFICATIONS**




*The tangible assets of the SSP include real property and personal property.*

Real property is defined as all land, buildings and other structures and their associated built-in systems that cannot be readily moved without changing the essential character of the real property.

Personal property is defined as all hard assets not classified as real property owned by, leased to, or acquired by the government, to include material, agency-peculiar property, special tooling, and special test equipment. It includes government furnished property made available to the contractor for use and contractor acquired property for the performance of the contract where the title of the property is vested in the government, including items fabricated by the contractor or its sub-contractors.

Disposition of Government property is controlled through Government documents and regulations to include the following:

| | |
|---|---|
| 41CFR102 Chapter 36-40 | Disposition of Excess Personal Property |
| FAR Part 45.3 | Providing Government Property to Contractors |
| FAR Part 45.5 | Management of Government Property in the Possession of Contractors |
| FAR Part 45.6 | Reporting, Reutilization, and Disposal |
| NASA FAR Supplement Subpart 1845 | Government Property |
| NPD 4100.1 | Supply Support and Material Management Policy |
| NPD 4200.1 | Equipment Management |
| NPD 4300.1 | NASA Personal Property Disposal Policy |
| NPR 4300.1 | NASA Personal Property Disposal Procedural Requirements |
| NPR 4310.1 | Identification and Disposition of NASA Artifacts |
| NPR 8800.15 | Real Estate Management Program Implementation Manual |
| NPR 8810.1 | Master Planning Procedural Requirements |

#### 5.3.2.1 Objectives

The primary objective of SSP Property Management during T&R is to maintain program integrity while simultaneously implementing the divestiture of program property no longer needed to meet program mission requirements. Prompt disposition of SSP property makes valuable assets available for follow-on programs, and minimizes agency costs for storage and sustainment.

#### 5.3.2.2 People/Working Group

The Horizontal Lead for Property provides the coordination between the institutional property personnel and the elements/projects.

A Personal Property Team (PPT), chaired by the HQ-designated Industrial Property Officer (IPO) and comprised of NASA property managers, is established to coordinate the activities related to the T&R of SSP personal property. The role of the PPT is to:

a. Advise and assist the Shuttle Program Office with decisions involving disposition of personal property, whether contractor or institutional held

b. Provide technical support for property disposal cost estimating

c. Coordinate with HQ on property issues requiring their assistance

d. Assure each center understands the policies and decisions from HQ

e. Share information between other centers' personal property managers on status and progress of disposition

f. Work with our Shuttle contractors' property managers to assure they are aware of the requirements

g. Assure our property systems are able to provide property metrics reports

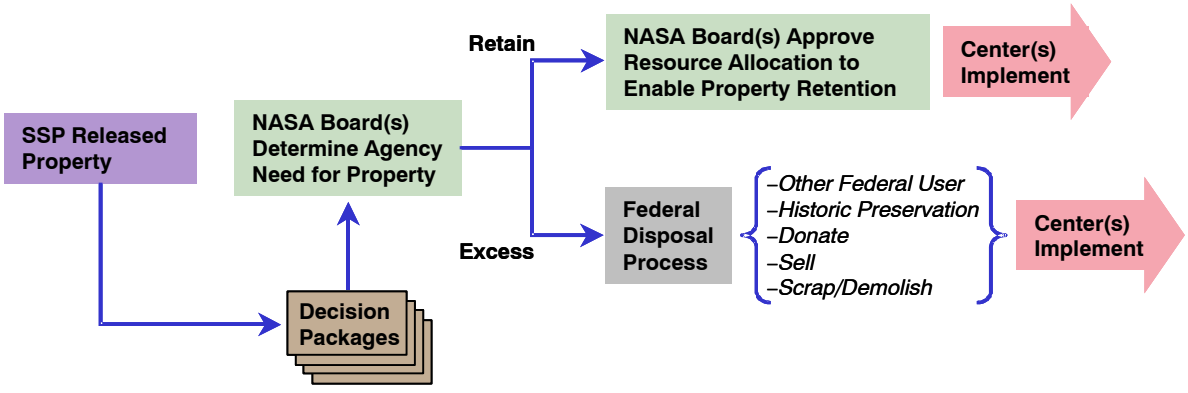
#### 5.3.2.3 Process and Tools

The SCA provides the starting point for property disposition by providing a high-level summary of mission execution requirements captured as capabilities with approved LNDs. Program and HQ approval of capability dispositions, as described in Section 5.0, guides the disposition of property.

Transition Property Assessment (TPA) continues the property disposition process by providing an early categorization and assessment of all SSP property. The elements/ projects perform the TPA in accordance with the TPA process detailed in Appendix D.

**FIGURE 5-11**

**PROPERTY DISPOSITION PROCESS OVERVIEW**




*This figure provides an overview of the property disposition process.*

Tactical planning within the program elements/projects identifies specific property associated with each capability and its Release Date (RD) or dates. RDs take into

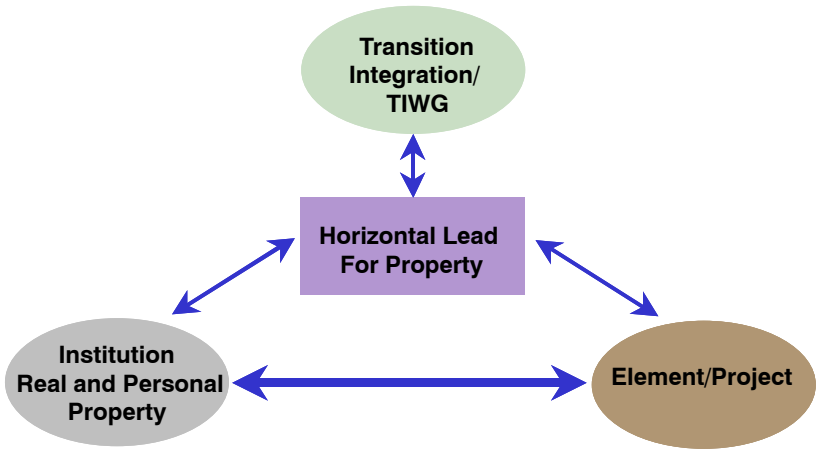
consideration all “make ready” tasks necessary to prepare property for release to plant clearance officers or center property disposal officers. These tasks may include hardware safing procedures, preparation for transportation, artifact assessments, precious metal extraction assessments, International Traffic in Arms Regulations (ITAR)/export control procedures, environmental clean up, or mothballing. Appendix D shows a general process flow for property disposition and disposal. Requirements vary for specific situations and require close coordination between SSP, contractor, and institutional property organizations.

#### 5.3.2.4 Interfaces

The Horizontal Lead for Property coordinates property activities within T&R, working closely with the PPT, the TIWG, the institutional property managers, and the elements/projects.

**FIGURE 5-12**

**PROPERTY MANAGEMENT INTERFACES**




#### 5.3.2.5 Products and Metrics

The products for property management are the responsibility of the elements/projects that hold the property, and the institutional organizations that are chartered to disposition property that is excess to the SSP’s needs. Tactical plans and schedules produced by the elements/projects and their prime contractors will document the specific release of real and personal property. These plans will support a basis of estimate for budget planning and institutional support planning. Detailed implementation planning will be focused to near-term RDs.

The Horizontal Lead for Property is responsible for the gathering, integrating and reporting property metrics. The elements/projects, in coordination with their prime contractors, are responsible for generation of the metrics data. Contractor-held personal

property metrics take advantage of existing reporting requirements in the prime contracts. These reports are delivered to the IPOs for each prime contract. The metrics measure the actual disposal of contractor-held personal property. Reference Appendix E for further metrics details. Forecasts of future personal property disposal levels will be generated during PPBE planning cycles.

Nearly all real property under SSP control is located on the NASA centers. The Center Transition Managers provide management oversight of real property during T&R. Facility usage reviews at each center coordinates SSP LNDs with other current and future customers and identifies gaps and overlaps. Center transition plans will address the overall management of real property transition and disposal.

### 5.3.3 Environmental Management

#### 5.3.3.1 Objective

The environmental objectives of the SSP T&R include:

a. To enable mission success by managing environmental responsibilities, identifying and mitigating environmental risks, providing adequate resources and technical support, and working with the mission stakeholders

b. To comply with all applicable federal, state, and local laws and regulations properly applicable to federal entities, as well as all applicable NASA requirements

c. To honor all agreements with other agencies, industry, organizations, and entities that are relevant to NASA's on-going environmental responsibilities

d. To include environmental considerations in the program and project management processes with emphasis on prevention, conservation, compliance, and restoration

#### 5.3.3.2 People/Working Group

The SPO establishes an Environmental Support Team (EST) to provide technical support to the planning and implementation of the T&R environmental tasks. Membership in the EST includes agency, center, Program, Element/Project, and prime contractor representation with interfaces to ISS Program and CxP. The intent is to communicate and integrate the environmental issues of SSP T&R with the agency organizations chartered to oversee NASA environmental management.

#### 5.3.3.3 Processes and Tools

The objectives will be accomplished using a risk management approach that builds on the existing environmental organizations, processes, and tools. SSP T&R environmental requirements are identified in NSTS 07700, Volume XX. An Environmental

Management Plan will be developed that addresses these requirements and provides the associated guidance. Implementation of the environmental plan will use the expertise of the EST to support the planning and execution efforts concerning environmental risk identification, mitigation, and documentation. Reference Appendix B for relationship of this plan to other T&R plans.

#### 5.3.3.4 Interfaces

Environmental issues associated with SSP T&R are identified and addressed through ongoing communication and cooperation among the SSP, CxP, ISS Program, other programs, HQ, and the centers. The EST acts as the focal point for the coordination required among all the stakeholder organizations in identifying and resolving the environmental risks.

#### 5.3.3.5 Products and Metrics

T&R environmental products include risk identification, risk mitigation plans, compliance documents, closeout documents, and budget projections. Many of the products will be provided as required by specific environmental regulations or government requirements, guidelines, and policies already in place, and may be prepared by organizations other than the SSP. When specific risks are identified, mitigation plans and closeout documentation are prepared.

The T&R environmental plan will describe the SSP environmental management metrics to be reported and monitored, and the responsible reporting and monitoring organization. Metrics will be collected to help monitor the progress on the environmental risk identification and mitigation. The information will be used to help make any process improvements needed to accomplish the overall environmental objectives.

### 5.3.4 Historical Preservation

#### 5.3.4.1 Objective

The NASA strives to identify landmarks and artifacts as early as possible in the T&R process to ensure adequate time is available to resolve technical and funding issues and minimize implementation delays.

#### 5.3.4.2 People/Working Group

Historical preservation is an integral part of property management and environmental management. To deal with the historic landmarks a Historic Preservation Working Group (HPWG) is established and is co-chaired by the Office of Infrastructure and

Administration's Environmental Management Division and the SSP management at NASA HQ. The HPWG membership includes the Historic Preservation Officers (HPOs) from the four main SSP centers (KSC, JSC, MSFC and SSC) and the component facility (Michoud).

An Artifact Committee is established within the agency to identify criteria and specific items of personal property that may be designated as historically significant.

#### 5.3.4.3 Process and Tools

Historical preservation of Government Property is controlled through Government documents and regulations that include the following:

| | |
|---|---|
| NPR 4310.1 | Identification and Disposition of NASA Artifacts |
| NPD 4300.4 | Use of Space Shuttle and Aerospace Vehicle Materials as Mementos |

The HPWG will perform an agency-wide site survey to assess SSP real property for historical significance in compliance with the National Historic Preservation Act and to support the programmatic environmental assessment performed in compliance with the National Environmental Policy Act (NEPA).

SSP personal property will be screened for historical significance per NPR 4310.1 within the existing personal property disposal process.

#### 5.3.4.4 Interfaces

The HPWG interfaces with the HPOs and the National Park Service, as well as center representatives for Property Management.

The Artifact Committee interfaces with the Smithsonian and museums, and all other institutions seeking artifacts from the SSP. All SSP artifacts contributions are coordinated through the Artifact Committee and then conducted by Property Management in accordance with the applicable NASA and government documents, regulations, and policies.

#### 5.3.4.5 Products and Metrics

Based on NPR 4310.1, much of the SSP hardware could be considered of historical significance, requiring historical preservation; however, carrying out such a task would be extremely time-consuming and cost prohibitive. To preclude this scenario, the NASA center's HPO establishes and defines pre-disposition criteria for determining eligibility of assets for listing on the National Register of Historic Places. The HPO conducts appropriate surveys to make these determinations prior to disposition. The NASA Center Artifacts Officer/Manager establishes and defines pre-disposition criteria for assets that may have historical artifact status.

The SSP elements/projects utilize the Artifacts Officer/Manager selection criteria to conduct assessments of their SSP assets to identify potential historical artifacts. Cost estimates for the preservation and curation of properties and artifacts are generated as part of the final decision for artifacts.

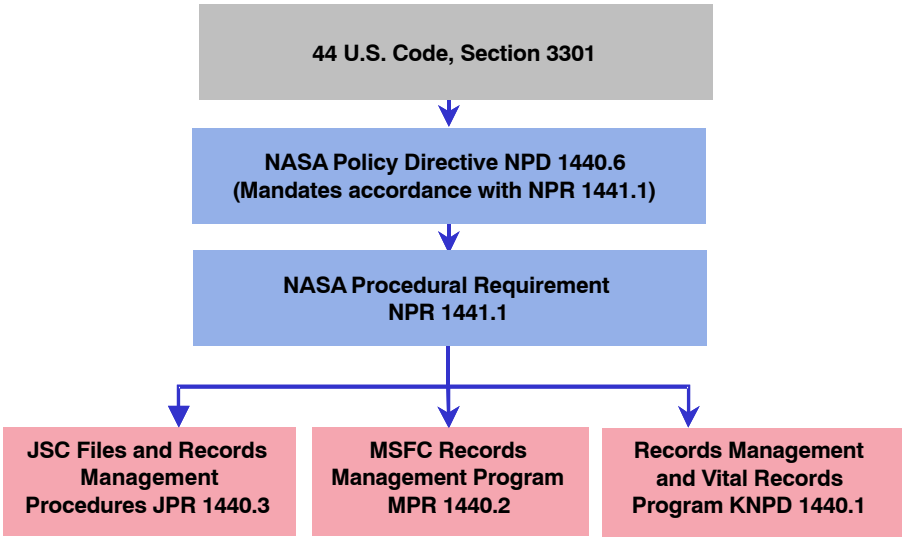
### 5.3.5 Records Management

The statutory definition of records is contained in 44 USC 3301, and reads:

> As used in this chapter, "records" includes all books, papers, maps, photographs, machine readable materials, or other documentary materials, regardless of physical form or characteristics, made or received by an Agency of the United States Government under Federal law or in connection with the transaction of public business and preserved or appropriate for preservation by that Agency or its legitimate successor as evidence of the organization, functions, policies, decisions, procedures, operations, or other activities of the Government or because of the informational value of data in them. Library and museum material made or acquired and preserved solely for reference or exhibition purposes, extra copies of documents preserved only for convenience of reference, and stocks of publications and of processed documents are not included.

**FIGURE 5-13**

**RECORDS MANAGEMENT GOVERNING REGULATIONS**




*This figure shows the flow down of regulations that govern records management. JSC uses JPR 1440.3, MSFC uses MPR 1440.2, and KSC uses KNPD 1440.1.*

#### 5.3.5.1 Objectives

The records management function in support of T&R is to assure that all SSP records are dispositioned in accordance with applicable regulations in a timely, accurate and cost efficient manner.

#### 5.3.5.2 People/Working Group

The Space Shuttle Management and Integration Planning Office leads the Records Management Working Group (RMWG), and membership in this group includes Records Managers (RMs) from NASA and contractors.

#### 5.3.5.3 Processes and Tools

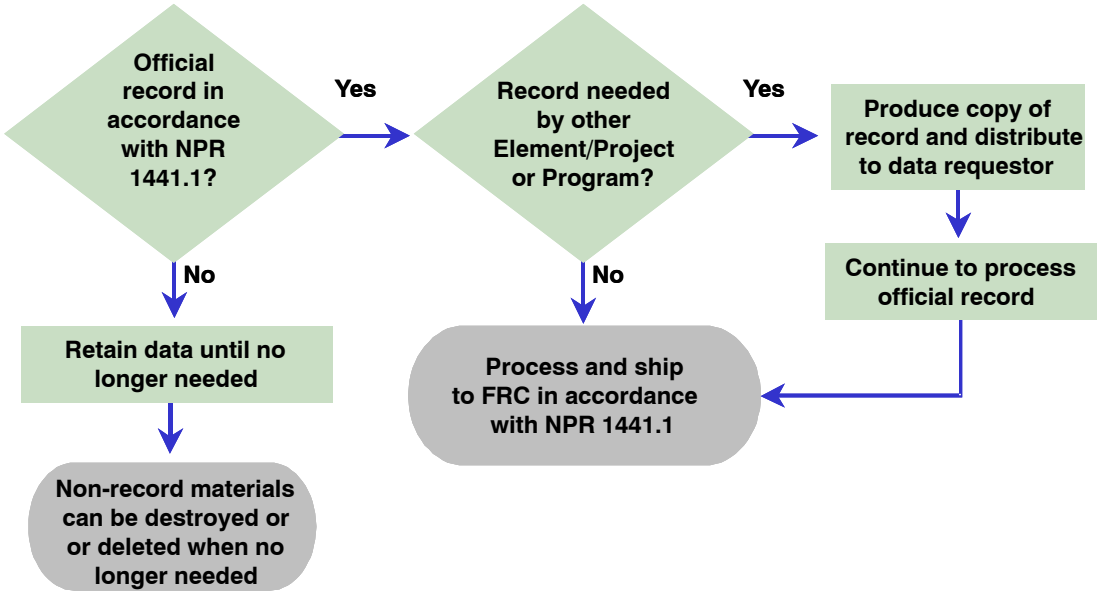
Good records management requires that as soon as records are no longer needed for operational use, archival needs must be recognized. NPD 1440.6, NASA Records Management, requires that the NASA installation records management program must be followed to ensure that records are appraised, transferred, and disposed efficiently and economically.

NPR 1441.1 provides specific direction for both the categorization and retention of records required to preserve the history of government programs. SSP T&R conforms to the existing policy mandates, but also considers ensuring data availability through completion of all SSP activities, and ensuring data availability for other programs, as required. Records disposition is performed using the existing records management process.

The existing records management process is a robust activity that in the normal course of business and on a continuing basis retires records to the Federal Records Center (FRC). Some contractors also retire government records to the FRC using the same process. Reference Figure 5-14 for the records disposition process. Appendix H includes a detailed flow of the steps to determine what is an official records and then the ensuing archival process.

## FIGURE 5-14

## RECORDS DISPOSITION PROCESS




*Once the determination is made that the data is an official record, copies are made for other element/project or Program, if required, and the record is processed for archiving.*

### 5.3.5.4 Interfaces

The RMWG works in conjunction with the NASA TPRCB and the three center-level Transition Integration Leadership Teams to assure all SSP records are dispositioned in a timely, accurate and most cost efficient manner.

The elements/projects interface with the Space Shuttle Management and Integration Planning Office to ensure that their records are reviewed by the SSP prior to archiving to determine whether other SSP elements/projects require access to this data for operational purposes. If another project/element requires the data, arrangements will be made for copies of such records to be provided to the requesting project/element.

The SSP, through each center, interfaces with NASA HQ and other NASA programs to ensure that retiring records are made available for other programs. When requests for copies of such records are received, each center makes arrangements with the requesting organization for production of the requested copies.

### 5.3.5.5 Products and Metrics

The RMWG provides:

a. Communications to other RMs involved in SSP T&R activities

b. Records management guidelines and groundrules specific to T&R issues

c. Resolution of issues common to multiple elements/projects

d. Strategies for effective and efficient transfer of records to appropriate storage and/or other programs

Metrics tracking and reporting includes the number of boxes sent to the FRC. The metrics data are obtained from the center RMs. (Reference Appendix E for further metrics details.)

### 5.3.6 Communication Management

The successful completion of mission execution rests primarily on performance of SSP civil servants and contractor personnel. The challenge of T&R management is to maintain morale and limit attrition in a "going out of business" environment. As was noted in best practices research, keeping personnel up to date about the status of their work, their compensation, and their follow-on employment opportunities is an essential element of successful base and program closures. Therefore, the agency has documented a requirement for a SSP T&R communications strategy in the following sources:

a. TCB-001, Human Space Flight Transition Plan

b. Program Commitment Agreement

c. NSTS 07700, Volume XX

d. Top Program Risk (Risk No. 2505 - Loss of Critical Personnel)

#### 5.3.6.1 Objectives

The primary objective of the SSP T&R communications effort is to inform the SSP workforce about the activities, intentions, and goals related to successful retirement of the SSP and transition to CxP. In effect, the effort consists of:

a. Communicating "down and in" to the SSP workforce within the context of SOMD/agency communications strategy

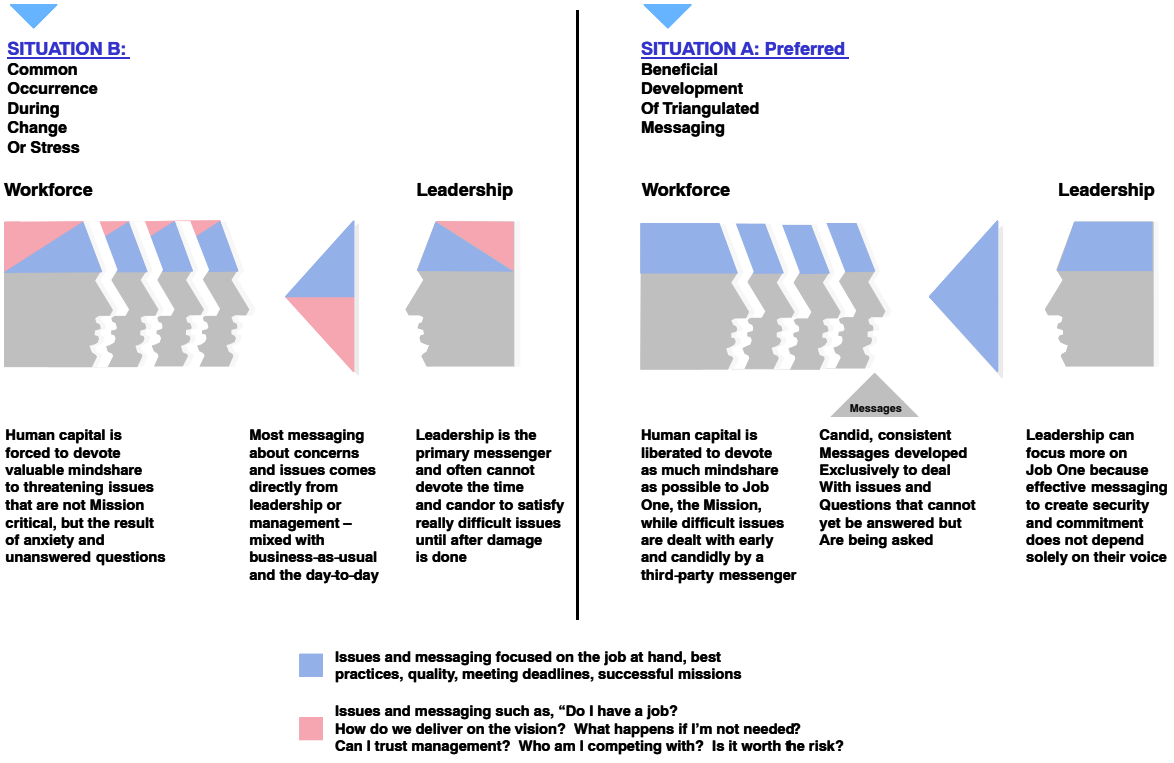
b. Facilitating communication within SSP T&R community

c. Providing content and support as needed to other NASA entities and stakeholders

The benefit of addressing SSP T&R through strategic communications is outlined in Figure 5-15 below. By developing an "umbrella" strategy that can be used across the entire program and various levels of agency leadership, we ensure a unified voice, cohesion in messaging, and NASA-wide alignment. As a result, the NASA workforce experiences less confusion and frustration due to the changing environment.

## FIGURE 5-15

## STRATEGIC COMMUNICATIONS




*Strategic communications across various levels of leadership ensures a unified voice, cohesion in messaging, and NASA-wide alignment.*

### 5.3.6.2 People/Working Group

Management of SSP T&R Communications is delegated to the SSP SPO. The Communications Team derives its authority from the SSP Program Manager (reference Memo MD-06-001, dated January 23, 2006). Development of the communications strategy and products are the responsibility of the SSP Transition Communications Lead. The SSP Transition Communications Lead has established a working group to formulate and generate these communications products. This working group consists of the SSP Transition Communications Lead, the HCM, Center Transition Leads or their delegates, and Program Integration Support.

From time to time, the SSP Transition Communications Working Group may require assistance from the SSP Transition Manager, SSP Transition Integration Manager, Assistant for Transition Integration, Element/Project Transition Managers, or Horizontal Function Leads.

A major component of the SSP T&R communications effort is to provide SSP or other agency leadership with the T&R content that needs to be communicated. Thus, the following groups/individuals are recipients of SSP T&R communications products:

a. SOMD/ESMD Associate Administrators

b. SSP Program Manager

c. SSP Deputy Managers

d. Element/Project Managers

e. SOMD/ESMD Transition Managers

f. SSP Transition Manager

g. SSP Transition Integration Manager

h. Assistant for Transition Integration

i. Center Transition Leads

j. Element/Project Transition Managers

k. SSP Transition Horizontal Function Leads

#### 5.3.6.3 Processes and Tools

The high-level process used by the communications team to identify and develop content for communication can be described as follows:

a. Input - The team gathers input from various sources throughout the agency. These sources include, but are not limited to: transition boards, workforce focus groups, policy statements, customer feedback, center leads, and other transition horizontal function leads.

b. Integration - The team consolidates input gathered from all sources and subjects the information to analysis designed to answer: is the information complete and relevant; is there a specific community or target audience identified; what tools are most appropriate to convey the content; etc. Additional research is done to complete or expand on the input, as needed. Input is then formatted to become the specified product.

c. Distribution - The team distributes the product to the intended community through the singular or combined use of tools including web sites, briefings, brochures, video presentations, publications, and management all-hands. Existing agency or program communications tools are used to maximum extent possible.

#### 5.3.6.4 Interfaces

In order to achieve a successful strategic communications plan, a coordinated effort between all levels of NASA management is necessary to provide timely, frank, and complete information to the primary audiences, which include civil service and contractor employees, suppliers and vendors, executive and legislative branches of government, local communities, special interest groups, and the public. Active communication is vital for limiting program risk throughout T&R.

#### 5.3.6.5 Products and Metrics

SSP Transition communications products can be logically divided into two major areas.

a. Preplanned - Those products maintained on a consistent schedule, and examples are:

    1. Quarterly online “magazine” -- Rendezvous

    2. SSP news articles

    3. Monthly activity report

    4. Issue report for TQPMR

    5. Regular website posting and maintenance

b. Event-driven - Those products that are developed specifically due to a transition related activity or development which is not regularly scheduled, such as:

    1. Talking points or charts for managers’ all-hands meetings (distribution - center leads, SSP Program Manager, SSP Transition Manager, CxP, HQ)

    2. Policy updates (Human Space Flight Transition Plan, Human Capital Transition Plan, legislation)

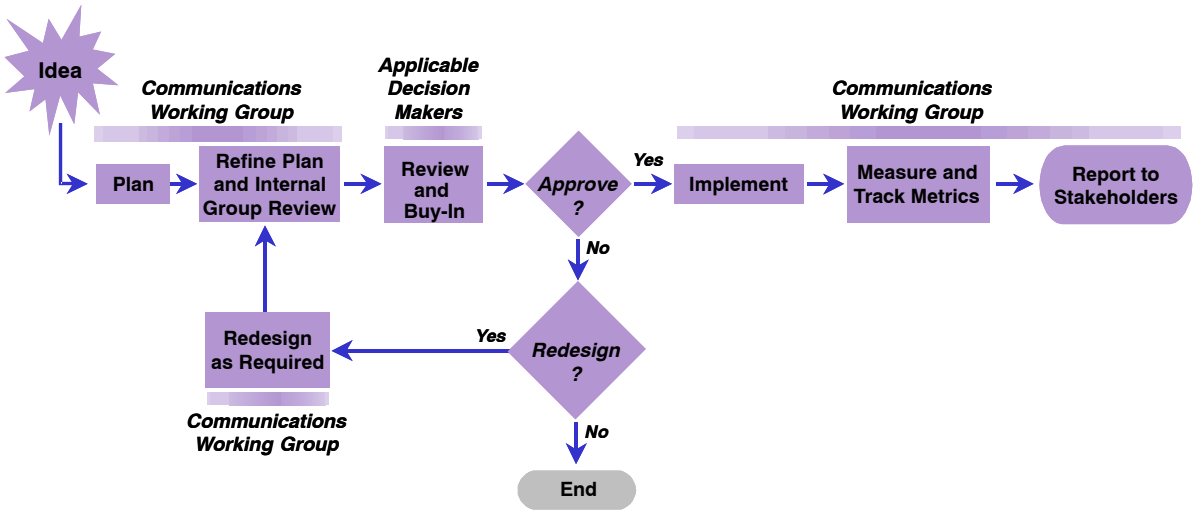
    3. SCA scheduled events (vendor shutdown, Pad B)

    4. SSP contributions to partnering events (human capital, Public Affairs Office [PAO], HQ)

Through the capture of metrics and trending data, communications products are under continuous assessment for effectiveness. Metrics and trending data includes analysis from the annual human capital survey given to the SSP workforce, web-based feedback forms, workforce focus groups, website usage statistics, and trends from monthly Management Issue Reports. The SSP T&R communications strategy is designed to maintain the flexibility required to incorporate lessons learned from metrics and trending analysis. (Reference Appendix E for further metrics details.) The end-to-end assessment process per product is outlined in Figure 5-16.

## FIGURE 5-16

## COMMUNICATION PROCESS FLOW




*As communications ideas/products are conceptualized, a process flow guides the concept from conceptualization to implementation.*

### 5.3.7 Risk Management

#### 5.3.7.1 Objective

The risk management objective is to ensure compliance with the SSP risk management process and tailor that process as needed for the T&R risks. This activity includes the T&R risks and those mission execution risks that result from the T&R activities. NSTS 07700, Volume XIX, Program Risk Management Plan, Section 6.0, details the process as tailored for T&R (reference Paragraph 5.2.7.3).

#### 5.3.7.2 People/Working Group

A Transition Risk Lead is assigned the responsibility of ensuring that the transition risk management process is defined and implemented. The Transition Risk Lead works within the existing risk management structure for review.

#### 5.3.7.3 Processes and Tools

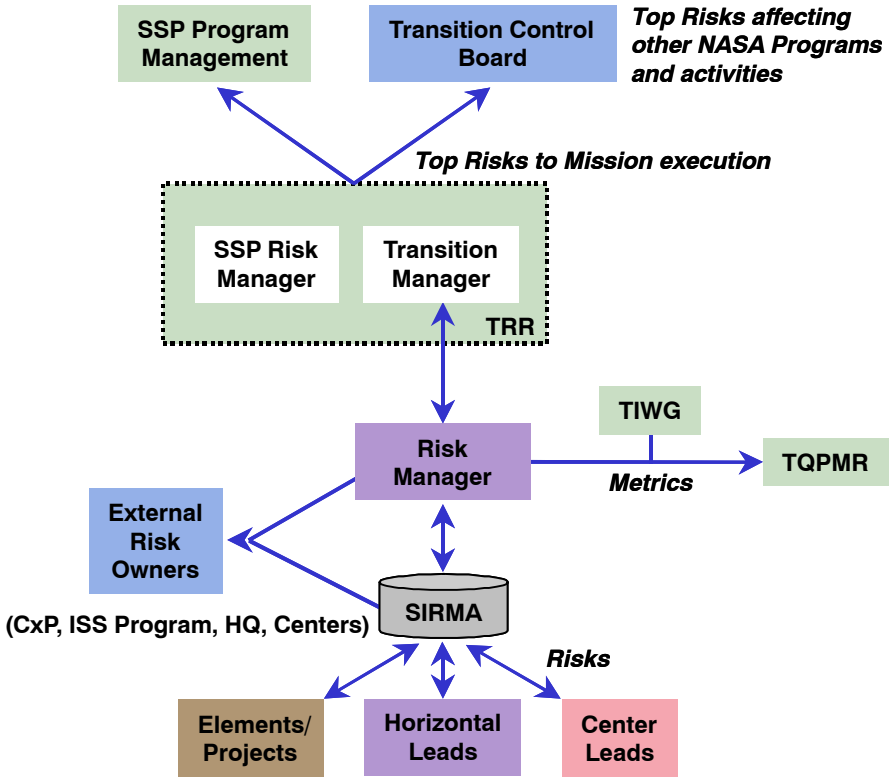
All members of the program are responsible for identifying and capturing risks. The existing Shuttle Program risk management process, including the Shuttle Integrated Risk Management Application (SIRMA) tool, is used for T&R risk management. T&R risks are delineated in SIRMA by assigning a transition flag to the risk. T&R risk reviews are conducted at Center Lead forums to support the current Program risk review process and the TPRCB. T&R risk status and metrics are also presented at the TQPMR. Tailoring of the risk scorecard is permitted if required to align with T&R risk criteria.

#### 5.3.7.4 Interfaces

Risk Management interfaces with all levels of T&R and external risk owners. Risk management interfaces with the Transition Manager and the SSP Risk Manager by reporting risks. Risk management interfaces with the elements/projects, horizontal leads, and center leads through the SIRMA tool to track and mitigate risks. Risk management interfaces with TIWG and TQPMR for metrics reporting.

## FIGURE 5-17

## RISK MANAGEMENT INTERFACES




*Risk Management is the responsibility at all levels of the T&R.*

### 5.3.7.5 Products and Metrics

T&R risk metrics reporting is the responsibility of the Transition Risk Lead and the TIWG. The element/project input and maintenance of their risks in SIRMA provides the basis for the T&R risk metrics. (Reference Appendix E for further metrics details.)

A Transition Program Risk Map is developed that shows the correlation of T&R program level risks to element/project level risks including cost/schedule/technical indicators. Additionally, the map shows an analysis of T&R risks by center, element/project and horizontal function.

Risk mitigation performance status is measured by assessing:

a. Completion of SIRMA risk mitigation plan fields, including closure rationale

b. Schedule completion/variance actuals for mitigation plan tasks and milestones

c. Overall staleness for entering updated information about an open T&R risk

Cumulative T&R risk growth or decline is provided based on the number of SSP scorecard-based T&R red, yellow, and green risks from the baseline start date of T&R.

Risk disposition actuals and trends metrics are provided based on the status of:

a. New open risks from the previous quarter

b. New open concerns from the previous quarter

c. New open cost threats from the previous quarter

d. Closed-accepted risks

e. Closed-mitigated risks

f. Risks escalated to Top Directorate Risk (TDR) or TPR

g. Risk downgraded to concerns

h. Risks transferred to other programs (CxP or ISS Program)

i. Risks transferred to institutional (centers or agency)

## 5.4 ELEMENTS/PROJECTS

### 5.4.1 Objectives

The highest priority of SSP elements/project is successful mission execution. Simultaneously, they are responsible for T&R planning and implementation. The overall management strategy of T&R places leadership responsibility for the tactical and execution phases with the elements/projects. Strategic direction and oversight remains with the Program. The overall objective is to achieve the SSP T&R goals and objectives consistent with the requirements identified in the NSTS 07700, Volume XX and this management plan. As discussed in Section 5.0, the elements/projects must maintain an acceptable level of risk for mission execution while implementing T&R requirements.

### 5.4.2 People/Working Group

SSP program and elements/projects are responsible for implementing the project-level requirements. Each element/project identifies a transition lead. The element/project transition lead is responsible for overall planning and managing their T&R activities including coordination and integration across the team and the SSP T&R community. They also support the TIWG and TPRCB on an as-needed basis. The elements/projects provide information on the status of activities, issues, or other T&R topics to the TIWG or the TPRCB through the Center Transition Lead.

### 5.4.3 Processes and Tools

The elements/projects are also responsible for providing program metrics inputs to the TIWG. Each element/project and institution has the flexibility to develop and maintain additional metrics, as they deem necessary. SSP elements/projects control boards provide the first level review of disposition decisions for SSP capabilities that are within element/project authority. Element/Project control boards report decision results to the TIWG for the purpose of process performance metrics. The review and decision-making process are documented in the individual element/project TMPs.

The SSP elements/projects implement the majority of property disposal in close coordination with their respective centers using the existing property disposal processes. The SCA provides the initial review and LND determination of SSP assets. Each element/project defines the top-level capabilities in the SCA and is responsible for providing and maintaining the applicable SCA data. The elements/projects develop and maintain tactical plans that define the detailed steps required to achieve the LND milestones.

The element/project specific processes and tools will be documented in the element/project transition implementation plans.

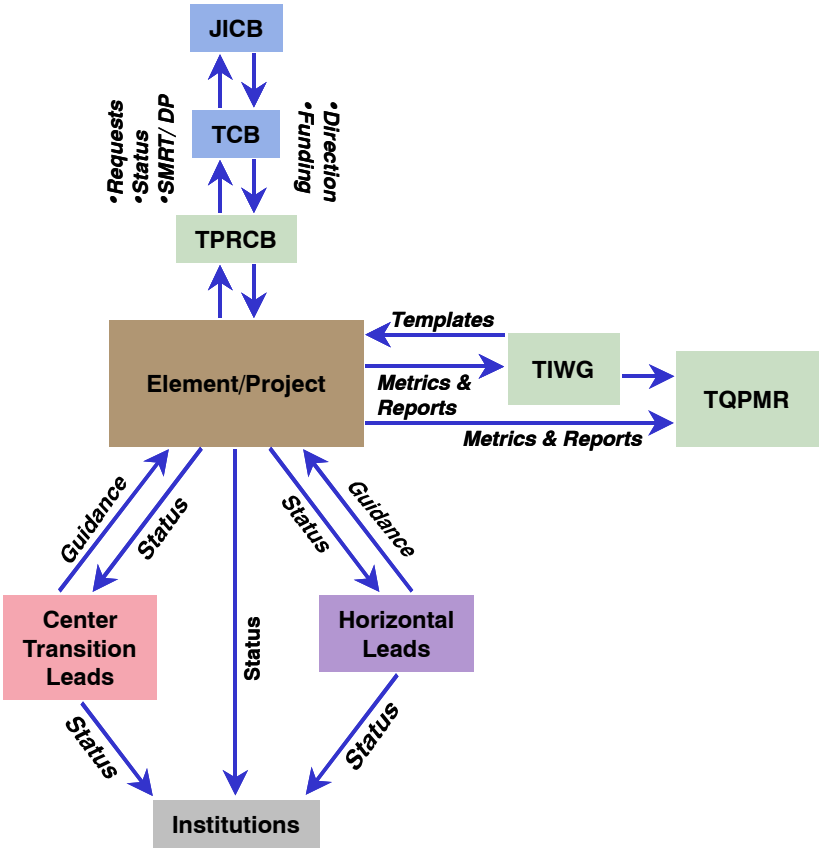
The elements/projects have the flexibility to create transition-unique boards or to integrate the transition review and decision-making into existing boards. Issues that cannot be resolved at the element/project level are addressed at the TPRCB.

### 5.4.4 Interfaces

The SSP program and elements/projects are represented at the TPRCB. The SSP elements/projects observe the products and guidelines developed in T&R plans in order to enable transition processes and reduce total SSP program costs.

## FIGURE 5-18

## ELEMENT/PROJECT INTERFACES




### 5.4.5 Metrics

The elements/projects transition managers report actual costs against baselined operating plan for current fiscal year. They provide an explanation for any variance to plan. The elements/projects provide analysis and measurements of actual deviations from baselined Transition Project Element tactical schedules for specific major SCA Key Decision Date (KDD), LND, and RD-related tasks and milestones. (Reference Appendix E for further metrics details.)

### 5.4.6 Products

The elements/projects are responsible for producing the following detailed planning products, including:

a. SCA

b. T&R project plan

c. T&R tactical schedule

d. T&R metrics inputs

e. TQPMR presentation

f. Related tasks and milestones

Upon approval to implement disposition, the actual release of capabilities can be performed.

## 6.0 POST-2010 SSP TRANSITION ORGANIZATION

Following completion of SSP mission execution objectives, the SSP organization structure will change to align with the remaining T&R requirements and tasks. At this point in time, the mission execution requirements for SSP are no longer considered in the decision making process which affords the opportunity to implement organizational and process efficiencies. The development of the post-2010 organization is in work and will be incorporated into a revision of this document once NASA management at the centers and HQ accepts the reorganization plans.

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# APPENDIX A

# ACRONYMS AND ABBREVIATIONS

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## APPENDIX A

## ACRONYMS AND ABBREVIATIONS

| | |
|---|---|
| AA | Associate Administrator |
| CCB | Configuration Control Board |
| CFR | Code of Federal Regulations |
| CM | Configuration Management |
| CR | Change Request |
| CxP | Constellation Program |
| DCMA | Defense Contract Management Agency |
| DP | Decision Package |
| ED | Engineering Directorate |
| ESMD | Exploration Systems Mission Directorate |
| EST | Environmental Support Team |
| ET | External Tank |
| EVA | Extravehicular Activity |
| FAR | Federal Acquisition Regulations |
| FCE | Flight Crew Equipment |
| FCOD | Flight Crew Operations Directorate |
| FO&I | Flight Operations and Integration |
| FRC | Federal Records Center |
| GFY | Government Fiscal Year |
| GSA | General Services Administration |
| HCM | Human Capital Manager |
| HCWG | Human Capital Working Group |
| HPO | Historic Preservation Officers |
| HPWG | Historic Preservation Working Group |
| HQ | Headquarters |
| IPO | Industrial Property Officer |
| ISS | International Space Station |
| ITAR | International Traffic in Arms Regulations |
| JICB | Joint Integration Control Board |
| JPRCB | Joint Programs Requirements Control Board |
| JTIP | JSC Transition Integration Panel |

| | |
|---|---|
| KDD | Key Decision Date |
| L&L | Launch and Landing |
| LND | Last Need Date |
| MI&P | Management Integration and Planning |
| MOD | Mission Operations Directorate |
| MTWG | MSFC Transition Working Group |
| NEPA | National Environmental Policy Act |
| NPDMS | NASA Property Disposal Management System |
| OHCM | Office of Human Capital Management |
| OPO | Orbiter Project Office |
| OSB | Outside the Board |
| PAO | Public Affairs Office |
| PCARSS | Plant Clearance Automated Reutilization Screening System |
| PDO | Property Disposal Officer |
| PPBE | Planning, Programming, Budgeting, and Execution |
| PPT | Personal Property Team |
| PRCB | Program Requirements Control Board |
| PRCBD | Program Requirements Control Board Directive |
| PSE&I | Propulsion Systems Engineering and Integration |
| RD | Release Date |
| RM | Records Manager |
| RMWG | Records Management Working Group |
| RPO | Real Property Officer |
| RSRM | Reusable Solid Rocket Motor |
| S&MA | Safety and Mission Assurance |
| SCA | Strategic Capabilities Assessment |
| SCADB | Strategic Capabilities Assessment Database |
| SE&I | Systems Engineering and Integration |
| SIRMA | Shuttle Integrated Risk Management Application |
| SLS | Space Life Sciences |
| SMRT | Shuttle Management Resource Transition |
| SOMD | Space Operations Mission Directorate |

| | |
|---|---|
| SPO | Strategic Planning Office |
| SRB | Solid Rocket Booster |
| SSBO | Space Shuttle Business Office |
| SSC | Stennis Space Center |
| SSME | Space Shuttle Main Engine |
| SSP | Space Shuttle Program |
| T&R | Transition and Retirement |
| TBD | To Be Determined |
| TCB | Transition Control Board |
| TDR | Top Directorate Risk |
| TIS | Transition Integration Schedule |
| TIWG | Transition Integration Working Group |
| TMP | Transition Management Plan |
| TMS | Transition Master Schedule |
| TPA | Transition Property Assessment |
| TPR | Top Program Risk |
| TPRCB | Transition Program Requirements Control Board |
| TQPMR | Transition Quarterly Program Manager's Review |
| TSS | Transition Strategic Schedule |
| USC | United States Code |
| VSE | Vision for Space Exploration |

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# APPENDIX B

# DOCUMENT TREE

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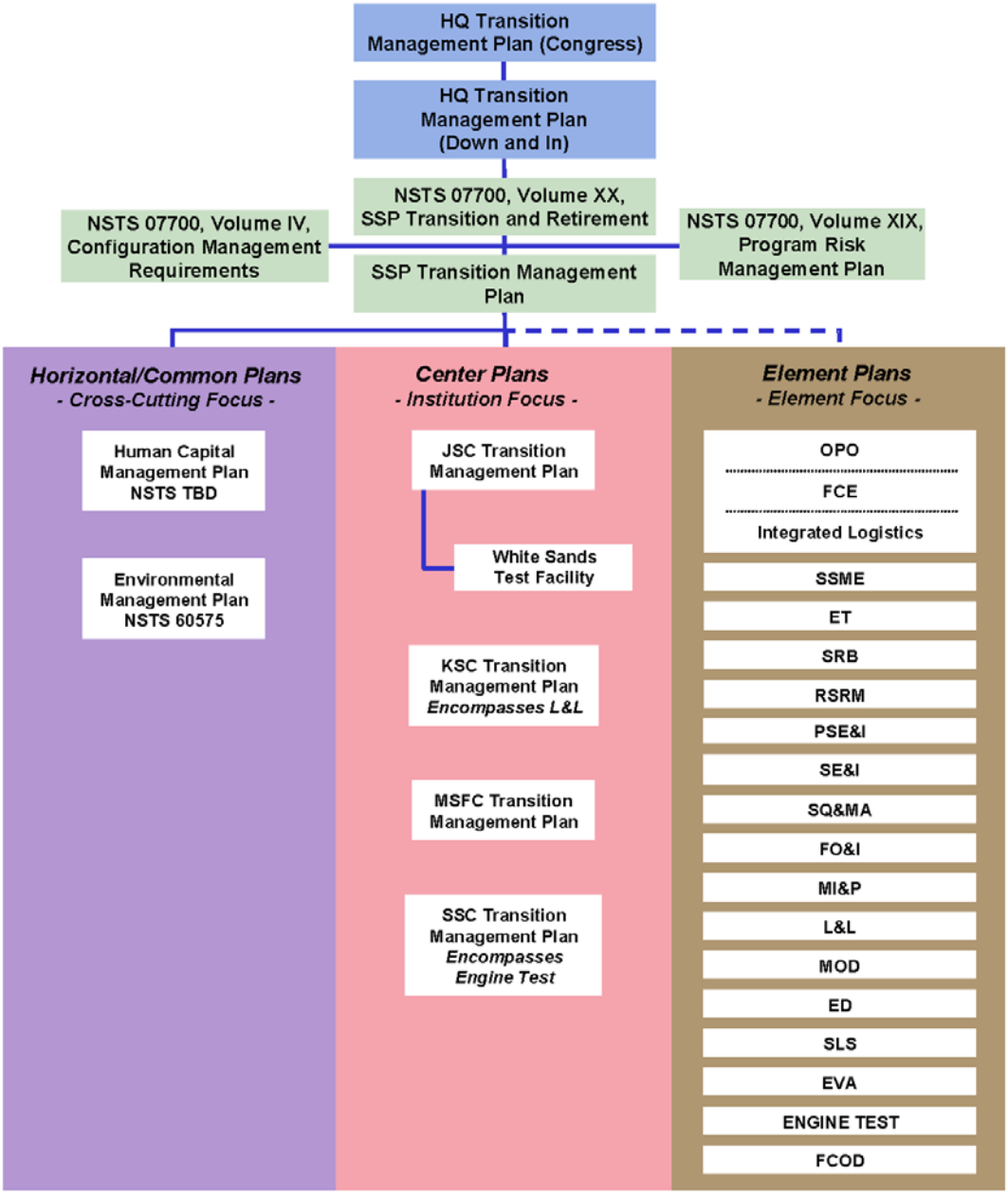
## APPENDIX B

## DOCUMENT TREE

The TMP and additional transition documents are supporting documents of the NSTS 07700, Volume XX.

### FIGURE B-1

### DOCUMENT TREE



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# APPENDIX C

# GLOSSARY OF DEFINITIONS

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## APPENDIX C

## GLOSSARY OF DEFINITIONS

Agency - National Aeronautics and Space Administration.

Asset - Property (real or personal) and human capital with positive value.

Attrition - A reduction in personnel as a result of resignations, separations, and retirement. Attrition can also be applied in logistics to part supply inventories and can result from part failures and end-of-life certification losses.

Capability (vs. asset) - In the context of SSP transition, a capability is the combination of human capital, tangible assets, and intangible assets that, when combined, provide the potential to produce information, goods, or services.

Career Development - The professional development of employee potential by integrating the capabilities, needs, interests, and aptitudes of employees participating in a career program through a planned and systematic method of growth designed to meet organizational objectives. It is accomplished through the combination of work assignments, job rotations, training, education, and self-development programs.

Career Levels - Groupings of education, training, and experience standards that provide the framework for progression within a career field.

Center (host center) - NASA field installation that holds responsibility for SSP property or personnel during their disposition (either transfer or close-out/disposal).

Certification - A process through which it is determined that an individual meets all of the education, training, and experience standards established for individual career field or position.

Close-out - The actions necessary to finalize performance under a contract whether due to contract completion, cancellation, or termination.

Cost - The financial resources already expended for a given entity (e.g., task, hardware).

Cost Estimate - A predictive assessment of the resources (funds, full-time equivalents) that will be required to accomplish a task(s), project, or purchase request.

Critical Skill - Any ability that is used effectively, competently, and readily in safe execution or performance of the SSP that could pose risk if dispositioned. Such risks include: cost risk-the cost to reinstate a dispositioned asset (includes procurement, installation,

training, etc.), and schedule risk-the schedule delay due to procurement of a dispositioned asset.

Disposal - Orderly elimination of assets according to the established government excess property process (e.g., scrap, sell, or donate).

Elements/Projects - Refers to SSP elements/projects which are established under separate project offices (e.g., Orbiter, SSME, ET, RSRM, SRB, Launch Services).

Environmental Assessment - A study, required by the NEPA, of the change to the natural, physical, and social surroundings caused by a Federal action. The environmental assessment will result in 1) a Finding of No Significant Impact if there are no significant changes or 2) an Environmental Impact Statement if there are significant impacts.

Excess/Residual - An amount beyond what is required or sufficient; the amount remaining at the end of a process.

Human Capital - People and their capabilities, expertise, skills, knowledge, education, training, experience, health, and motivation that form their ability to be economically productive and to provide customer solutions.

Human Capital Manager - The manager who provides support to the SSP Program Manager and the element/project managers and coordinates efforts with NASA human resource organizations and tools. The HCM monitors human capital metrics to ensure balance between the human capital structure, and future demand for skills and experience.

Incentive - Reward for accomplishing a defined task. During SSP mission execution, retention bonuses may be used as incentives to minimize attrition.

Institutional/Non-Institutional - Part of a defined organization/not part of a defined organization.

Inventory - Quantity of goods, materials, skills, etc., on hand.

Last Need Date - The last time a specific item, process, tooling, etc. is required to complete a required task.

Mission Execution - The ground and flight activities that are required to safely fly the Space Shuttle through the last flight. This includes additional programmatic activities to cope with risk inherent in program termination, such as incentive programs, employment transition support, heightened communication, and increased quality assurance surveillance. Mission execution also includes a strategic assessment process to determine, in detail, when SSP capabilities are no longer needed to fulfill mission requirements.

Mothball - To deactivate from use or service and keep in reserve by putting preservative technical measures in place to maintain the asset's health and future availability.

NASA SSP Transition Manager - NASA HQ, agency-level manager responsible for SSP transition across the entire agency.

Personal Property - Property that is not real property.

Real Property - Land; rights for the land, ground improvements, utility distribution systems, buildings, and other structures. Real property does not include foundations and other work necessary for installing special tooling, special test equipment, or plant equipment.

Retirement - A form of transition, but for which there is no reuse within NASA. Retired capabilities will be either preserved due to historical significance, donated, sold, or scrapped/demolished. This includes the termination process for contracts, subcontracts, or other supply mechanisms and the disposition of SSP assets (real and personal property and human capital).

Risk - The combination of 1) the probability (qualitative or quantitative) that a program or project will experience an undesired event such as a cost overrun, schedule slippage, safety mishap, compromise of security, or failure to achieve a needed technological breakthrough; and 2) the consequences, impact or severity of the undesired event were it to occur.

Safe/Safing - A process that is implemented in which the primary purpose is to prevent an unintended functioning of an explosive charge or release of a hazardous substance.

Shared Asset - Any property of value funded by the SSP that also is co-habitated and/or funded by other NASA or government programs.

Strategic Capabilities Assessment - An SSP program-wide activity to review all SSP assets and human capital to determine their LND to safely support the SSP flight schedule.

Strategic Planning - Development of overall and long-term plans and actions that need to be accomplished to achieve the VSE goal of retiring the Space Shuttle.

Succession Planning - The process used by NASA to ensure that key organizational positions are filled with qualified internal candidates, in advance of actual need, and to assist in managing diversity and workforce planning.

Tactical Planning - Development of the specific and detailed processes, tasks and schedules to implement the strategic plans thereby achieving the VSE goal of retiring the Space Shuttle.

Transfer - The act of moving an SSP asset physically to a new location as part of its disposition. Its disposition can be disposal via the federal excess property process, delivery to a different program, or handover to a host center for storage/mothballing. Transfer can also be a static process of changing financial and operational responsibility from SSP to another organization without any physical movement.

Transition - The process of planning and implementing tasks required to transfer SSP capabilities, in whole or in part, to another program or the institution.

Transition Integration Working Group - A proposed working group to be charted within the SSP that will provide leadership and oversight of SSP phase-out activities, including facility transfer or close-out, property disposal, and environmental remediation.

Transition Management - Provides direction for priority activities to ensure effective management of elements/projects during the SSP transition; oversees and directs the transition processes, actions, and timetable. The Transition Management Team will ensure consistency with priority directions from SPO.

# APPENDIX D

# TPA AND PROPERTY DISPOSITION PROCESS

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# APPENDIX D

# TPA AND PROPERTY DISPOSITION PROCESS

## 1.0 TPA INTRODUCTION

TPA is an upfront, proactive process undertaken by the SSP elements/projects to categorize, assess, and review government personal property. This process prepares for the high volume of property that will be dispositioned at the end of the program. The SSP elements/projects must be flexible as the TPA data requirements may vary slightly depending on center requirements where the property is located.

## 2.0 TPA PHASING

The SSP TPA process in support of T&R will be initiated as early as possible, and in phases, for a variety of reasons:

a. Reduces the information gathering burden at the end of the program which will minimize errors and omissions

b. Provides a planning tool for budget and schedule optimization and execution for multiple organizations (program, elements/projects, centers, and Property Disposal Officers [PDOs])

c. Provides the foundation of program metrics development and reporting

d. Maximizes the use of current subject matter experts prior to last flight while minimizing workload impacts

## 3.0 TPA REQUIREMENTS

The process initially identifies the availability date and determines the potential for transfer of the property to another NASA program. The TPA requirements for property being transferred are less stringent than for property being disposed by some other method. If the property is not identified for transfer, additional information is collected and documented prior to releasing the property as excess. The TPA process utilizes a specific coding scheme when possible, ensuring consistency across the program regardless of the asset's location. These codes are identified in Tables D.1 and D.2. Existing property systems can be utilized to provide this information as well.

### 3.1 PHASE 1

The information required for property disposition/disposal is captured utilizing a two-phase approach. Phase 1 includes the data that is necessary for planning purposes

and is collected as soon as practical (reference Table D.1). Some of the information identified in Phase 1 may be undeterminable at the time of the initial assessment, and will then be completed during Phase 2 of the process.

## TABLE D.1

## PHASE 1 TPA DATA ELEMENTS

| Data Element | Code/Remarks |
|---|---|
| Property Description | Nomenclature, Part Number, etc. - per FAR 45, Government Property |
| Predisposition Code | **T**: Transfer (Identify the recipient)<br>**E**: Excess<br>**S**: Scrap<br>**B**: Bulk |
| Property Category | **AP**: Agency Peculiar - Government-owned personal property that is peculiar to the mission of one agency (e.g., military or space property); excludes material, special test equipment, special tooling, and facilities. (FAR 45)<br>**FL**: Flight Material (identified in records)<br>**GR**: Ground Material - Property that may be incorporated into or attached to a deliverable end item or that may be consumed or expended in performing a contract. It includes assemblies, components, parts, raw and processed materials, and small tools and supplies that may be consumed in normal use in performing a contract. (FAR 45)<br>**PE**: Plant Equipment - Personal property of a capital nature (including equipment, machine tools, test equipment, furniture, vehicles, and accessory and auxiliary items) for use in manufacturing supplies, in performing services, or for any administrative or general plant purpose. (FAR 45)<br>**ST**: Special Tooling - Jigs, dies, fixtures, molds, patterns, taps, gauges, other equipment and manufacturing aids, and all components of these items that are used in the development or production of particular supplies or parts or the performance of particular services. (FAR 45)<br>**TE**: Special Test Equipment - Single or multi-purpose integrated test units engineered, designed, fabricated, or modified to accomplish special purpose testing in performing a contract. (FAR 45)<br>**TM**: Test Material - Similar in definition of “material” as in Ground Material above. In this case, it is material consumed in preparing for and conducting program tests. (FAR 45)<br>**TR**: Training Material - Similar in definition of “material” as in Ground Material above. In this case, it is material used during ground based or underwater crew training. |

## TABLE D.1

## PHASE 1 TPA DATA ELEMENTS - Concluded

| Data Element | Code/Remarks |
|---|---|
| Item Status | **A**: Active - Active items include all current configuration or "Engineering Active" hardware and all equipment needed to support a capability required for Mission Execution.<br>**O**: Obsolete Items - Obsolete items include hardware that has documentation/board approval or that has been replaced by newer technology.<br>**N**: Not Implemented - Property that was never operationally used.<br>**R**: Released Capability - Property that is no longer needed to support mission execution.<br>**D**: Degraded - Tooling or equipment has degraded to a point that it is unusable. |
| Availability Date | Defines, at a minimum, the projected fiscal year the property is no longer required for SSP program use and can be released. |
| Disposition Constraints | **H**: Contains hazardous materials.<br>**M**: Contains precious metals.<br>Artifact designation:<br>- **W**: Identified as an artifact based on the artifact "wish list" criteria provided by NASA HQ.<br>- **C**: Identified as a potential artifact based on the artifact "wish list" criteria provided by the NASA center.<br>- **P**: Identified as a potential artifact based on element/project specific criteria utilizing in-house expertise and/or existing processes and procedures, if applicable. (Project specific criteria should be partnered with NASA HQ.)<br>**E:** Subject to export control regulations - SSP elements/projects will work with the Center Export Administrators to code property according to the export control regulations.<br>**O**: Oversized item that requires special handling to be removed, is too large to fit on a flat bed truck, or weighs over 15,000 pounds (per KSC handling constraints). |

### 3.2 PHASE 2

Phase 2 effort includes obtaining the remaining data and information that is based on criteria that will not change over time, but must be provided to the PDO as part of the disposition process (reference Table D.2). All TPA activities should be completed prior to the final flight in 2010. The SSP elements/projects are responsible for scheduling the TPA process tasks and activities to ensure that the data is collected in the most cost effective and expeditious manner possible, this includes completing both TPA phases in parallel if deemed appropriate.

## TABLE D.2

## PHASE 2 TPA DATA ELEMENTS

| Data Element | Code/Remarks |
|---|---|
| Identify all hazardous materials | Type based on the Federal Register Notice, May 7th, 2007 (Volume 72 Number 87) Pages 25723 - 25735 list of hazards. |
| Identify all recoverable precious metals by type: | **G**: Gold<br>**S**: Silver<br>**P**: Platinum group metals (platinum, palladium, rhodium, iridium, ruthenium and osmium)<br>**M**: Mixed or combination of precious metals |
| Historical artifact justification | Include usage history. |
| Final destination, if known | **1**: Constellation<br>**2**: ISS<br>**3**: Other NASA<br>**4**: School<br>**5**: Museum<br>**6**: Other Federal/State |

Due to the number of property line items, a bulk coding approach is recommended in order to efficiently record and track the TPA data. Bulk coding is possible when the property can be grouped such that the same TPA data can be assigned.

### 3.3 ADDITIONAL DATA ELEMENTS

Upon completion of the SSP element/project TPA process only a few additional data elements, which are required per FAR 45 as part of the normal property disposition processes, are necessary in order to initiate the property disposition process. Table D.3 details the additional data elements required.

## TABLE D.3

## ADDITIONAL DATA ELEMENTS

| Data Element | Code/Remarks |
|---|---|
| Property Location | Center or facility, building, room |
| Unit Acquisition Cost | |
| Year of Manufacture | Required for equipment only |
| Property Condition | Unused<br>Used/Serviceable<br>Repairs needed<br>Salvageable<br>Scrap |

## 4.0 TPA REPORTING

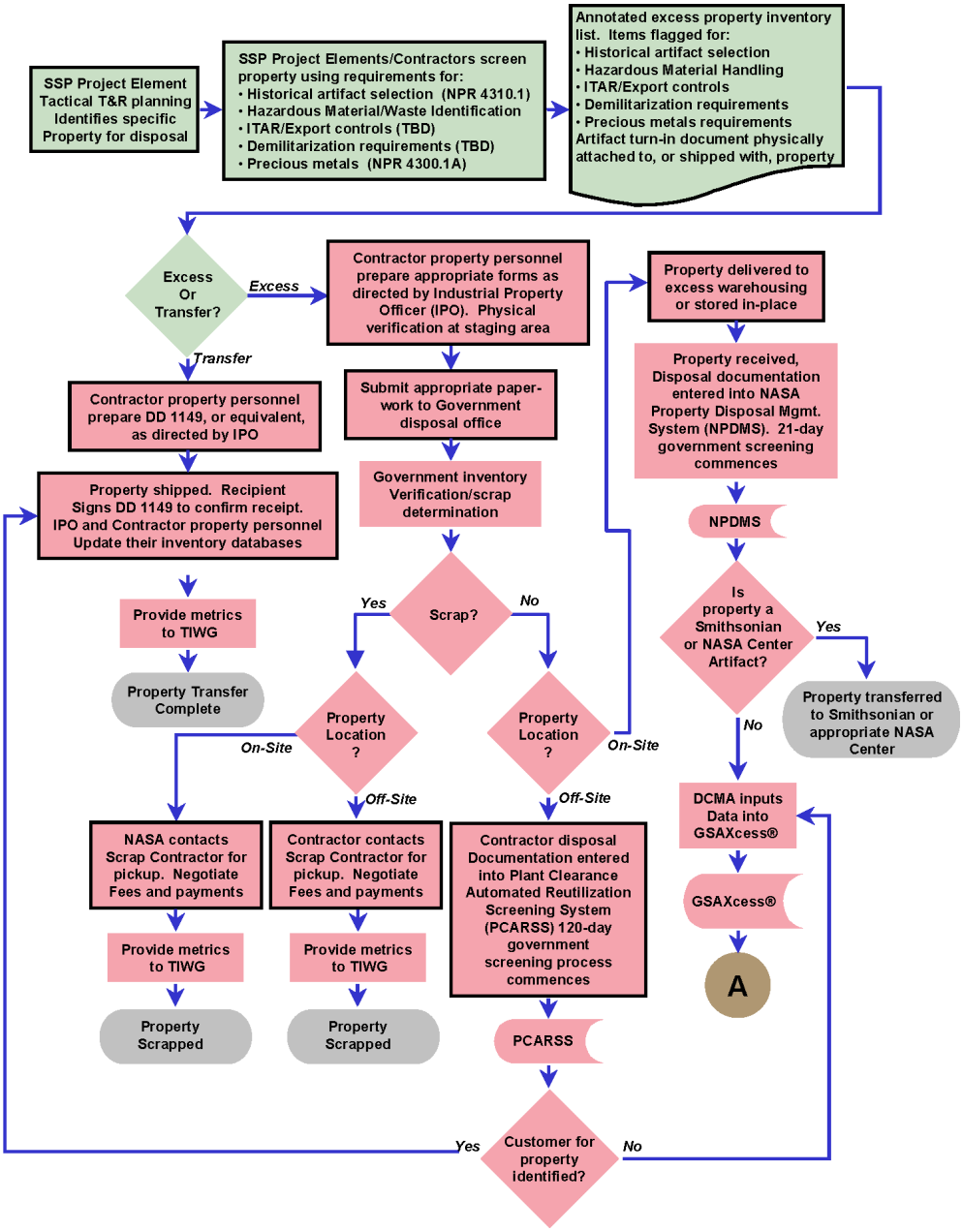
Elements/Projects coordinate with their center IPO or PDO to distribute results of the TPA and provide itemized listings of property. The data submitted and reports frequency is coordinated with each center's IPO or PDO. Interim listings may be required by the IPO/PDO representative, however; within 30 days of completion of TPA activities the results and itemized listings are submitted to the center's IPO and PDO.

The TPA process, though laborious, is essential to ensure the cost-effective, phased disposition of all assets when the property is in excess of program requirements.

The personal property enters the disposition process with a directive instructing the host center to implement disposition.

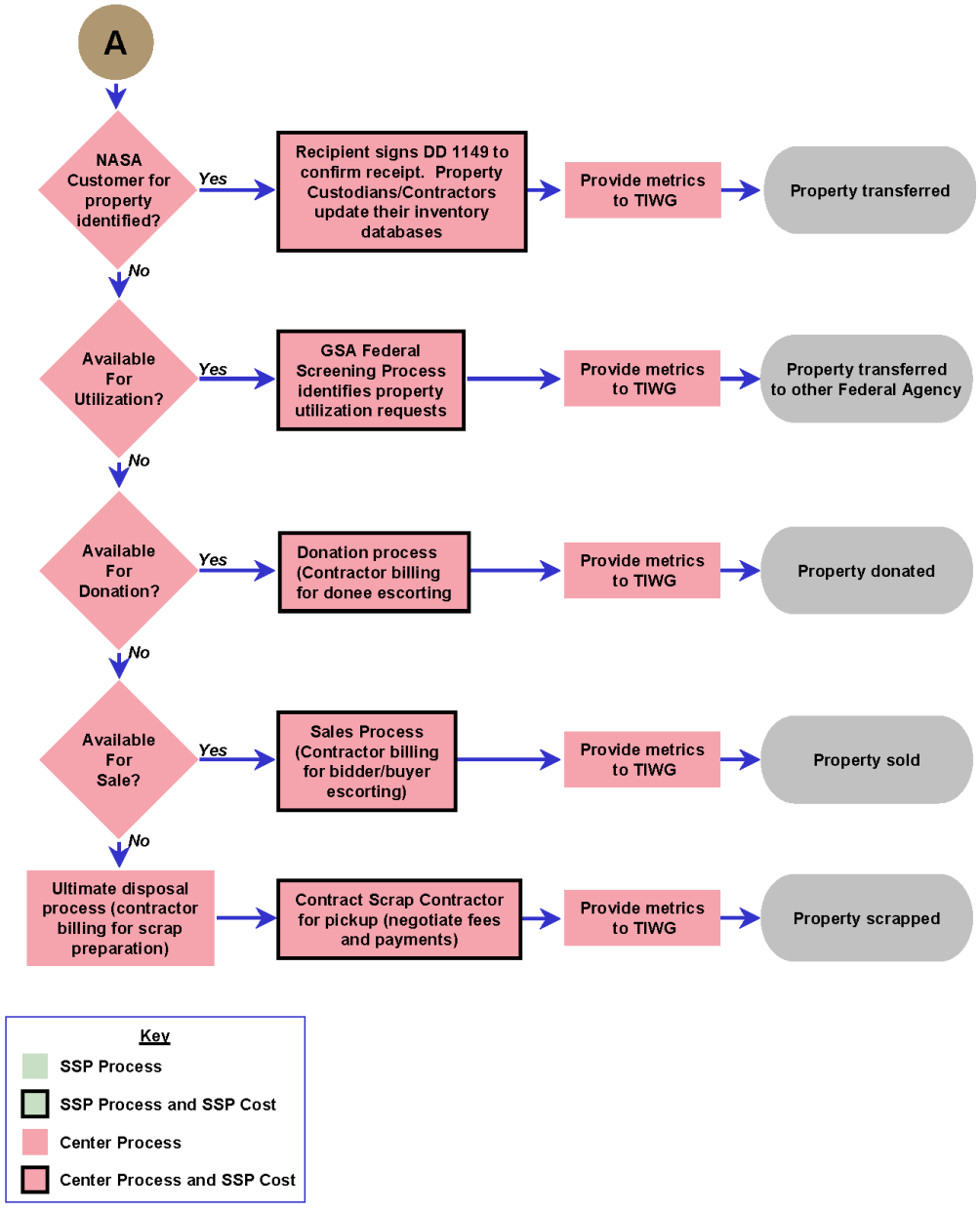
# FIGURE D-1

# PERSONAL PROPERTY DISPOSITION PROCESS



# FIGURE D-1

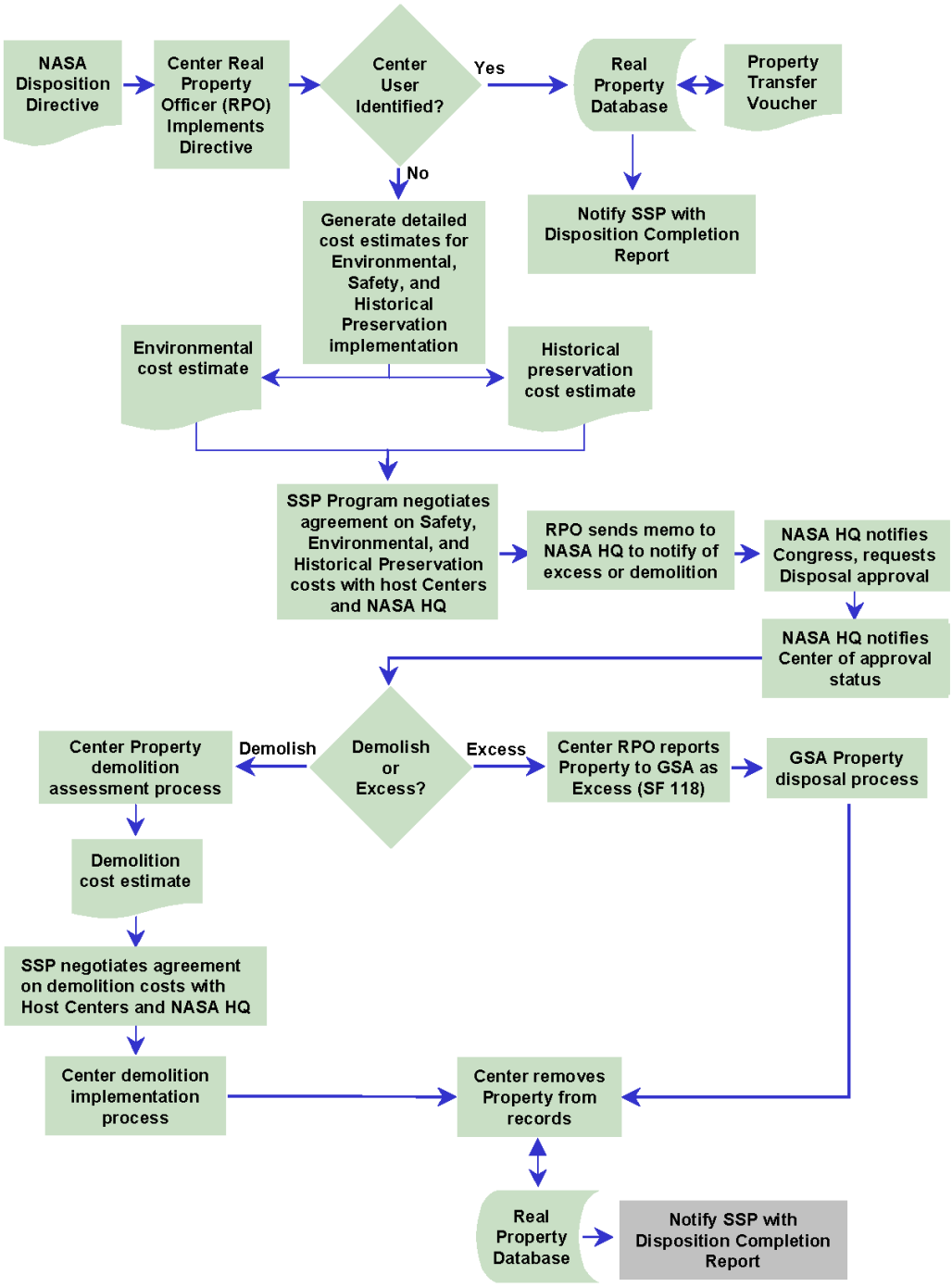
# PERSONAL PROPERTY DISPOSITION PROCESS - Concluded



The real property enters the disposition process with a directive instructing the host center to implement disposition.

## FIGURE D-2

## REAL PROPERTY DISPOSITION PROCESS



# APPENDIX E

# METRICS PLAN

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# FIGURE E-1

# T&R METRICS

**T&R Metrics**

| | T/t | Tier | Title | Description | Technical Lead | Reporting Frequency | Data Source | Data Tools |
|---|---|---|---|---|---|---|---|---|
| Cost | T | 1 | Cost Avoidance | Measure Agency efficiencies associated with SSP transition to CxP. Multiple measurements – may range from cost avoidance to SSP associated with capability closeouts to cost burden to SSP for covering gap (subsidize CxP or other programs) | Resource Manager | Quarterly | Analysis of capability dispositioning, board decisions, other data | Excel Spreadsheet; Vision |
| | t | 1 | Spend Plan Variances | Report actual costs against baselined operating plan for current fiscal year. Provide explanation for variance to plan | Element TMs | Quarterly | Analysis of monthly actuals reporting | Excel Spreadsheet; Vision |
| | t | 2 | Cost Trends | Graphic summary depiction of SSP budget performance with comparative data (actual costs compared to baseline program costs without T&R) | Resource Manager | Quarterly | Analysis of TQPMR reporting | Excel Spreadsheet; Vision |
| | t | 3 | Budget Status | Current funds available, liens and threats summary | Resource Manager | Quarterly | Core Financial | Excel Spreadsheet; Vision |
| Schedule | T | 1 | Level II TMS Variances | Histogram analysis/actuals of deviations from baseline TMS schedule for major milestones, including:<br>1. Strategic KDDs, LNDs, and RDs<br>2. Tactical TAP and other major Cross – cutting Functional area milestones<br>At the last quarter of the year – some trending can be presented to tie into Program health | TIWG | Quarterly | Analysis of schedule execution | MS Project Excel Spreadsheet; Vision |
| | t | 2 | TMS Completion Actuals | Completion of major milestones (TAP and SCA milestones), including histogram breakdowns of Level II Crosscutting Functions, Centers, and Project Elements. At the last quarter of the year – some trending can be presented to tie into Program Health | TIWG | Quarterly | Analysis of schedule execution | MS Project; Excel Spreadsheet; Vision |
| | t | 2 | Level III Transition Schedule Variances | Analysis/actuals of deviations from baselined Transition Project Element Tactical schedules for specific major SCA, KDD, LND, and RD-related tasks and major milestones | Element TMs | Quarterly | Analysis of schedule execution | Excel Spreadsheet; Vision |
| | t | 3 | Action and Decision Tracking | "Batting average" on action completions and open work | TIWG | Quarterly | Monthly review of list status | SharePoint action tracking metrics; Excel Spreadsheet |
| Technical | T | 1 | Transition Activities - cs | Shows number charging full time to SSP, ISS and CxP. Also shows number charging to multiple programs | Human Capital Lead | Quarterly | Business Warehouse | Excel and PowerPoint Charts |
| | t | 1 | Contractor Held Personal Property Divestment Actuals | Number of line items and their acquisition cost by category. Based on 1018 and 1149 reporting by prime contractors. Does not include property divested by Center institutions | Property Lead / TIWG | Quarterly | Quarterly reports from IPOs | SharePoint InfoPath tools; Excel Spreadsheet |
| | t | 1 | Personal Property 1-Year Divestment Plan | PPBE estimate of number of line items to to be divested in next fiscal year by element/ contract based on projected actuals from transition Project Element Plans, SCA data, and trending from previous quarters | Property Lead / Resource Manager | Annually | PPBE projections From Level III | Excel Spreadsheet; Vision |
| | T | 1 | Retention Performance: Civil Service | Planned versus actual FTE rates by Center for Civil Servants | Human Capital Lead | Quarterly | Business Warehouse | Excel and PowerPoint Charts |
| | T | 1 | Retention Performance: Contractor | Planned versus actual FTE rates by company | Human Capital Lead | Quarterly | Program and Contractor Data | Excel and PowerPoint Charts |
| | T | 1 | Attrition Rates: Contractor | Planned versus actual FTE rates by Company (may want to look at by location and skill | Human Capital Lead | Quarterly | Program and Contractor Data | Excel and PowerPoint Charts |
| | T | 1 | Attrition Rates: Contractor | Planned versus actual FTE rates by Company (may want to look at by location and skill | Human Capital Lead | Quarterly | Program and Contractor Data | Excel and PowerPoint Charts |

Legend: T/t: T = Agency Transition-related; t = SSP Transition-related
Tier: 1: Key Indicator; 2: Project Control Indicator/External Data; 3: Recordkeeping Data or Sub-Element of Other Metric

# FIGURE E-1

# T&R METRICS - Concluded

## T&R Metrics (continued)

| | T/t | Tier | Title | Description | Technical Lead | Reporting Frequency | Data Source | Data Tools |
|---|---|---|---|---|---|---|---|---|
| Technical (continued) | T | 2 | Communication Metrics | Effectiveness of communications planning and tools through survey/feedback analysis and website/SharePoint usage statistics. Tracking trends and 3-2-1/issues reports | Communication Lead | Quarterly | Automated software reports, report analysis | SharePoint usage stats; Excel Spreadsheet; Vision |
| | t | 2 | Quad-Chart Stoplights | Subjective Cost, Schedule, and Technical health indicator stoplight charts presented on Level II Quad-Chart Reports | All / TIWG | Quarterly | Self-assessments | PowerPoint Charts |
| | t | 2 | Quad-Chart Stoplight Trends | Consolidation and Categorization of subjective Cost, Schedule, Technical health indicator stoplights from individual Level II and Level III Quad Chart Reports | All / TIWG | Quarterly | Roll-up of Quad charts | Excel Spreadsheet; Vision |
| | t | 3 | Historical Preservation Actuals | List of real or personal property preservations | Property Lead | Quarterly | PAO Reports (To Be Determined [TBD]) | Excel Spreadsheet; Vision |
| | t | 3 | SMRT Document Actuals | Histogram analysis/actuals of number of SMRT documents processed, projection of future numbers (including probable TPRCB presentation schedule mapping). List of SMRTs and their associated Elements and Centers | TIWG | Quarterly | Review of Board Activities, Level III reporting | Excel Spreadsheet; Vision |
| | t | 3 | Recurring Supplier Base Status | Number of recurring suppliers in place (plan vs. actual total and by Project Element - aligned to SCA capability dates) | Sustainment and Transition Office | Quarterly | TBD | Excel Spreadsheet; Vision |
| | t | 3 | Environmental Metrics | 1. Environmental Risk Identification, SMRT Document and/or Level II and Level III Risk Identification<br>2. Environmental Risk Mitigation percent complete, SMRT document and/or Level II and Level III Risk Mitigation progress<br>3. Environmental Risk Closeout Document, SMRT document issue complete and/or Level II and Level III Risk Mitigation complete | Environmental Lead | Quarterly | Review of board activities, Level II, and Level II reporting | Excel Spreadsheet; PowerPoint Charts |
| | t | 3 | Records Processing Actuals | Number of boxes of records archived | Records Management Lead | Quarterly | Center RMs | Excel Spreadsheet; Vision |
| Risk | T | 1 | Transition Program Risk Map | Correlation of Transition-related Level II risks to Project and overall C/S/T indicators. Histogram analysis of current Level III and Level II Transition risks by Centers, Project Elements, and Crosscutting functions. | Risk Management Lead | Quarterly based on Bimonthly TRR cycle | SIRMA analysis | PowerPoint Charts; Excel Spreadsheet; Vision |
| | t | 1 | Risk Mitigation Performance | Status of performance in risk mitigation Tasks measured by assessing the following:<br>1. Completion of SIRMA risk mitigation plan fields, including closure rationale<br>2. Schedule completion/variance actuals for mitigation plan tasks and milestones<br>3. Overall staleness metric for entering updated open Transition risk data | Risk Management Lead | Quarterly based on Bimonthly TRR cycle | SIRMA analysis | PowerPoint Charts; Excel Spreadsheet; Vision |
| | t | 2 | Cumulative Transition Risk Growth Trend | Cumulative growth or decline in number of SSP scorecard-based Transition Red, yellow, and Green risks from the baseline start date of the transition Program | TIWG | Quarterly and Annually | SIRMA analysis | Excel Spreadsheet |
| | t | 2 | Risk Disposition Actuals and Trends | Histogram analysis/actuals of Transition risks based on the following status:<br>1. New open risks from last quarter<br>2. New open concerns from last quarter<br>3. New open cost threats from last quarter<br>4. Closed accepted risks<br>5. Closed mitigated risks<br>6. Risks escalated to TDR or TPR<br>7. Risks downgraded to concerns<br>8. Risks transferred to other programs<br>9. Risks transferred to institutional (Centers or Agency).<br>Over several quarters, this may be shown as a trend curve | TIWG | Quarterly and Annually | SIRMA analysis | Excel Spreadsheet; Vision |

Legend: T/t: T = Agency Transition-related; t = SSP Transition-related
Tier: 1: Key Indicator; 2: Project Control Indicator/External Data; 3: Recordkeeping Data or Sub-Element of Other Metric

# APPENDIX F

# SCA AND SCA DATABASE

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# APPENDIX F

# SCA AND SCA DATABASE

## 1.0 PROCESS/TOOLS

An SSP SCA tool is required to efficiently and effectively manage the T&R of capabilities. The SCA database provides such a tool. The SCA database is accessible from the SSP Transition website at https://www6.jsc.nasa.gov/sca/.

The SCA database is used for tracking, controlling, maintaining and updating information associated with SSP capabilities. In addition to the SCA database, a separate in-house-designed measurement and health status tool is used for data analysis within SCA, providing metrics concerning SCA, and facilitating metrics packages. The tool is necessary to provide rigorous analysis without impeding performance and availability of the database.

## 2.0 ANALYSIS

Two types of analysis are performed concerning the SCA database. The first analysis, a Block completion, is performed by an external tool that determines whether or not all of the required fields have an input, and then reports it as a percentage of the fields that are available to complete. A qualitative report is presented to the TIWG and at TQPMR with the goal of having all elements/projects report 100% of all required fields completed. The analysis tool does not distinguish whether or not the data in an individual field is valid.

The second type of analysis is performed in phases on the data itself. The first phase determines the validity of the inputs. It determines whether there is any duplicate data, any TBDs, or any other data placeholders. The second phase of data analysis determines the quality, and consistency of inputs between elements/projects and the data requested. Finally, the third phase uses the data collected to provide metrics, information for the capability disposition process, schedules, analysis of capabilities across project elements, and to support meetings and action items. Although there are three phases for performing SCA data analysis, the phases are not serial. They may be and are performed concurrently.

## 3.0 DATA CAPTURE

The capability data housed in the SCA database and necessary for the divestment process is captured in phases or blocks of datasets that are report-driven. The resulting aggregate reports and metrics are presented at each TQPMR.

### 4.0 BLOCK I

The first block contains general but distinguishing identifier information, schedule information and rationales. It provides the following utility:

a. The capability to communicate the overall T&R effort to SSP and HQ management for strategic decision-making; e.g., when management decisions are needed for transition/retirement of capabilities and upcoming capability LNDs and RDs

b. The capability for center integration leads and horizontal leads to analyze the overall T&R effort to make recommendations to management for strategic decision-making

c. The capability for element/project transition leads to communicate their overall T&R plans

### 5.0 BLOCK II

The second block captures additional capability identifier information, associates risk factors to phasing out a capability, program interfaces, and provides contractor and supplier information. It provides the following utility:

a. Shows when contractors phase-out or transition from a capability

b. Provides insight into impacts to states or congressional districts

c. Shows dependencies (impacts/synergies) between existing SSP capabilities and ISS Program, CxP, or other programs

d. Provides information to better manage risks associated with capability, and the impacts/synergies the capability has on other programs, centers, or agency

### 6.0 PROPOSED BLOCK

Block III has yet to be approved by the SSP Transition Manager. The third block would capture the bulk of the information concerning the SSP's resources (tangible and intangible assets and human capital), the relationship of these resources to the capabilities, and additional schedule information related to the release or transfer of these resources. It would provide the following utility:

a. Verification of budget formulation

b. Provide insight into scope of real and personal property disposition

c. Provide insight into contract end dates

d. Aid in overall human capital planning, risk mitigation, metrics and property management

Any subsequent blocks need to be defined and approved.

# APPENDIX G

# SMRT DOCUMENT

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**Pre-decisional**

# Space Shuttle Management Resource Transition Document (SMRT)

Resource number X (Resource title)

Element Name, NASA Center

Date

**Template**

National Aeronautics and
Space Administration

# Pre-decisional

## Space Shuttle Program (SSP) Transition Principles

The Vision for Space Exploration set in motion the retirement of the SSP by the end of FY 2010 and began SSP transition. The transitioning of SSP assets will be undertaken in a manner so as to safeguard the long term viability of the Nation's technical capabilities and assets for future opportunities and challenges. As such, the objectives of SSP transition are to preserve human capital / critical skills, infrastructure, and support equipment for the potential utilization by future programs, both internally and externally to NASA, and to responsibly disposition (phase-out) those SSP assets that are deemed no longer of value toward meeting NASA's Exploration objectives. All objectives will be accomplished in a manner that does not interfere with safely completing the remaining Space Shuttle manifest and will be fully integrated towards the achievement of the Vision for Space Exploration. This integration will include working closely with the Constellation Program to convey lessons learned and to facilitate the leveraging of existing and future resources.

## SMRT Document Scope

The mechanics of transitioning the SSP will be complex, difficult, and filled with many unknowns. Therefore, a business case platform will be utilized. This will ensure that creditable, consistent, and accurate information describing the characteristics of a transition-ready resource or capability are annotated and communicated in a standardized format. The Space Shuttle Management Resource Transition (SMRT) document will be the vehicle for this transmission. The document will provide a body of relevant information from which decisions can be rendered, communicated, documented, and tracked. In addition, the SMRT document can be called upon in the future as supporting rationale for the decisions made to either transfer or phase-out a specific SSP capability.

It should be noted that this template has been designed to encompass a broad range of potential scenarios; as such some of the requested information may not be needed to describe the specific characteristics of the capability considered for transition. The following template is a guide and therefore tailoring is welcomed and expected as we refine and evolve the application of this business case medium.

## SMRT Document Instructions

All SMRT documents will include the *Executive Summary* as a minimum set of information. The *Executive Summary* is sufficient to meet the SMRT requirement for tracking and archiving transition activities performed within the authority of the element projects. The *Executive Summary* allows SSP projects to document closeout or transfer decisions that do not carry significant risks as identified by the guiding questions below. If the potential risks to future Agency programs are apparent or even possible, a full SMRT may be justified to ensure sufficient information is available in the review process.

*SMRT Requirement*

A SMRT document will be required if any of the following conditions are met:

- An SSP capability, as established in the Strategic Capabilities Assessment Database, is being partially or fully terminated before the last Shuttle flight is complete through post-landing safing (this includes capabilities being directly transferred to Cx).
- An SSP capability transfer or termination is pending, but requires TPRCB or TCB authorization to establish priorities, provide gap funding, or address other issues.
- Any significant SSP resource, asset or capability that is being dispositioned (transferred, closed-out, excessed, etc) and meets any of the criteria listed in the Criteria Guidelines section below.
- A SMRT document is NOT required for every transition action. Examples of actions not requiring a SMRT document at all include the following:
    - Common purchase order completion. The SSP has thousands of vendors supplying non-unique equipment/material via purchase orders. If supplies are sufficient such that no further POs are required, there is no substantial government equipment to disposition, and there is no significant impact to other programs or the viability of the supply chain, then a SMRT is not needed. [The element transition managers have vendor lists. They can track the status of the element vendors and report when relationships are complete. Only those of significant stature or with potentially significant implications need to be documented via a SMRT.]
    - SSP excess hardware or material transfer. While transferring a whole product line might be a SMRT candidate, transferring excess hardware is not.

If a SMRT is necessary, per the *SMRT Requirement* above, then the author shall determine whether an *Executive Summary* is sufficient. The following criteria questions can be used as a general guideline to help determine whether the *Supporting Documentation* section of the SMRT needs to be completed in support of the decision-making process. Because of the subjective nature of some of the responses to the criteria guidelines, the option always exists to complete the full SMRT.

*Criteria Guidelines*

- A "yes" response to any of the questions may require additional analyses and a full SMRT to be completed.
- A "no" response to all of the questions requires only the executive summary to be completed.
- The term "significant" is purposely used to provide some flexibility to the elements/centers in identifying the resources or capabilities that require higher-level review. Implementation relies on the reasonable judgment of the element transition managers and center leads.

Y / N If another program or SSP element currently uses this capability (e.g. facility, vendor, or workforce), is there a potentially significant impact to those entities because of this capability closeout?

Y / N If another program or SSP element needs this capability (e.g. facility, vendor, or workforce) in the future, will there be a gap or overlap that requires resolution?

Y / N If this is a unique national capability, is the viability of the capability at risk?

Y / N If this is a critical, sole-source supplier to SSP or potentially critical to ISS or CxP, is the viability of the vendor at risk?

Y / N Will a significant facility be shut down?

Y / N Are there environmental activities associated with transfer or shut down of the capability/vendor that require action beyond standard environmental practices and that could result in a Government liability concern or issue?

Y / N Are there any potential historic preservation impacts to shut down or transfer the capability/vendor?

Y / N Are there potentially significant impacts to contractor or civil servant personnel?

## SMRT Submission Process

A process has been established within the Agency, SOMD and the SSP to accommodate the transition and retirement of the Shuttle Program. The engine within that process resides within the SSP Projects, Elements and support organizations. In accordance with this approach, transition SMRT documents will primarily be developed by the level III organization that is dispositioning the resource, asset or capability. It is their responsibility to assess the significance of the action, determine the need for a SMRT, collect the data and populate the SMRT, and submit the SMRT through the process with sufficient lead time to appropriately respond to any TCB actions/decisions and still meet the planned release date.

Completed SMRT documents will be reviewed with the designated center lead (MSFC, KSC, JSC, SSC) for concurrence and submitted to the TPRCB as an SR. (If required, a funding CR should be submitted to the appropriate forum after the final TPRCB/TCB decision is made.) The TPRCB Chair will either adjudicate the item or approve it for presentation to the TCB, as appropriate. Once a decision is reached at the appropriate board, the SMRT document will be converted to read-only and preserved in an SSP electronic repository.

# Pre-decisional

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Appendices (if available and used to support information contained within)

# Pre-decisional

# Executive Summary

This *executive summary* provides a complete description of the SSP capability in question and its planned disposition. It provides sufficient summary information as a stand-alone record for those resources that require SMRT documentation. The *supporting documentation* section will only included if determined necessary per the criteria guidelines.

## 1.1 Resource Overview

Provide a brief description of the resource (capability / vendor / process / etc. – resources may be grouped), its location and associated contractor and state the date and reason why it is no longer needed by the program. State if resource is unique and why. If resource is shared, identify all Government users and percentage of use. State, based on historical attrition and/or failure rates, what the current SSP or ISS inventory will support (i.e XX missions). Also state all stakeholders potentially impacted.

## 1.2 Contract Resource Physical Location

If resource is provided by Contract, provide the Contractor business name, and list the street address, state, city and zip code where resource/capability is manufactured / assembled / processed.

## 1.3 Disposition Summary

In this section provide a roll up of the package including recommendations/planned actions. Provide an explicit Last Need Date. Describe the pros and cons and potential impacts to terminating the need of the resource/capability in the future. Restate the workforce, environmental and historical preservation impacts and planned remediation (transfer). State ITAR issues (if applicable) and the impact to National capability (if applicable).

## 1.4 Project Element Authority

Orbiter, ET, RSRB (RSRM/SRB), SSME, MOD, FCOD, Launch and Landing, etc. Include NASA center, project manager's name, document preparer's name and contact information.

# Pre-decisional

# Supporting Documentation

## 2.0 Resource Description

Describe the general capability/process/function of the resource including the equipment used (GFE or contractor supplied personal property). Provide a list of stakeholders or customers for the resource. Provide a planned last need date and supporting rationale.

List the real property utilized including number of buildings, size, condition and Facility Condition Index number (if available), etc. Provide original and replacement cost information. Summarize the personal property impacts of transitioning this capability. Summarize any records retention/archiving impacts of transitioning this capability.

If it is a vendor, is it unique or sole source. What percentage of vendor business is attributed to NASA and if the site contain NASA property.

Include photographs.

## 3.0 Government Workforce Considerations

Demographics and Skills—capture all of the civil servants (direct and matrix) required to design, manufacture, fabricate, procure, manage, operate, maintain, and repair the resource. What are the outplacement plans for the affected civil servants? What are the estimated costs?

For any planned duty station changes, provide the new duty station and the number of employees targeted to move.

Identify any remaining workforce concerns—such as skills retention for problem resolution.

| Grade | 9 and below | 11 to 13 | 14/15 | SES |
|---|---|---|---|---|
| Direct | | | | |
| Matrixed | | | | |

| Duty Station | | | |
|---|---|---|---|
| Direct | | | |
| Matrixed | | | |

| Skills (Levels of Certification) | Direct | Matrixed | Unique skill? (not available elsewhere in the Agency) |
|---|---|---|---|
| | | | |
| | | | |

## 4.0 Contractor Data

List all contractor companies associated with the resource. Provide information in Government Fiscal Year (GFY) format. For example:

Provide details on the number of employees that are potentially impacted and the expected/planned consequences to them (retirements, attrition, transfers, layoffs, etc.). Include the skill mix and types and levels of certification.

Provide information about the location of the activity.

Provide contract information. Contract information would include, but not limited to the type, duration, identifier number, etc. It would also include any contract factors (termination costs) that might be of significant impact.

Provide a list of GFE/contractor real or personal property including potential disposition impacts (who is responsible).

Provide additional information if this is the only source known to the government to provide this resource. Provide percentage of total business that the Program provides to support this activity.

List sub-supplier companies associated with the resource.

## 5.0 Cost Data

### 5.1 Annual Cost to Operate

Provide the annual cost to operate the resource with run-out costs through end of program (excel spread sheet). Break down the cost for each category (facility, personnel, overhead, materials, maintenance, environmental, etc.). Identify if the run-out costs are in the current element budget. Clearly identify the GFY monthly cost associated with continually maintaining the resource beyond element last funding availability date. Identify outstanding maintenance and maintenance backlogs with supporting schedule, cost and implementation. Provide all costs, work force, duration, etc. in Government Fiscal Year (GFY) and EP's.

### 5.2 Cost to Close Down

Provide estimated total cost to close down resource completely (include details of associated costs – what would it take. This would also include potential areas to mitigate close down costs…scrap value, property sale, etc). Also provide estimated cost to re-establish resource if closed out completely (include details of associated costs to bring it back to full capability and estimated life cycle costs of the resource). Provide a planned general method/schedule to conduct stated activities.

### 5.3 Cost to Sustain

Provide estimated costs to maintain resource at short term (1 year) / medium term (3 year) / long term (5+ years) sustainment levels (include details of associated costs). Provide estimated cost to re-establish resource from said sustainment terms (include details of associated costs to bring it back to full capability and life cycle cost estimates). Provide a general method to conduct stated activities.

### 5.4 Cost to Repair to Agency Standard

(If applicable) If resource is in need of repair, provide estimated cost and schedule to bring it back to stated condition. For example, provide Facility Condition Index, BMAR data, etc.

## 6.0 Environmental information

Provide a description of the environmental status and concerns. Reference relevant federal, state, and local regulations / standards that are driving the concerns. Describe the potential environmental risk to the Government associated with the proposed action(s). Address the environmental risk categories such as National Environmental Policy Act (NEPA) requirements, environmental obligations (leases, MOUs, agreements, etc), environmental compliance and permit issues (modifications/closures, notices, gap funding, etc.), regulatory exemptions, environmental records retention, environmental contamination, and property transfer and disposal requirements (real property, personal property, special artifacts, special material stockpiles, etc.) Also provide a timetable and expected cost for any ongoing actions or known future actions.

## 7.0 Historical information

If resource has a potential historical impact for preservation, state rational for classification. Provide details on potential recipients. Also provide risks and assumptions with transfer of resource (cost, schedule etc). Include relevant details defining compliance with the National Historical Preservation Act (NHPA) and their consequences to the existing and future Programs (if any). Provide / reference historical documentation/surveys if available.

## 8.0 Time and schedule

Restate the date at which the resource is no longer needed. State required time to disposition (level, abandon, mothball, etc) and provide planned schedule for disposition. Provide timeline if available.

## 9.0 Associated Risks

Provide a detailed assessment on the associated risks with respect to SSP mission requirements and resource disposal. Address risk in the following areas: cost, schedule, technical, environmental and safety, that the program may incur with the decision to terminate the resource. This would include the potential impacts to associated stakeholders. Provide a justification and mitigation plan if resource is needed in the future (i.e. if the need arises, how the program would address it). State what margins the program has toward supporting manifest extension. Provide all costs, manpower, duration, etc in GFY & EP and safety risks in a SSP risk matrix (likelihood vs consequences).

## 10.0 Options

List potential options associated with resource or capability. This section would provide a roll up of the data presented in the Cost Data section and are not limited to the examples below. The number of options could vary depending on the resource under transition consideration.

Option 1: This option would state the current SSP (close-down) planning activities. (i.e no other potential use outside of SSP). List planned time to accomplish and associated costs to implement.

Option 2: This option would state the costs associated with placing the resource in a short term (1 year) / medium term (3 year) / long term (5+ years) mothball type mode (i.e. zero production level). List the details needed to accomplish including cost and schedule. Also include the time and cost needed to re-establish the resource to full capability.

Option 3: This option would state the cost associated with placing the resource in a sustainment or scaled down production mode (i.e. keeping the capability viable for future use by SSP or others outside of SSP). State the production level. List the details needed to accomplish including cost and schedule. Also include the time and cost needed to re-establish the resource to full capability.

# APPENDIX H

# RECORDS ARCHIVAL PROCESS

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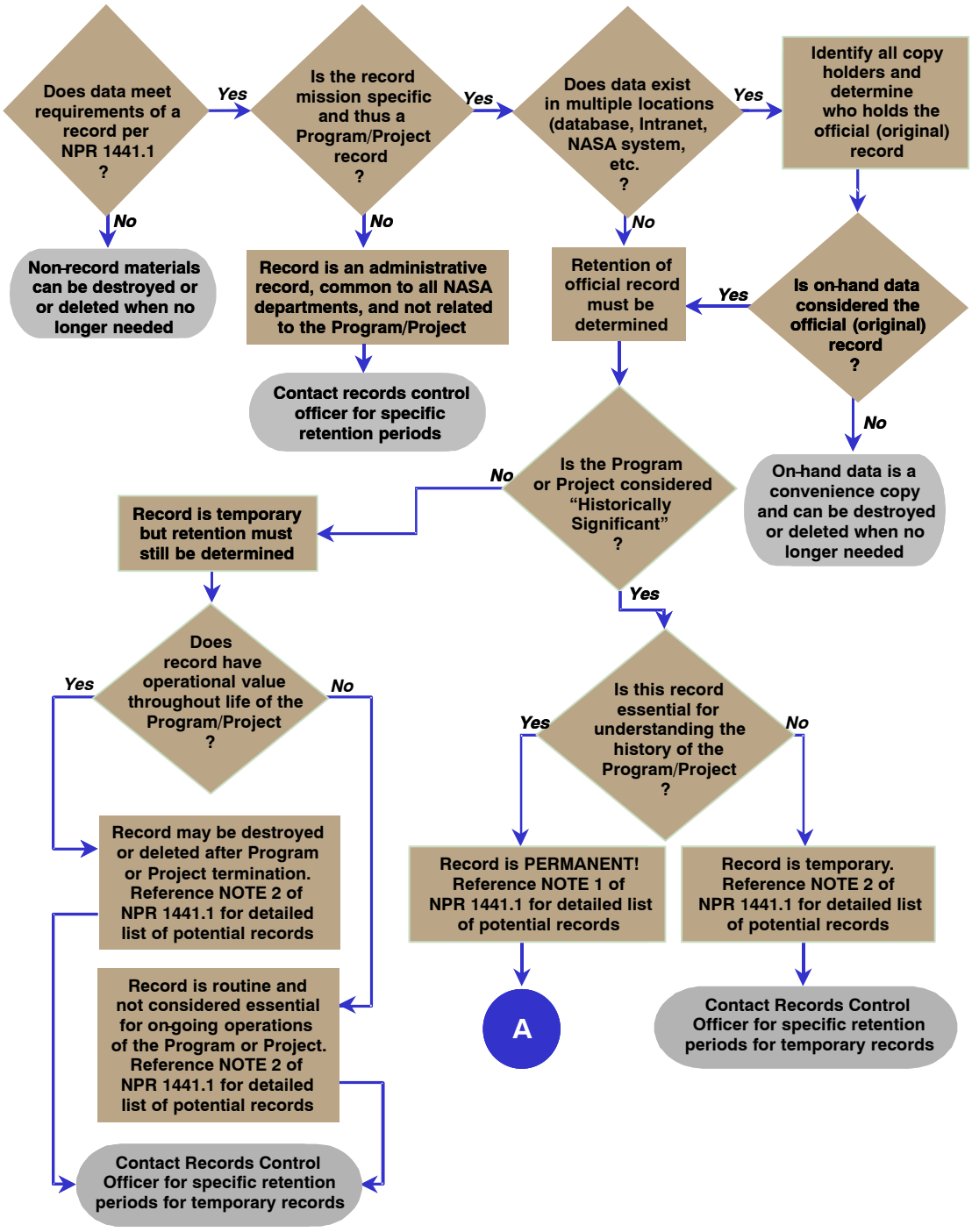
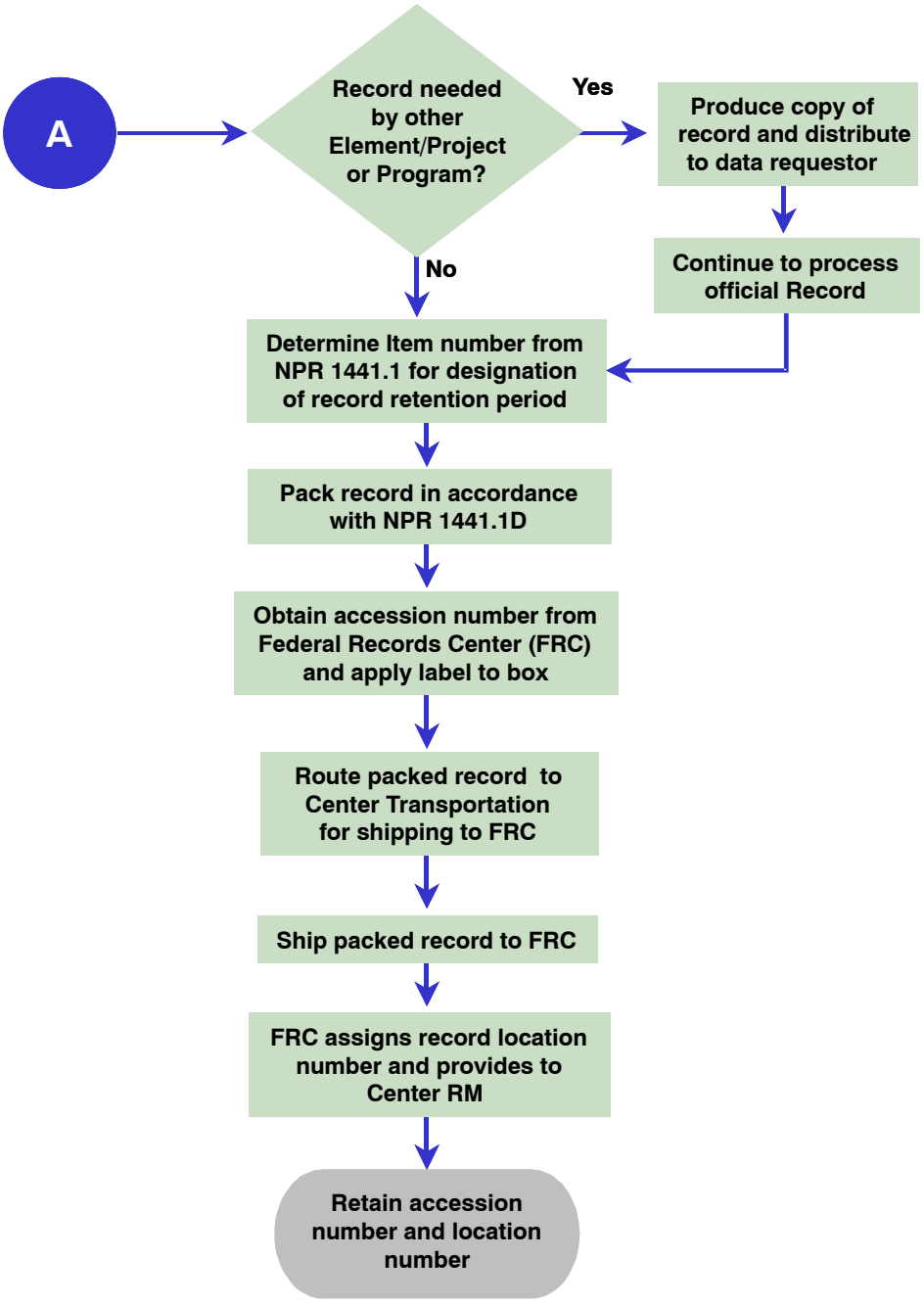
# FIGURE H-1

# RECORDS ARCHIVAL PROCESS



## FIGURE H-1

## RECORDS ARCHIVAL PROCESS - Concluded



# APPENDIX J

# CONFIGURATION MANAGEMENT PROCEDURES

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# APPENDIX J

# CONFIGURATION MANAGEMENT PROCEDURES

## 1.0 PURPOSE

The purpose of this appendix is to identify which T&R products are configuration controlled, and to establish the Configuration Management (CM) procedures unique to SSP T&R for both configuration controlled products and non-configuration controlled products.

## 2.0 SCOPE

The CM procedures established by this appendix are applicable to all organizations and personnel involved in the submittal for baselining and processing of changes to SSP T&R products.

## 3.0 RESPONSIBILITIES

### 3.1 PROGRAM AND ELEMENTS/PROJECTS RESPONSIBILITIES

The program is responsible for submitting baseline requests for program-controlled products to the TPRCB. Either the program or an element/project can submit a CR for a program-controlled product to the TPRCB. Generally, the program is responsible for reviewing and deciding approval status for element/project CRs. The party submitting the request is responsible for ensuring approved changes are incorporated, and distributed to the appropriate forums.

Elements/Projects are responsible for submitting CRs on element/project - controlled products to the appropriate element/project board in accordance with their defined procedures.

### 3.2 TRANSITION PROGRAM REQUIREMENTS CONTROL BOARD

The authority, responsibility, and organization of this board are specified in Paragraph 4.5.4 of the TMP.

## 4.0 CONFIGURATION CONTROLLED PRODUCTS

Products which establish and document the T&R baseline are configuration controlled. Changes to the established baseline require the approval of the appropriate Configuration Control Board (CCB). Table J.1 identifies the T&R configuration controlled products, the appropriate CCB, and the governing change process procedures.

## TABLE J.1

## CONFIGURATION CONTROLLED PRODUCTS

| Product | CCB | Change Processing Procedures |
|---|---|---|
| Program-Level Plans | TPRCB | NSTS 07700, Volume IV - Book 1 |
| SCA Database Records (Individual Capabilities) | TPRCB | NSTS 07700, Volume IV - Book 1 |
| SCA Database Controlled Fields<br><br>- Capabilities Dates<br>- Key Decision Dates<br>- Last Need Dates<br>- Release Dates | TPRCB | NSTS 07700, Volume IV - Book 1 |
| Element/Project Plans | Element/Project Boards | Element/Project Procedures |

### 4.1 CHANGE PROCESS PROCEDURES

The change process procedures, as documented in NSTS 07700, Volume IV - Book 1, require submission of a CR to the TPRCB for board dispositioning when requesting a change to the established baseline. CRs are processed and dispositioned at the formal TPRCB or Outside the Board (OSB).

Changes to Strategic Capabilities Assessment Database (SCADB) Records or Controlled Fields are handled by processing CRs OSB, unless otherwise directed by the TPRCB Chair. Evaluations/Concurrences from the appropriate groups are obtained prior to presenting the CRs to the TPRCB Chair for OSB dispositioning. Date changes due to replanning along with actuals are included in the Transition Strategic Schedule (TSS) and shown as variance from the baseline until the baseline is approved for change.

### 4.2 CHANGE PROCESS PROCEDURES EXCEPTIONS

When significant changes occur to the manifest, during the annual fiscal budget planning cycle, or if there are other significant changes in the T&R community, the SCADB may be opened for a re-planning period. During this period, all fields (including controlled fields) and records may be changed without prior approval or presentation before the board. Planned changes shall be reported and reviewed at the board during or after the re-planning period is completed.

### 5.0 NON-CONFIGURATION CONTROLLED PRODUCTS

Products that do not represent the baseline but represent a historical record of T&R are, for purposes of this appendix, identified as Official Material. Table J.2, a representative but not exhaustive list, identifies official materials, update frequency, presentation forum (if required), and location of the official materials. Table J.2 will be updated, as necessary, when other official materials are developed.

## TABLE J.2

## OFFICIAL MATERIAL

| Official Material | Frequency | Location Stored |
|---|---|---|
| TQPMR | | |
| SCA Database All Uncontrolled Fields | Quarterly | SCA Application |
| TQPMR Packages | Quarterly | SharePoint (TQPMR) |
| TMS (Transition Integration Schedule [TIS] and TSS are specific subsets of the TMS) | Quarterly as part of TQPMR Metrics | SharePoint (TQPMR) |
| TPRCB | | |
| SMRT Documents | Once (or as needed) | SharePoint (T&R) |
| TAP | Annually | SharePoint |
| TCB | | |
| “Big T” Metrics | Quarterly | SharePoint |
| Various | | |
| White Papers | Once (or as needed) | SSP Web (T&R) |
| Benchmarking Reports | Once (or as needed) | SSP Web (T&R) |
| HQ Metrics (KDD status) | Monthly | SharePoint |

### 5.1 CHANGE PROCEDURES

Official materials are not under board authority for change control, but are governed by the following change procedures. Standard operating procedures will be developed if more detailed processing procedures are needed.

#### 5.1.1 Special Instructions

Data from configuration controlled products are contained in SMRT documents and the TMS. There may be instances where direction is given to include an approved or pending change of such data in official material prior to the change being formally implemented in the configuration controlled product.

## 5.2 STORED COPIES

Official materials are posted in a designated location initially when they are finalized, and when they are thereafter modified, reference Table J.2. The document owner is responsible for providing the most current version to the appropriate librarian for posting to the designated location.

### 5.2.1 TQPMR Package

The TQPMR package is archived by date on the SharePoint T&R site unless directed by TQPMR management to modify before posting. Since this package is reviewed quarterly, it is not necessary to reflect changes in the previous version. The changes are reflected in the version for the upcoming review period.

## 5.3 OPEN PERIODS AND FREEZE POINTS

The official materials are used for planning and reporting. As such, updates are required on a periodic basis. To support planning changes and metrics reviews, open entry periods and freeze points are established for the SCADB, the metrics packages, and the TMS which are the main products presented at the TQPMR. Table J.3 shows the quarterly TQPMR cycle.

The open period begins the week following a TQPMR, and lasts until three weeks prior to the next TQPMR. The SCADB, data sources for metrics packages and the TMS are open for editing, except for configuration controlled fields in the SCADB.

The freeze period begins three weeks prior to the TQPMR and lasts until one week following the TQPMR. The metrics packages and TMS are prepared and integrated for TQPMR presentation. Additionally, before a scheduled release, the SCADB may be closed to avoid loss of data during upload of additional functionality. The period typically lasts no longer than three days. There may be exceptions to the time period due to anomalies.

# TABLE J.3

# QUARTERLY TQPMR CYCLE

| | Quarterly TQPMR Cycle | | | |
|---|---|---|---|---|
| | | 1st Month | 2nd Month | 3rd Month |
| TQMPR | TQPMR +1 week | SCADB open for editing uncontrolled fields<br>TQPMR Presentations/ Actions posted to SharePoint | | |
| | 3rd Tuesday of month | TIWG | TIWG/TIS Call | TIWG |
| | Last Tuesday of month | HQ Metrics Package (KDD status) posted to SharePoint | HQ Metrics Package (KDD only) posted to SharePoint | HQ Metrics Package (KDD only) posted to SharePoint |
| | TQPMR –3 weeks | | | SCADB closed for Metric development<br>TIS updates due<br>TQPMR Review Package Development begins |
| | TQPMR –2 weeks | | | Draft TQPRM Review Package Due |
| | TQPMR –1 week | | | Final TQPMR Review Package Due<br>“Big T” Metrics Package Due |

**TQPMR**

Metrics and Schedule Package Review

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