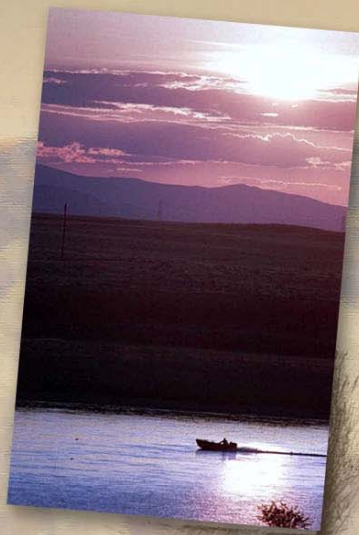
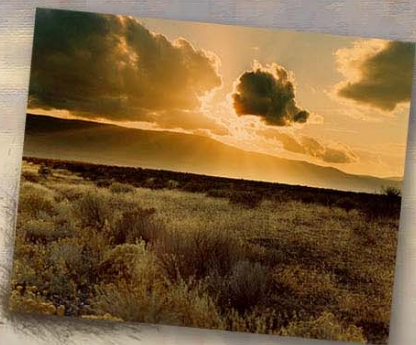




# Hanford Long-Term Stewardship Program Plan



August 2010

U.S. DEPARTMENT OF  
**ENERGY**



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# Hanford Long-Term Stewardship Program Plan

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**ENERGY**

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## TERMS

AMMS	Office of Assistant Manager Mission Support
CERCLA	<i>Comprehensive Environmental Response, Compensation, and Liability Act of 1980</i>
CFR	<i>Code of Federal Regulations</i>
DOE	U.S. Department of Energy
Ecology	Washington State Department of Ecology
EM	U.S. Department of Energy, Office of Environmental Management
EPA	U.S. Environmental Protection Agency
HCP EIS	DOE/EIS-0222-F, <i>Final Hanford Comprehensive Land-Use Plan - Environmental Impact Statement</i>
LIGO	Laser Interferometer Gravitational Wave Observatory
LM	U.S. Department of Energy, Office of Legacy Management
LTS	long-term stewardship
National Monument	Hanford Reach National Monument
NEPA	<i>National Environmental Policy Act of 1969</i>
RCRA	<i>Resource Conservation and Recovery Act of 1976</i>
RL	U.S. Department of Energy, Richland Operations Office
ROD	record of decision
S&M	surveillance and maintenance
Tri-Party Agreement	Ecology et al., 1989, <i>Hanford Federal Facility Agreement and Consent Order</i>
USFWS	U.S. Fish and Wildlife Service

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## 1.0 INTRODUCTION

This plan describes the U.S. Department of Energy (DOE), Richland Operations Office (RL) Hanford Long-term Stewardship (LTS) Program Plan for managing post-cleanup obligations at the Hanford Site in a safe and cost-effective manner. Remediated geographic areas of land will transition into the Hanford LTS Program when their required cleanup activities are completed. A comprehensive overview of the Hanford Site cleanup is provided in the draft of DOE/RL-2009-10, *Hanford Site Cleanup Completion Framework*, which describes the cleanup of all three main components of Hanford Site cleanup (i.e., the River Corridor, Central Plateau, Tank Waste) and the relationship of the cleanup to LTS. Additional information regarding the cleanup of the Central Plateau is provided in DOE/RL-2009-81, *Central Plateau Cleanup Completion Strategy*, which describes DOE's vision for completion of Central Plateau cleanup, the technical and regulatory path forward, and the decisions needed to achieve the vision. RL's objective is to reduce the footprint of the Site's active cleanup operations by 45 to 60% and 85 to 90% in calendar years 2011 and 2015, respectively, as described in DOE/RL-2010-18, *Hanford Site Active Cleanup Footprint Reduction*.

### Definition of Long-Term Stewardship

Long-term stewardship refers to all activities necessary to ensure protection of human health and the environment following completion of cleanup, disposal, or stabilization at a site or a portion of a site. Long-term stewardship includes all engineered and institutional controls designed to contain or to prevent exposures to residual contamination and waste, such as surveillance activities, record-keeping activities, inspections, groundwater monitoring, ongoing pump and treat activities, cap repair, maintenance of entombed buildings or facilities, maintenance of other barriers and containment structures, access control, and posting signs.

DOE/EM-0563, *The Report to Congress: Long-Term Stewardship*

The Hanford LTS Program will manage the geographic areas for which cleanup has been completed in accordance with the post-cleanup requirements specified in the associated decision documents. These decision documents include, but are not limited to, the *Comprehensive Environmental Response, Compensation and Liability Act of 1980* (CERCLA) record of decisions (RODs) and *Resource Conservation and Recovery Act of 1976* (RCRA) post-closure plans. In addition to managing the post-cleanup completion obligations, the Hanford LTS Program will manage Site natural and cultural resources through the framework of DOE/EIS-0222-F, *Final Hanford Comprehensive Land-Use Plan - Environmental Impact Statement* (HCP EIS), and 64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP EIS)," and in accordance with federal laws, executive orders, Tribal Nations' treaties, DOE directives, and Hanford Site procedures.

RL will manage the Hanford LTS Program until all DOE Office of Environmental Management (EM) missions at the Hanford Site are complete. When continuing missions and cleanup at the Site are complete, the management of the Hanford Site is expected to transfer to the DOE Office of Legacy Management (LM). LM is responsible for conducting LTS activities at DOE sites that have been cleaned up and for which there is no continuing DOE mission. Until then, RL will manage the Hanford LTS Program in a manner consistent with LM's goals, policies, and procedures. DOE anticipates that the Hanford Site will remain under federal management and control for the foreseeable future.

## 1.1 PURPOSE

This plan fulfills the following purposes:

- Establishes a Hanford LTS Program
- Serves as a management plan that identifies the program's responsibilities and activities
- Describes the relationship between cleanup projects and the Hanford LTS Program
- Defines the process that will be used to transition land management responsibility from cleanup projects to the Hanford LTS Program.

The Hanford LTS Program Plan also serves as one of the implementing procedures and controls for the HCP EIS.

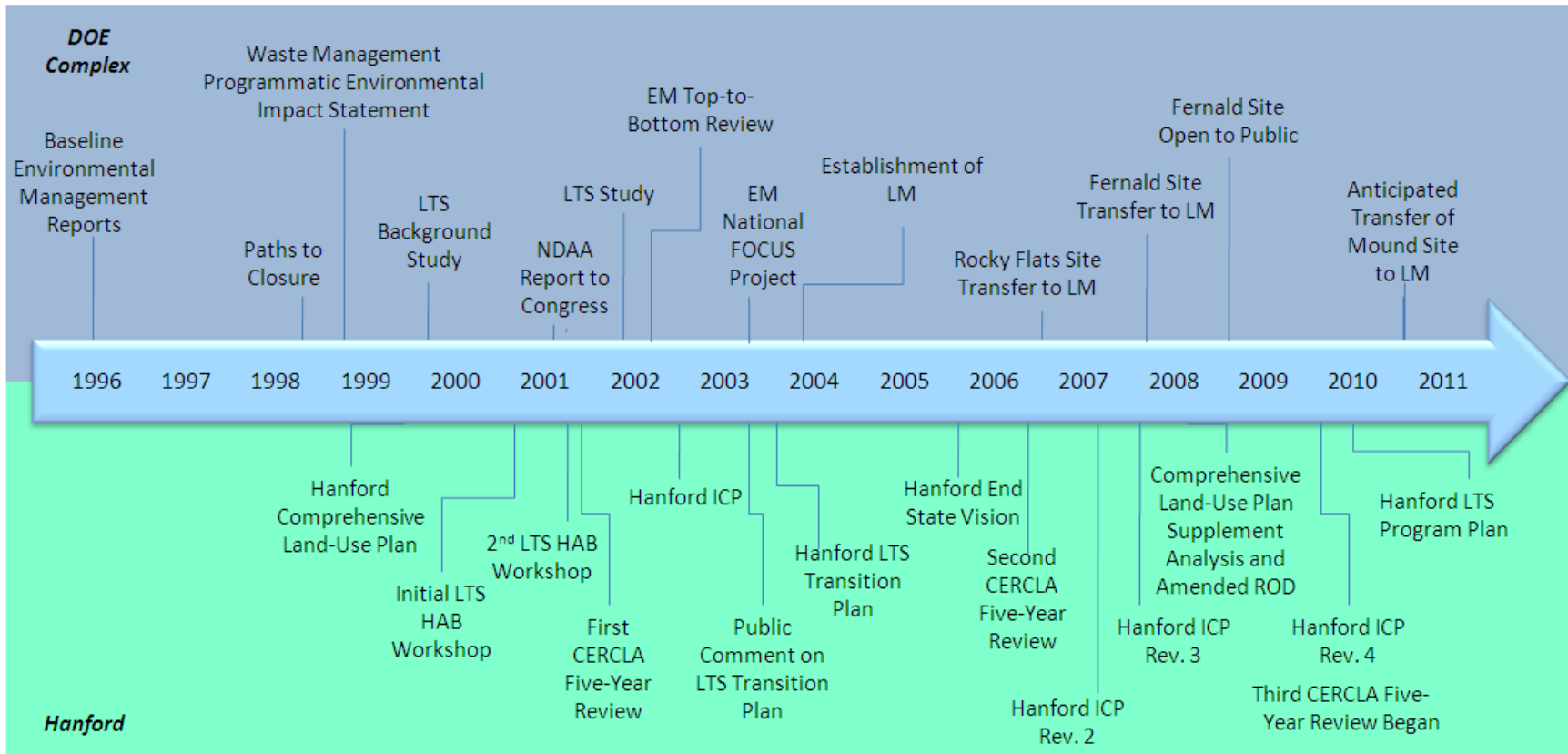
## 1.2 BACKGROUND

Figure 1-1 illustrates the evolution of the DOE complex-wide LTS program through a series of reports and studies. The top half of the timeline is focused at the national level, the bottom half is focused on Hanford-specific activities. At the national level, DOE recognized the significance of LTS in the 1990's when it issued several reports that addressed cleanup and management of land upon completion of the cleanup mission at its sites. In 2003, DOE established LM as the office responsible for conducting LTS activities at sites where there is no longer a DOE mission. LM currently manages 85 sites, including former EM sites for which cleanup has been completed (e.g., Rocky Flats, Fernald), sites remediated by the U.S. Army Corps of Engineers, and remediated uranium processing sites. Although LM will not take land management responsibility of the Hanford Site until cleanup of the entire Hanford Site is completed, the Hanford LTS Program will be managed consistent with current LM policies and procedures. More information about LM is available on the DOE web site at [www.lm.doe.gov](http://www.lm.doe.gov). At the Hanford Site, the HCP EIS identified the need to develop a Hanford LTS Program Plan, which was issued in 2003 as DOE/RL-2003-39, *Hanford Long-Term Stewardship Program and Transition: Preparing for Environmental Management Cleanup Completion*. CERCLA RODs identified a need for a Sitewide institutional controls plan, which was first issued in 2001. The Hanford LTS Program Plan builds off the foundation of these earlier documents and replaces DOE/RL-2003-39 as the Site progresses from LTS planning to implementation.

## 1.3 LONG-TERM STEWARDSHIP AT THE HANFORD SITE

Hanford LTS Program responsibility begins for a geographic area when remedy cleanup objectives and goals are met, as defined by the applicable CERCLA and RCRA decision documents (Figure 1-2). The Hanford LTS Program includes post-cleanup obligations such as the maintenance of remedies, the maintenance of institutional controls, the conduct of the CERCLA five-year review, and the operations and maintenance of groundwater treatment systems that are operational and functional. Section 2.1 provides more information on the transition of geographic areas into the Hanford LTS Program. In addition, the Hanford LTS Program consists of the management of the Site's resources, such as the cultural, biological, and natural resources, through the framework of the HCP EIS and its implementing procedures and controls. The following sections detail the Hanford LTS Program objectives.

Figure 1-1. DOE Complex-Wide and Hanford Long-term Stewardship Timelines.



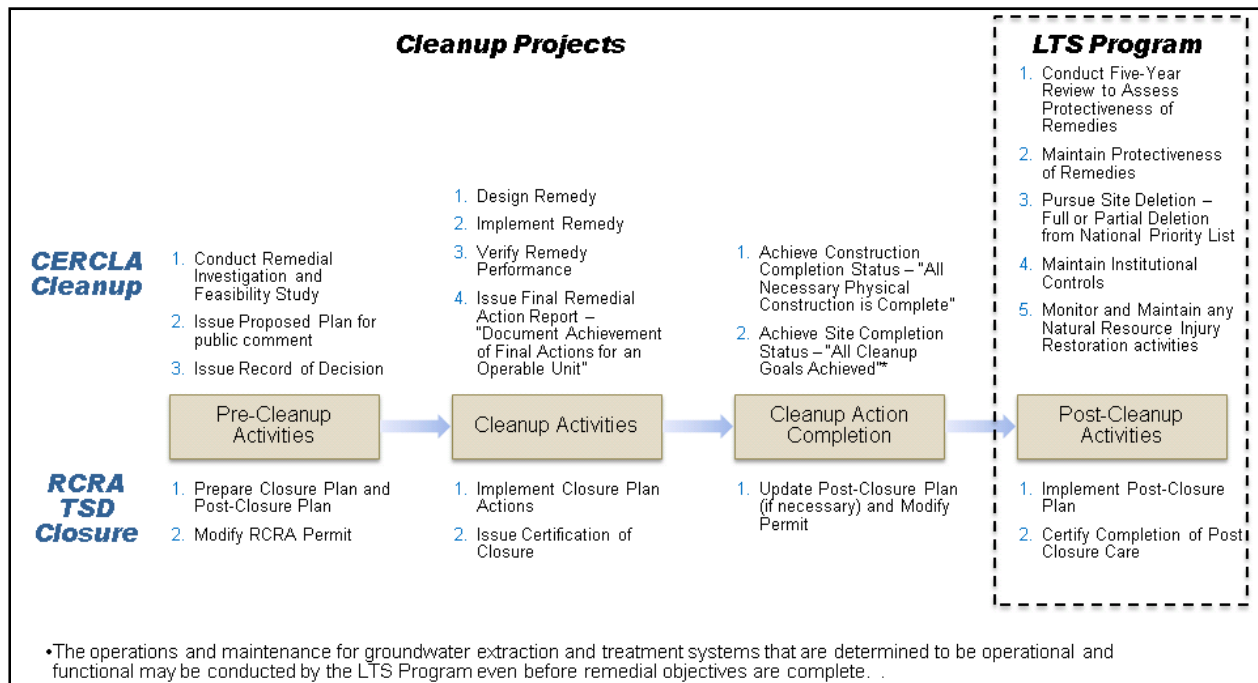
The top half shows reports, studies, and activities that developed the complex-wide LTS approach. The lower half shows Hanford-specific LTS activities.

HAB = Hanford Advisory Board.

ICP = Institutional Controls Plan (DOE/RL-2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions*).

NDAA = *National Defense Authorization Act for Fiscal Year 1997*.

Figure 1-2. Hanford Site Cleanup Completion Phases.



Sources: DOE, 2008, *CERCLA Remedial Action Site Closure Guidance*.  
 EPA/540/R-98/016, *Close Out Procedures for National Priorities List Sites*.  
 Ecology et al., 1989, *Hanford Federal Facility Agreement and Consent Order*.  
 TSD = treatment, storage, and disposal.

### 1.3.1 Protectiveness of the Remedies

The first objective of LTS ensures the continued protectiveness of remedies, as defined by CERCLA and RCRA cleanup decision documents. Regulatory decisions may not result in remediation of all areas to a condition that would allow unrestricted use or unrestricted surface use. In addition, some waste generated by past nuclear weapons production activities will be disposed to onsite permitted disposal cells. The Hanford LTS Program will manage the post-cleanup requirements of the remedies, as defined in the cleanup decision documents, including any required long-term operations and maintenance of groundwater remedies.

### 1.3.2 Protectiveness of the Resources and the Environment

The second objective of LTS includes the consideration of the unique biological, natural, and cultural resources on the land. These resources are managed at the Hanford Site by using Resource Management Plans and Area Management Plans as described in the HCP EIS, Chapter 6. Site resource examples include the following:

- Surface water, groundwater, land, natural gas, minerals, and other natural resources
- Fish, wildlife, and plant populations and their habitats
- Prehistoric archaeological sites
- Native American sacred and ceremonial places
- Historical resources.

## 1.4 REQUIREMENTS

As a major federal land management agency, DOE's obligations under the *Atomic Energy Act of 1954* and other federal laws are the fundamental bases for the Hanford LTS Program. The *Department of Energy Organization Act of 1977* clarified Congressional intent related to DOE's environmental functions. The Act states:

The Department of Energy, by consolidating environmental considerations and procedures...should provide an effective vehicle for identifying potential environmental, health, safety, socioeconomic, institutional, and control technology issues associated with technology development. It will provide a single, coordinated mechanism for determining necessity and timing of environmental impact assessments and environmental impact statements in order to respond to the needs of specific technologies or resources. It will ensure a complete and fully integrated program with respect to environmental, health and safety impact research and engineering applications.

LTS requirements are specifically defined in DOE O 430.1B, *Real Property Asset Management*, and DOE O 450.1A, *Environmental Management Program*. DOE O 430.1B explains the need for planning for LTS and notes that LTS includes "... the physical controls, institutions, information, and other mechanisms needed to ensure protection of people and the environment where DOE has completed, or plans to complete, disposition." DOE O 450.1A requires the scope of the Environmental Management System to "...encompass the environmental aspects of site operations and activities, including environmental aspects of energy and transportation functions, and it must promote the LTS of a site's natural and cultural resources throughout its design and construction, operation, closure, and post-closure life cycle."

Additional sources of the key regulatory and DOE requirements related to LTS include the following.

- The Tri-Party Agreement (Ecology et al., 1989, *Hanford Federal Facility Agreement and Consent Order*) requires the establishment and maintenance of an administrative record for each operable unit and treatment, storage, and disposal group that contains all of the documents with information considered in arriving at a ROD or permit. The Tri-Party Agreement also requires the establishment and maintenance of the Waste Information Data System, which identifies known and reported waste sites. The Waste Information Data System includes the type and location of a site, when a site was operated, general dimensions and description, general descriptions of waste placed at a site (e.g., estimated quantities of radionuclides and chemicals), and describes the current status of each unit. Waste Information Data System also includes information regarding completed waste sites and their required institutional controls.
- Remedial action objectives and other cleanup requirements are contained in CERCLA regulatory decision documents, including RODs, ROD amendments, explanation of significant differences, and action memorandums. Controls also may be summarized in remedial action reports. LTS requirements from CERCLA decision documents may specify institutional controls and the maintenance and monitoring of physical remedies. Further requirements may be specified in operations and maintenance plans.

- The RCRA post-closure permits and plans describe LTS requirements following the completion of cleanup. Such requirements may include maintaining institutional controls (e.g., fences, signs, surveys of where hazards remain) and monitoring activities.
- The *Revised Code of Washington* and the *Washington Administrative Code* may be identified as applicable or relevant and appropriate requirements to help establish cleanup levels.

LTS requirements may be defined as decisions made through the Natural Resource Injury Assessment Process. In addition to remediation of past releases, CERCLA requires that injuries to natural resources resulting from certain past releases be identified and restored. The Natural Resource Injury Assessment Process includes collecting, compiling, and analyzing information to assess the extent of injury to a natural resource and determine appropriate ways of restoring and compensating for that injury. Although the Natural Resource Injury Assessment Process is separate from the Hanford LTS Program, the Hanford LTS Program will be responsible for any required monitoring and maintenance once resulting restoration activities have been completed.

## **1.5 HANFORD LTS PROGRAM WITHIN THE FRAMEWORK OF THE HANFORD COMPREHENSIVE LAND-USE PLAN**

The Hanford LTS Program Plan is one of the implementing procedures and controls of the Comprehensive Land-Use Plan (identified in the HCP EIS, Chapter 6). The HCP EIS adopted the Comprehensive Land-Use Plan for the Hanford Site in accordance with DOE's responsibilities under the *Atomic Energy Act of 1954* and pursuant to Congress's direction in the *National Defense Authorization Act for Fiscal Year 1997*. DOE issued the HCP EIS in September 1999 and a record of decision (64 FR 61615) in November 1999, which established the Comprehensive Land-Use Plan. In June 2008, the HCP EIS underwent a review through a *National Environmental Policy Act of 1969* (NEPA) Supplement Analysis (DOE/EIS-0222-SA-01, *Hanford Comprehensive Land-Use Plan and Environmental Impact Statement Supplement Analysis*). The result of the review was an amended ROD (73 FR 6450-01-P, "Amended Record of Decision for the Hanford Comprehensive Land-Use Plan Environmental Impact Statement") dated June 2008, which clarified the following points.

- When considering land-use proposals, DOE will use regulatory processes in addition to the implementing procedures in the HCP EIS, Chapter 6 to ensure consistency with Comprehensive Land-Use Plan designation.
- DOE will continue to apply the process under the HCP EIS, Chapter 6 to modify and amend the Comprehensive Land-Use Plan, as needed.

The following four elements of the Comprehensive Land-Use Plan address land-use activities and protect and manage unique resources of the Site.

- A land-use map depicts designated land uses for areas of the Hanford Site and supports full implementation of the DOE mission elements assigned to the Hanford Site.
- Land-use designations define the purpose, intent, and principal uses of each geographic area shown by the final Comprehensive Land-Use Plan map.
- Land-use policies direct land-use actions and help ensure that individual land-use actions collectively advance the Comprehensive Land-Use Plan's goals and objectives over time.

- Land-use plan implementation procedures and controls and administrative procedures are used to review and approve proposed land-use requests. In addition, these procedures are used to make recommendations on actions to be undertaken under the land-use plan to align and coordinate Hanford Site area and resource management plans (e.g., DOE/RL-98-10, *Hanford Cultural Resource Management Plan*; DOE/RL-96-32, *Hanford Site Biological Resource Management Plan*). These types of plans are used by RL as implementing procedures and controls to ensure consistency in land-use activities on the Hanford Site. This includes consideration and management of the land; facilities; infrastructure; and unique biological, natural, and cultural resources on the Hanford Site.

The Hanford LTS Program Plan provides an integral part of implementing the Comprehensive Land-Use Plan to address post-cleanup activities and requirements when considering and managing land-use activities on the Hanford Site. When evaluating land-use requests through the Comprehensive Land-Use Plan implementing procedures and controls, the Hanford LTS Program will provide important information to ensure protectiveness of the remedies and the environment. Like the Hanford LTS Program Plan, each of the management plans described in the HCP EIS, Chapter 6 direct unique resources and key activities, but together provide a comprehensive approach for the management of land and facilities at the Hanford Site.

The Comprehensive Land-Use Plan implements DOE P 430.1, *Land and Facility Use Planning*, to manage all of its land and facilities as valuable national resources and as an approach to stewardship. DOE's stewardship is based on the principles of ecosystem management and sustainable development, and supports DOE's critical missions, stimulates the economy (e.g., energy park projects), and protects the environment.

## **1.6 CONTENT OF THE PLAN**

This plan defines DOE's approach to LTS for the Hanford Site. It details how DOE intends to meet its responsibilities to maintain the protectiveness of the cleanup remedies in accordance with regulatory requirements and to protect and manage the resources and the environment. Chapter 2.0 defines when LTS begins, identifies the activities of the Hanford LTS Program, and discusses the planning needed to prepare for LTS activities. Chapter 3.0 describes how DOE will transition land management responsibility from the cleanup projects to the Hanford LTS Program. Chapter 4.0 defines the implementation of each LTS activity.

## **1.7 REVISIONS TO THIS PLAN**

As a newly-created program at the Hanford Site, the Hanford LTS Program will be dynamic, active, and flexible to address issues as they arise and incorporate lessons learned from the experiences of the Hanford LTS Program, as well as experiences of other sites. RL will continue to consult with the Tribal Nations as it implements the Hanford LTS Program and updates this plan. This plan is intended to be a living document that will be updated as the Hanford LTS Program gains experience in conducting activities and as requirements continue to be defined in future cleanup decision documents.



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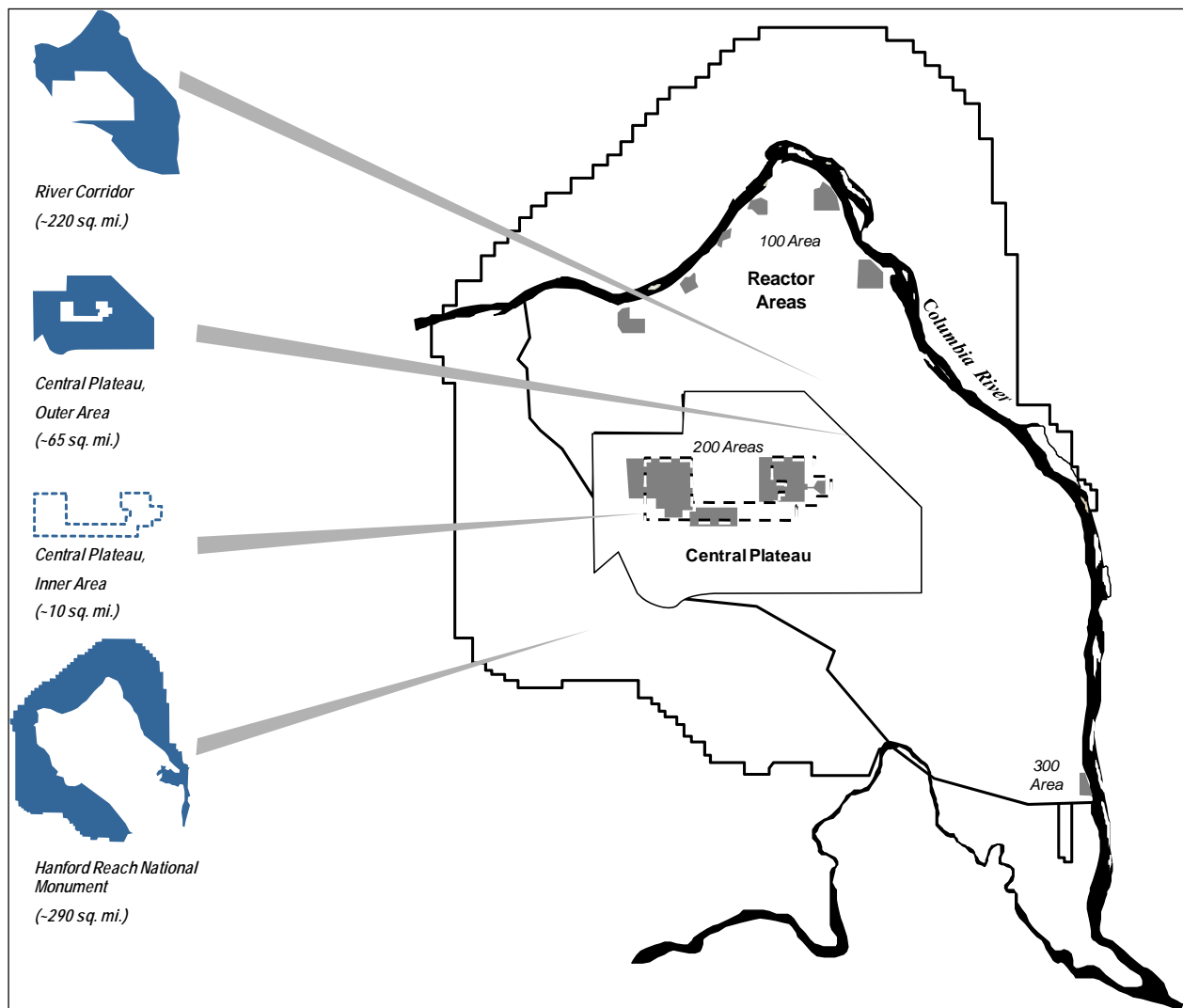
## 2.0 PLANNING FOR LONG-TERM STEWARDSHIP

This chapter describes the preparations for the transition of remediated geographic areas of land, or ROD areas, into the Hanford LTS Program upon completion of cleanup activities. For this plan, a ROD area is the geographic area that corresponds to a particular ROD for which cleanup has been completed and for which land management responsibility is being transitioned to the Hanford LTS Program.

### 2.1 COMPLETION OF CLEANUP AND COMMENCEMENT OF LONG-TERM STEWARDSHIP

RL's near-term cleanup objective is to significantly reduce the footprint of active cleanup operations within the next five years for the Hanford Reach National Monument and the River Corridor (Figure 2-1).

Figure 2-1. Geographic Components of Active Cleanup Footprint Reduction.



The anticipated schedule for the cleanup of the three major geographic components of the Hanford Site (Figure 2-1), includes the following.

1. **Hanford Reach National Monument** - The Hanford Reach National Monument (National Monument) cleanup component, which includes removal of debris piles, excess facilities, and abandoned experiments, is planned for completion in fiscal year 2011. Cleanup of monument lands to the south and west of the Columbia River (e.g., the reactor areas) will be completed as part of the River Corridor cleanup.
2. **River Corridor** - The River Corridor component is planned for completion in calendar year 2015. The River Corridor is being cleaned up to the criteria specified in the associated interim RODs. Over half of the River Corridor work scope is now complete and between 2010 and 2015 all segments of the River Corridor will be cleaned up consistent with the interim RODs. Groundwater remediation activities have been implemented and will continue after cleanup of the River Corridor component is completed.

The River Corridor has six geographic areas for which final RODs are being developed (Figure 2-2):

- a. 100-B/C Area (the location of the reactor areas are shown in grey in Figure 2-2)
- b. 100-K Area
- c. 100-N Area
- d. 100-D and 100-H Areas
- e. 100-F Area combined with 100-IU-2/IU-6 Areas (because of the significant size of this ROD area, it is further subdivided into five multiple geographic areas called segments)
- f. 300 Area, including nearby 600 Area waste sites.

Figure 2-2 shows the locations of these six ROD areas, including the five segments of the 100-F/IU-2/IU-6 ROD Area.

After completion of the River Corridor final RODs, the CERCLA process may still determine that additional cleanup is required or warranted beyond what was performed under the interim RODs. The River Corridor RODs are planned to be finalized in 2014. Any additional cleanup to the final RODs is within the scope of current DOE contracts.

3. **Central Plateau** - The Central Plateau area will be dedicated to long-term waste management and containment of residual contamination. The outer area waste sites are being cleaned to levels comparable with the River Corridor cleanup. The outer area will be cleaned up to the criteria specified in the Outer Area CERCLA ROD, with cleanup completion planned between 2015 and 2020. Completion of the inner area will follow.



Prior to the completion of cleanup for a final remedy of a ROD area, the Hanford LTS Program will begin to work with the cleanup projects to identify and define the following:

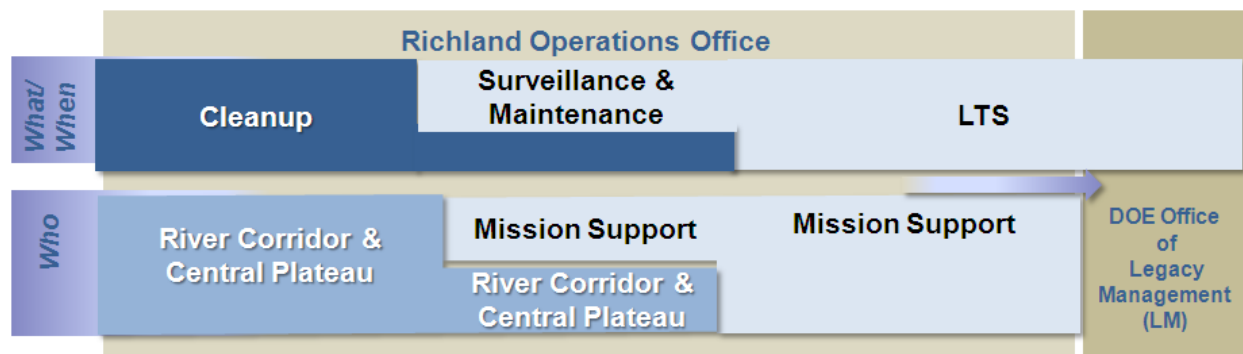
- The cleanup completion schedule
- The ROD areas' boundaries and end state conditions
- The required LTS activities
- The estimated life-cycle costs for LTS of the ROD area
- The related information and data that will be needed to support LTS for the ROD area.

The ROD area then will be transitioned to the Hanford LTS Program when cleanup is completed, as shown in Figure 2-3.

ROD areas for which cleanup to the interim ROD has been completed may require interim surveillance and maintenance (S&M) activities prior to the development of the final RODs. The responsibility for conducting the associated interim S&M activities may be transitioned to the Hanford LTS Program, prior to the development of the final RODs. Section 2.4 describes the interim S&M activities associated with interim RODs.

When all remedial actions are complete for the three major geographic components, the Hanford LTS Program responsibilities are anticipated to be transferred to LM, as shown in Figure 2-3. The transition will follow LM transition policies and procedures in place at that time.

Figure 2-3. Relationship of Cleanup, S&M, and LTS Activities.



## 2.2 ACTIVITIES

The Hanford LTS Program is comprised of a group of activities designed to ensure the continued protection of human health and the environment, and to manage and protect Site resources. The activities listed in this section have been identified based on a review of LTS activities at other sites through the RL benchmarking efforts. Section 2.5 has more information regarding RL's benchmarking efforts. The Hanford LTS Program includes the following activities:

- Conduct administrative activities
- Conduct S&M of the physical remedies and institutional controls
- Conduct CERCLA five-year reviews
- Conduct environmental monitoring of the remedies
- Protect and manage Site resources
- Manage LTS information
- Prepare for emergencies, contingency planning, and corrective actions
- Manage post-cleanup completion infrastructure

- Conduct monitoring and maintenance of completed natural resource injury restoration projects
- Ensure the safety and health of LTS workers
- Provide quality assurance
- Manage and budget necessary funding
- Interface with other Site programs
- Interface with external entities
- Improve the Hanford LTS Program continuously.

These activities are described in greater detail in Chapter 4.0.

### **2.3 HANFORD LTS PROGRAM TRANSITION CHECKLIST AND INTERIM S&M CHECKLIST**

The Hanford LTS Program will develop a transition checklist that must be completed and signed off by the RL cleanup projects and the Hanford LTS Program prior to transition of land management responsibility of a ROD area. When cleanup is completed for a ROD area (or segment of a ROD area) and it is ready for transition, the transferring cleanup organization and the Hanford LTS Program will use the transition checklist to ensure all preliminary activities have been completed and that the associated documentation is in place.

Appendix A provides an example of the transition checklist that will be developed as part of the Hanford LTS Program activities. The example transition checklist was developed and will be maintained to be consistent with current LM practices. The checklist is based on the LM Site Transition Framework, which is the starting point used by LM to develop site-specific transition criteria for transferring EM sites into the LM Program. Although the transfer of the entire Hanford Site is not anticipated for several decades, the transition checklist will be designed to ensure the land is managed by the Hanford LTS Program in a manner consistent with the LM Program.

In addition to the transition checklist, the Hanford LTS Program will develop tools, as needed, to assist in the transition of land from the cleanup projects (e.g., acceptance criteria, procedures).

An interim S&M transition checklist also may be developed for use when the responsibilities for interim S&M activities of a particular ROD area are transitioned under an interim ROD to the Hanford LTS Program. The interim S&M transition checklist will be focused on S&M specific items and will be revised once the final ROD is issued.

### **2.4 INTERIM SURVEILLANCE AND MAINTENANCE ACTIVITIES PRIOR TO CLEANUP COMPLETION**

Although LTS follows the completion of cleanup to final RODs, interim S&M activities will begin upon completion of the active cleanup to interim RODs (Figure 2-2). For example, cleanup of soil remediation waste sites to interim RODs is anticipated to be completed in 2010 for Segment 1 of the 100-F/IU-2/IU-6 ROD Area. Although the final ROD has not yet been issued for the 100-F/IU-2/IU-6 ROD Area, this geographic area will have been cleaned up to the standards in the interim RODs. Once cleanup to the interim ROD is completed, the responsibility to perform interim S&M activities for Segment 1 will be transitioned to the Hanford LTS

Program. The interim S&M activities may include the enforcement of excavation restrictions for some areas, and access controls to prevent inappropriate land use.

Although the Hanford LTS Program will conduct interim S&M activities for ROD areas transitioned following cleanup to interim RODs, the cleanup projects remain responsible for, and will continue to follow, all other CERCLA requirements to reach cleanup completion of the ROD area to the final RODs (e.g., development of the final ROD, implementation of the final ROD, writing of the final remedial action reports, as shown in Figure 1-2). Once the cleanup projects have completed cleanup to the final RODs for these areas, the full land management responsibility will be transitioned to the Hanford LTS Program using the process described in Chapter 3.0.

The Hanford LTS Program will work with the cleanup projects to develop the specific schedule for the transition of interim S&M activities, to identify the regulatory requirements for the interim S&M activities, to develop the life-cycle cost estimate, and to obtain necessary funding for conducting the interim S&M activities. In addition, a turnover package will be developed that defines the boundaries of the area being transitioned, documents the cleanup history, describes the current status of the area (including existing infrastructure and other information needed to support land management activities), and identifies post-cleanup requirements. The turnover package also will document any remaining regulatory activities to be conducted by the cleanup projects to reach final ROD completion. The interim S&M checklist will be used to ensure the turnover package is complete and comprehensive.

An LTS S&M plan will be developed for each area, as it is transitioned, to define how the area will be managed to meet post-cleanup requirements. The LTS S&M plan will address all activities (e.g., maintaining institutional controls required by RODs, keeping LTS records, conducting inspections, monitoring groundwater, repairing caps, maintaining entombed buildings or facilities, maintaining barriers and containment structures, controlling access, posting signs) necessary to ensure protection of human health and the environment following completion of remediation, disposal, or stabilization of a site or a portion of a site.

## **2.5 INCORPORATION OF LESSONS LEARNED**

A number of sites across the country have already completed cleanup and entered LTS. During preparation of this plan and through previous LTS planning efforts, RL has reviewed, and will continue to consider, the lessons learned. The review included other DOE sites, such as Rocky Flats and Fernald (currently being managed by LM), LM transition policies, and Department of Defense sites (e.g., Rocky Mountain Arsenal in Colorado), environmental policy, and guidance documents. The benchmarking efforts for the Hanford Site include the following:

- Review of lessons learned at major EM closure sites
- Review of LM policies regarding transition of sites from EM to LM
- Review of the long-term surveillance and maintenance plans at major LM sites
- Interviews of personnel from other DOE sites engaged in LTS activities to identify best practices
- Review of cleanup to LTS transition practices at U.S. Department of Defense sites
- Review of studies regarding LTS developed by external organizations.



Based on the benchmarking efforts, the key lessons learned identified to support the development of the Hanford LTS Program include the following:

- The importance of feedback from Tribal Nation representatives, advisory boards, and regulators
- The importance of planning for LTS significantly ahead of the completion of cleanup, working in close partnership with the cleanup projects to clearly define the completion of cleanup and ensure a smooth transition to LTS
- Active, dynamic management, particularly to ensure the remedies remain protective over the long-term and that the institutional controls continue to perform successfully to meet their objectives
- A well-prepared and comprehensive long-term surveillance and maintenance plan will help to ensure continued protection of human health and the environment
- The collection and management of documents describing the cleanup decisions and LTS requirements immediately upon completion of cleanup and to ensure preservation and accessibility of these documents for the long-term.

The lessons learned through these benchmarking efforts have served as key input for the development of this Hanford LTS Program Plan and were considered in the development of the transition process for land management responsibilities and in the development of the Hanford LTS Program responsibilities. Furthermore, the Tribal Nations and Hanford Advisory Board have been engaged to provide feedback in the development of the Hanford LTS Program Plan.

Reflecting the evolving nature of LTS, the Hanford LTS Program will be actively managed and designed to be flexible and adaptable. Areas of improvement will be identified, reviewed, evaluated, and incorporated into the Hanford LTS Program, as applicable.

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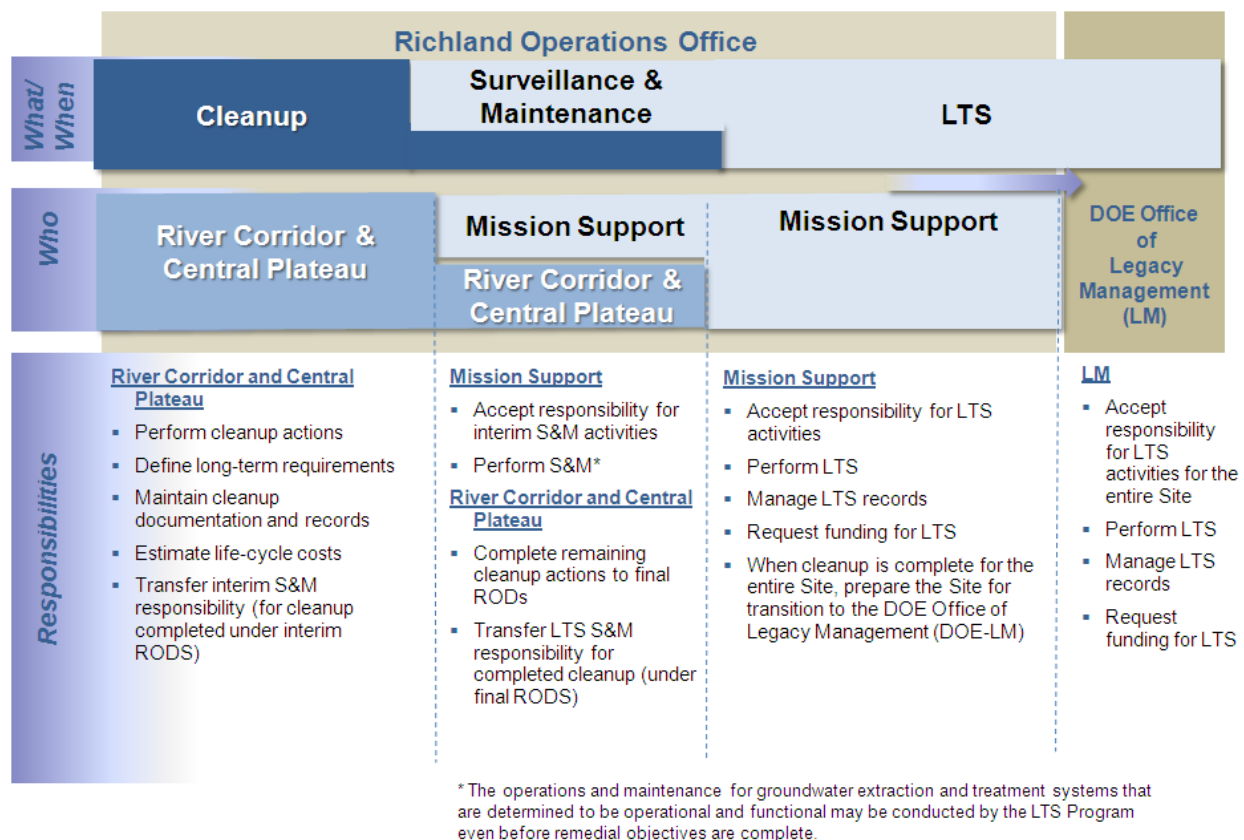
### 3.0 TRANSITION OF LAND MANAGEMENT RESPONSIBILITIES

This chapter identifies when the cleanup projects or Hanford LTS Program is responsible for the transition activities, provides a description of the transition process, and presents information on the development of a transition schedule.

#### 3.1 RESPONSIBILITIES

Figure 3-1 summarizes the responsibilities of the cleanup projects and the Hanford LTS Program for the transition process. The cleanup projects are responsible for performing the cleanup actions through the regulatory completion. Figure 1-2 defines when cleanup ends and LTS begins. Cleanup responsibilities include developing the final ROD and implementing the remedies, even while the Hanford LTS Program may be conducting interim S&M activities. The Hanford LTS Program is responsible for the post-cleanup completion requirements (e.g., monitoring remedies, managing resources), as well as interim S&M activities that may be required prior to the development of the final RODs.

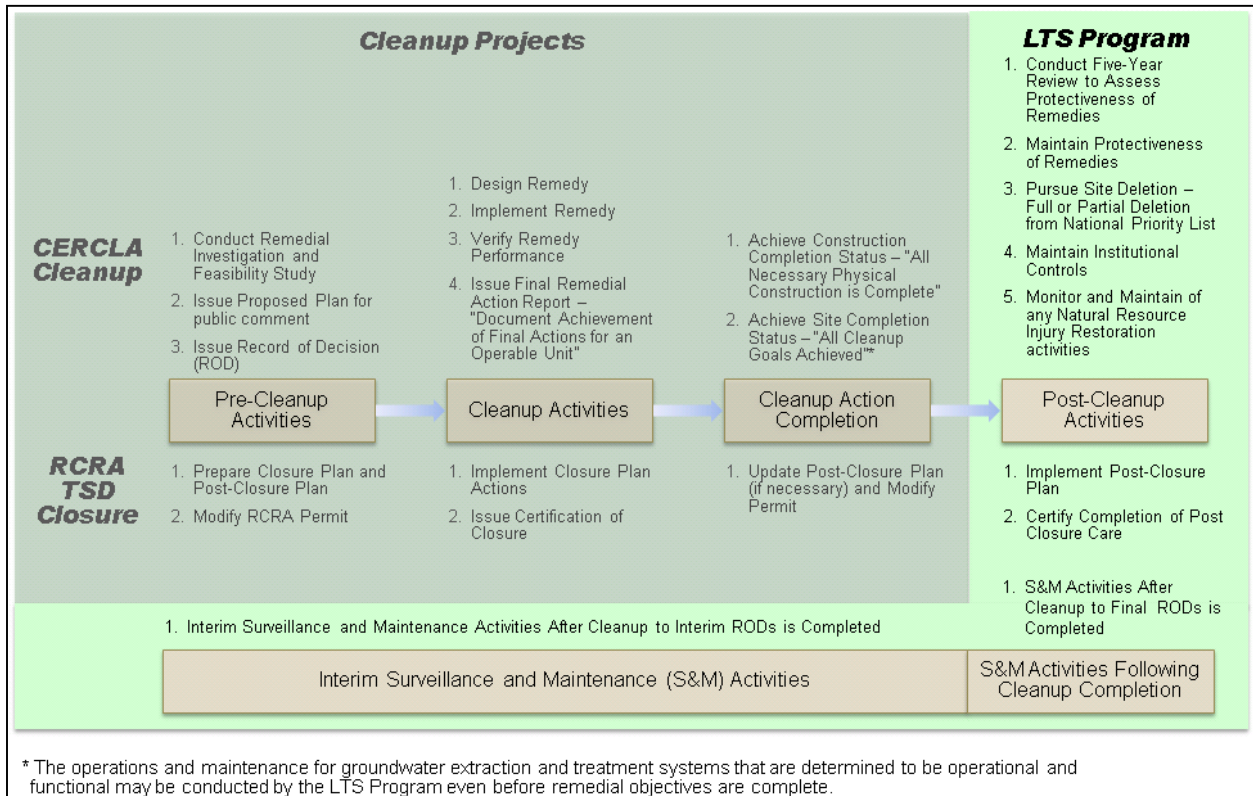
Figure 3-1. Program Responsibilities During Transition.



To further clarify the distinction between the cleanup projects and Hanford LTS Program responsibilities from a regulatory basis, Figure 3-2 shows the specific steps towards cleanup completion and the transition of each ROD Area to the Hanford LTS Program. Figure 3-2 is based on the information in Figure 1-2, with modifications to more clearly show the distinction

between cleanup activities and LTS activities for interim S&M. As described in Chapter 2.0, interim S&M activities for some ROD areas will begin prior to the development of the final ROD. The Hanford LTS Program will be responsible for conducting those interim S&M activities for ROD areas transitioned to the Hanford LTS Program.

Figure 3-2. Responsibilities of the Cleanup and Hanford LTS Programs.



Sources: DOE, 2008, *CERCLA Remedial Action Site Closure Guidance*.  
 EPA/540/R-98/016, *Close Out Procedures for National Priorities List Sites*.  
 Ecology et al., 1989, *Hanford Federal Facility Agreement and Consent Order*.  
 TSD = treatment, storage, and disposal.

### 3.2 TRANSITION PROCESS

The following are the steps for transitioning the responsibilities for interim S&M to the Hanford LTS Program (some of these steps may be taken concurrently).

1. The cleanup projects will identify that active footprint reduction cleanup is complete, per the applicable interim RODs, for a particular ROD area.
2. The Hanford LTS Program will work with the cleanup projects to identify and analyze the life-cycle S&M costs, including the scope definition, resource loading, and estimated cost profile.
3. RL will request the necessary funding to conduct LTS S&M activities as part of its annual congressional appropriation.

4. RL will provide direction to the cleanup projects and Hanford LTS Program contractors to transfer responsibility of interim S&M activities for ROD areas from cleanup to LTS.
5. The cleanup projects and Hanford LTS Program will then complete and approve the interim S&M checklist, which includes the transfer of all information required to conduct S&M and meet the applicable regulatory requirements to the interim ROD. The information from the interim S&M checklist will be documented in a turnover package, as described in Section 2.4.

Once the final ROD is issued for a particular ROD area, the transition of the final ROD areas to the Hanford LTS Program will include the following steps.

1. The cleanup projects will take steps to implement the final ROD cleanup completion activities as necessary.
2. The cleanup projects will identify that cleanup is complete.
3. The Hanford LTS Program will work with the cleanup projects to identify and analyze the Hanford life-cycle LTS costs.
4. RL will request the necessary funding to conduct LTS activities as part of its annual congressional appropriation.
5. The cleanup projects and Hanford LTS Program will then complete and sign-off on the final transition checklist, which includes the transfer of all information required to manage the area for the long-term and to meet the applicable regulatory requirements applicable to the final ROD.

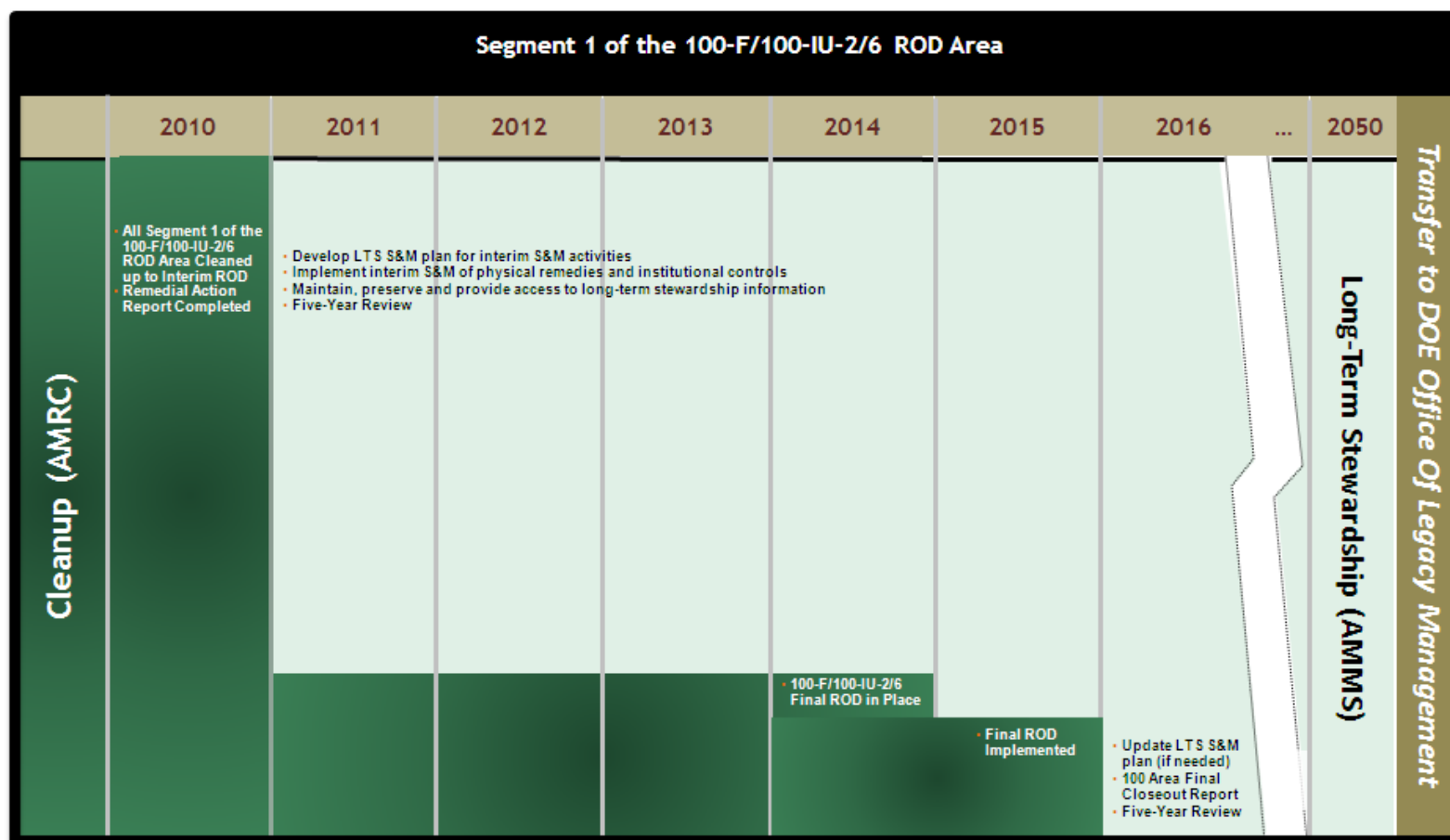
### **3.3 TRANSITION SCHEDULE**

The schedule for the transition of land management responsibilities from the cleanup projects to the Hanford LTS Program is currently under development by RL and it will continue to be updated as cleanup activities progress. Examples of the information that will be identified as the schedule is developed include the following:

- ROD area description
- List of applicable cleanup decision documents (e.g., interim or final RODs)
- Description of the cleanup end state
- Identification of LTS requirements
- Anticipated date of transition of interim S&M activities to the Hanford LTS Program (when active footprint reduction will be completed)
- Anticipated date of full transition of land management responsibility to the Hanford LTS Program (when cleanup to the final ROD will be completed).

Figure 3-3 is an example of the schedule for the 100-F/IU-2/IU-6 ROD Area.

Figure 3-3. Example Schedule of the Transition for the Long-term Stewardship of the 100-F/IU-2/IU-6 ROD Area.



Note: Dates shown in this schedule are conceptual only; they do not necessarily reflect the actual schedule.

## **4.0 LONG-TERM STEWARDSHIP PROGRAM IMPLEMENTATION**

The Hanford LTS Program will be managed in an active way that enables it to meet the LTS objectives and associated requirements. The Hanford LTS Program will ensure the continued protectiveness of the remedies and the environment for those geographic areas of the Hanford Site transitioned to its responsibility, while remaining adaptable to lessons learned, advice obtained, and nationwide experience gained during the LTS implementation. The Hanford LTS Program will be an active component to protect and manage the resources within the framework of the Comprehensive Land-Use Plan and in accordance with the requirements of the applicable cleanup decision documents.

This chapter describes the key activities of the Hanford LTS Program. As described in Chapter 2.0, the activities have been identified based on a review of LTS activities at other sites through the DOE benchmarking efforts.

### **4.1 CONDUCT ADMINISTRATIVE ACTIVITIES**

Management of the Hanford LTS Program will be the responsibility of the Office of Assistant Manager for Mission Support (AMMS) organization within RL. AMMS executes its LTS responsibilities within the framework of the RL organizational structure (e.g., budget, finance, legal support), and LTS activities through the Mission Support Contract.

AMMS will be responsible for ensuring that Hanford LTS Program activities comply with all environmental laws, regulations, and procedures applicable to the work being performed under its contract with DOE. This includes, but is not limited to, compliance with applicable federal, state, and local laws and regulations; interagency agreements, such as the Tri-Party Agreement, consent orders, consent decrees, and settlement agreements between DOE and regulatory agencies; and DOE orders.

The LTS activities will be implemented using a flow down of requirements from the Hanford LTS Program Plan to internal DOE procedures and the contractors via prime contract direction and procedures. RL will issue letters of direction to the cleanup projects and Hanford LTS Program contractors to initiate the transfer of ROD areas from cleanup to LTS. Turnover packages will be used to ensure all transition steps have been taken, that the post-cleanup requirements have been fully identified, and that the corresponding LTS information has been transitioned from the cleanup projects contractor to the Hanford LTS Program contractor. RL also will integrate existing site procedures (e.g., safety, budget, finance) required to implement LTS responsibilities and assigned actions.



## 4.2 SURVEILLANCE AND MAINTENANCE OF PHYSICAL REMEDIES AND INSTITUTIONAL CONTROLS

The Hanford LTS Program will conduct S&M, as required by applicable cleanup decision documents, of the physical remedies and institutional controls to ensure continued protection of human health and the environment. S&M of the physical remedies and institutional controls will enable RL to verify that the remedies remain effective, the institutional controls remain in place, and that human health and the environment are protected. S&M includes the following activities.

- **Maintenance and oversight** - Maintenance and oversight activities are performed on physical components (e.g., physical remedies, fences) to keep them functioning as designed. An example is the S&M required for the interim safe storage of the reactors. The Hanford LTS Program responsibility also may include the operations and maintenance of groundwater extraction and treatment systems that are operational and functional.
- **Required surveillances and inspections** - LTS surveillance and inspection activities include observing real-time activities to verify conformance of the physical remedies and institutional controls with their specified regulatory requirements.
- **Emergencies** - This includes responding to unexpected conditions and emergencies, and is detailed in Section 4.7.

There is a Sitewide institutional controls plan that describes the institutional controls required by cleanup decision documents. When a new cleanup decision document listing institutional control requirements is issued, RL is required to update the institutional controls plan. RL evaluates the implementation and effectiveness of institutional controls annually, taking corrective actions to address any deficiencies that may be identified. The Hanford LTS Program will be responsible for the S&M of institutional controls for those remedies that are completed to interim and final RODs.

The Hanford LTS Program will manage and implement its activities through an LTS S&M plan that will be developed under the Mission Support Contract for each ROD area as it is transitioned to the Hanford LTS Program. The LTS S&M plan for each ROD area will address the LTS activities identified in this chapter and will identify the post-closure requirements particular to the ROD area.

## 4.3 CONDUCT CERCLA FIVE-YEAR REVIEWS

Conducting a CERCLA five-year review is required to assess the protectiveness of remedial actions where hazardous substances, pollutants, or contaminants remain and are above levels that allow for unlimited use and unrestricted exposure. For waste sites where cleanup has been completed, the review is an evaluation of the performance of the remedy to ensure it remains protective of human health and the environment.

CERCLA requires that the lead agency review all remedial actions taken that resulted in hazardous substances, pollutants, or contaminants remaining at a site above levels that allow for unlimited use and unrestricted exposure, no less often than every five years after the initiation of the selected remedial action. The review will determine for waste sites where cleanup has been completed if the measures taken are still successful in protecting the worker, the public, and the

environment. The five-year review also evaluates current and future protectiveness relative to remedial actions that are ongoing.

For waste sites where cleanup has been completed, the review may conclude that the remedy is protective and that no further action is necessary. Alternatively, the review may conclude that further evaluation is needed, may recommend certain actions to improve the efficiency of a remedy, or may recommend changes in the remedy. This review process can also provide a forum for introducing new information and how changes in assumptions will be managed in the future. If cleanup decisions are required to be revisited, the applicable regulatory process is to be followed.

RL will conduct the CERCLA five-year reviews and submit the reports to the U.S. Environmental Protection Agency (EPA) for its review of the protectiveness determinations made by RL.

The scope of the review is limited and does not include all of the activities covered by the Tri-Party Agreement. In addition to CERCLA, the Tri-Party Agreement addresses regulated RCRA units and past practice units regulated under RCRA or CERCLA. The five-year review covers operable units listed as past-practice units under CERCLA and those past-practice units under RCRA but being remediated under CERCLA. Active treatment, storage, or disposal units regulated under RCRA, such as the tank farms, are not part of this review.

EPA completed the first five-year review in 2001. DOE completed the second in 2006. The Hanford LTS Program will conduct the next five-year review, with input from the cleanup projects for ongoing remedial actions. This third five-year review is scheduled for completion in 2011.

#### **4.4 CONDUCT ENVIRONMENTAL MONITORING OF THE REMEDIES**

LTS activities include environmental monitoring regarding the performance of the remedies, if such monitoring is stipulated in the cleanup decision documents or is required by federal and state requirements and regulations. Monitoring is conducted to verify that the remedies remain effective and that contaminant migration is prevented to protect human health and the environment. Activities may include monitoring the performance of groundwater extraction and treatment systems that are operational and functional and monitoring ecological receptors (e.g., wildlife, vegetation).

#### **4.5 PROTECT AND MANAGE SITE RESOURCES**

The Hanford Site includes significant resources (e.g., endangered, protected, listed species) managed under applicable federal and state laws, executive orders, Tribal Nation treaties, DOE orders, the Comprehensive Land-Use Plan, and Hanford Site procedures.

Site resources are managed and protected at the Hanford Site through the use of resource management plans and area management plans within the framework of the Comprehensive Land-Use Plan. These resource management plans have been developed to protect and provide the policies, goals, and objectives for the management of the Site's biological, natural, and cultural resources. These plans address the ongoing surveillance, protection, and controlled use of the Site's resources. The Hanford LTS Program will be an active component to work with the

resource and environmental monitoring programs to ensure the ongoing protection of the Site resources.

#### **4.6 MANAGE LTS INFORMATION**

Information management is a critical component required to ensure that the Hanford LTS Program will have ready access to specific and accurate information about the Site, the cleanup activities, and the associated requirements, including its regulatory obligations. It is also important for LTS information to be accessible to those who live and work in the surrounding communities and to those responsible for community planning and development.

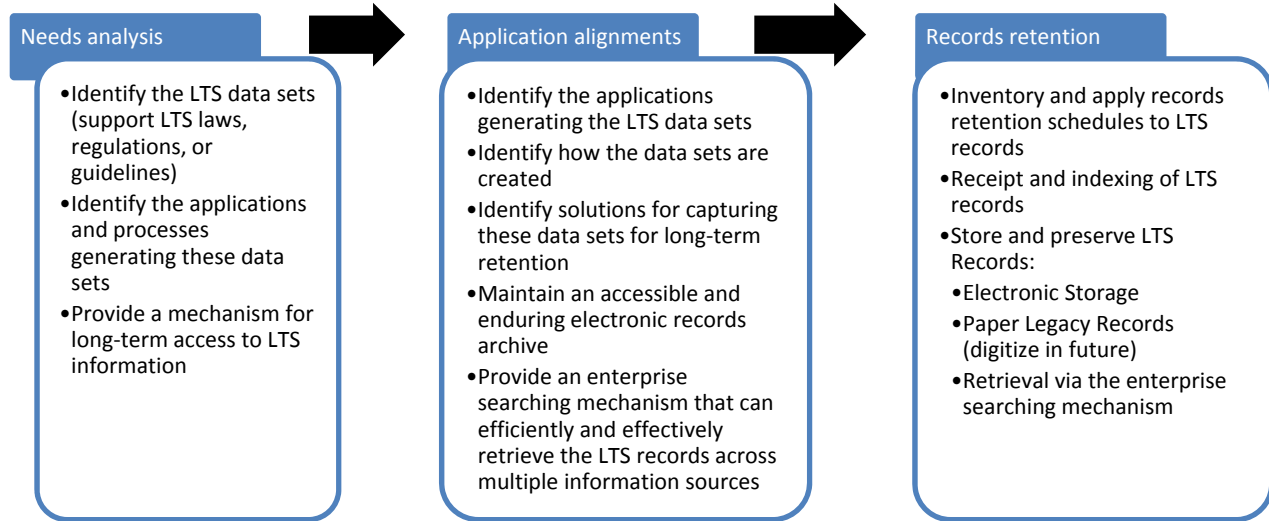
The Hanford LTS Program will help to ensure that the requisite information generated during the cleanup mission, necessary to support LTS and required under the regulatory process, is preserved and available for the future in a timely, cost-effective, and understandable manner. At the Hanford Site, a massive amount of data is generated in support of the cleanup effort. Also, one of the key lessons learned from LTS experiences at other sites is the importance of maintaining and preserving LTS information in an accessible format. To address these issues, the Hanford LTS Program will take the following steps.

- The transition checklist will be used to ensure the transition of the information necessary to support LTS activities from the cleanup projects to the Hanford LTS Program. Appendix A contains an example of the transition checklist.
- RL will incorporate the management of the information needed to support LTS activities into the overall Hanford Site information management program. RL will maintain remediation and post-cleanup data and records to ensure the information needed to support LTS is accessible, retrievable, and managed according to applicable regulatory requirements.

Figure 4-1 shows RL's strategic approach to ensure LTS information is collected, maintained, and retrievable in a manner consistent with RL's overall information management plan. The strategic approach reflects the significant amount of LTS-related information currently managed in multiple media and in multiple data sources. The LTS information management approach will support the ability of current and future generations to access and understand the Hanford Site's LTS information. The LTS information management approach will be integrated with Hanford Site information management plans and will include the following:

- A needs analysis
- The alignment of applications containing LTS information
- The migration of data sets to ensure readability as information management technologies change over time
- The development of search engines that allow access to all pertinent Site data.

Figure 4-1. LTS Information Management Strategic Approach.



#### 4.7 EMERGENCIES, CONTINGENCY PLANNING, AND CORRECTIVE ACTIONS

LTS activities include responding to unexpected conditions and emergency situations. Examples of such situations include the deterioration of a physical control beyond predicted levels, extreme weather conditions, and the identification of previously undiscovered contamination.

Emergency measures are the actions DOE will take in response to unusual injury or disruption of land in LTS that threatens or compromises safety or security. Certain circumstances may arise that require implementation of contingency actions.

Site inspections, monitoring, and maintenance activities conducted as part of the S&M activities are designed to identify potential problems before they develop into a need for corrective action. However, in the unlikely case that extreme natural events, vandalism, or unanticipated events result in a need for corrective actions, DOE will notify EPA, the Washington State Department of Ecology (Ecology), the Washington Department of Health, and other affected parties as soon as an emergency situation is known to exist.

DOE will notify the appropriate regulatory agencies if regulatory thresholds are exceeded. Any releases of hazardous substances in excess of quantities reportable under CERCLA will be immediately reported to the National Response Center and EPA. Spills or discharges of hazardous substances or dangerous wastes to the environment will be reported to EPA or the state in accordance with applicable state or federal law.

DOE's response measures to such events may include modifying processes, such as making adjustments to the type and frequency of monitoring and maintenance activities, modifying existing controls, establishing new controls, and initiating new cleanup actions.

The Hanford LTS Program ensures that emergency management program and occurrence reporting requirements are established in accordance with DOE/RL-94-02, *Hanford Emergency Response Plan*, and appropriate DOE orders (e.g., DOE O 150.1, *Continuity Programs*; DOE O 151.1C, *Comprehensive Emergency Management System*; DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*).

If previously undiscovered contamination for land in the Hanford LTS Program is identified, RL will take the following steps.

1. Address emergency and immediate safety needs.
2. Notify the appropriate entities, including the regulatory agencies (e.g., EPA, Ecology).
3. Conduct an initial investigation to assess the type of discovery, the scope and geographical extent of the discovery, and the potential hazards associated with the discovery.
4. Develop and implement response measures, following the appropriate approved regulatory process.

During LTS, DOE retains liability as the potential responsible party, as required under CERCLA.

#### **4.8 MANAGE POST-CLEANUP COMPLETION INFRASTRUCTURE**

Post-cleanup completion infrastructure must be maintained to ensure sufficient access and support remains for S&M activities. This infrastructure includes Site roads, facilities, and utilities. It also includes services required to ensure protection of government property (e.g., emergency response, waste management, power, water).

The Hanford LTS Program will ensure that the minimum infrastructure required to support its activities will be provided and maintained. Current land management and potential future land uses will be addressed through the framework of the Comprehensive Land-Use Plan. The Hanford LTS Program will assist in the strategic planning process for Site infrastructure to ensure the necessary and sufficient infrastructure is available to support LTS.

#### **4.9 CONDUCT MONITORING AND MAINTENANCE OF COMPLETED NATURAL RESOURCE INJURY RESTORATION PROJECTS**

Although the Natural Resource Injury Assessment process is separate from the Hanford LTS Program, the Hanford LTS Program's activities will include the monitoring and maintenance of completed natural resource injury restoration projects.

#### **4.10 ENSURE THE SAFETY AND HEALTH OF LTS WORKERS**

The safety and health of LTS workers must be protected. Providing a safe working environment for all workers and maintaining high standards of performance that comply with all applicable regulations and requirements for worker protection are important. The Integrated Safety Management System (ISMS) at the Hanford Site will extend to all LTS activities.

#### **4.11 PROVIDE QUALITY ASSURANCE**

Quality assurance for environmental monitoring activities includes programmatic and overall project quality assurance to ensure such activities meet or exceed the applicable requirements. This includes environmental monitoring activities such as field sampling, data analysis, and equipment calibration. The LTS Program will manage the programmatic activities necessary to perform and assess such work.

#### **4.12 MANAGE AND BUDGET NECESSARY FUNDING**

Managing the LTS costs and obtaining the budget necessary to fund LTS are important activities. RL will request the necessary funds to conduct LTS activities through the DOE budget process. RL will obtain such funds as part of its annual congressional appropriation. During the transition of ROD areas to LTS, the cleanup projects and the Hanford LTS Program will be responsible for the costs of their respective transition activities.

LTS cost estimates will initially be developed by the cleanup projects, based on the requirements of the applicable cleanup decision documents, and updated by the Hanford LTS Program after cleanup is completed. The Hanford LTS Program will use the following general approach to develop its cost estimates as each ROD area is transitioned to the LTS Program.

1. The scope and schedule of LTS activities for the ROD area will be defined based on the requirements in the applicable cleanup decision documents.
2. The corresponding work breakdown structure then will be developed.
3. The costs will be estimated using project management estimating tools and incorporating knowledge gained from LTS activities at the Hanford Site and other DOE sites.

After it has been implemented, the Hanford LTS Program will track and collect data regarding costs. Data may be made available to the cleanup projects to better understand potential long-term costs.

#### **4.13 INTERFACE WITH OTHER HANFORD SITE PROGRAMS**

Interfacing with other Hanford Site programs will be performed to ensure a smooth transition from cleanup to LTS. In addition, consulting with the Tribal Nations and interfacing with EPA, Ecology, state and local governments, and stakeholders will be key activities.

The Hanford LTS Program will work closely with the cleanup projects to develop the schedule for transition of areas of the Hanford Site, including interim S&M activities. This will include the completion of the turnover package that documents the transition of the areas. To further support a smooth transition from the cleanup projects, the Hanford LTS Program may develop associated site procedures regarding the turnover package, the transition schedule, and the criteria for transitioning ROD areas from the cleanup projects to the Hanford LTS Program. Full transition to the Hanford LTS Program will occur upon completion of the cleanup to the final RODs.

The Hanford LTS Program will provide feedback to the cleanup projects regarding implementation experiences, such as performance and cost, as the Hanford LTS Program is conducted over time.

Other interfaces with the cleanup projects will include working with the groundwater and environmental monitoring programs to define which organization will be responsible for the long-term treatment and monitoring and for specific monitoring responsibilities. Also, as the LTS Program conducts the CERCLA five-year reviews, the program will work closely with the cleanup projects regarding the review of ongoing remedial actions.

#### 4.14 INTERFACE WITH EXTERNAL ENTITIES

Interfacing with external entities that operate at the Hanford Site, including the U.S. Fish and Wildlife Service (USFWS), US Ecology, Energy Northwest, Bonneville Power Administration, and the Laser Interferometer Gravitational Wave Observatory (LIGO), will also be a key activity. Access agreements, easements, institutional controls, and land-use restrictions are a vital component of the post-cleanup requirements, as well any existing LTS-type requirements included in permits, agreements, or leases. As stated earlier, current land management and potential future land uses will be addressed through the framework of the Comprehensive Land-Use Plan. The Hanford LTS Program will be responsible for ensuring LTS requirements are included in future real estate instruments (e.g., lease, license, permit) with external entities located on the Hanford Site.

The USFWS is responsible for the management of a significant portion of the National Monument. The National Monument encompasses approximately 789 km<sup>2</sup> (195,000 ac), of which approximately 672 km<sup>2</sup> (166,000 ac) are currently managed by the USFWS as the Saddle Mountain National Wildlife Refuge. The Washington State Department of Fish and Wildlife administers 3.2 km<sup>2</sup> (800 acres) of the National Monument through an agreement with DOE. DOE administers the remaining acreage and currently retains primary ownership or control of all acreage. Any LTS responsibilities resulting from DOE cleanup within the area of the National Monument are the responsibility of DOE through the Hanford LTS Program, unless otherwise agreed to by DOE and the USFWS.

US Ecology, Inc. operates a commercial, low-level waste disposal facility, licensed by Ecology. The land is under lease from DOE to the State of Washington and subsequently sub-leased to US Ecology, Inc. The disposal facility accepts waste from two state agreements: the Northwest Compact (i.e., Washington, Idaho, Oregon, Montana, Wyoming, Utah, Alaska, Hawaii) and the Rocky Mountain Compact (i.e., Colorado, Nevada, New Mexico). These agreements were established to manage radioactive waste from nuclear power plants and other commercial facilities within the associated regions. This permitted facility will continue to operate until completion of operations, when it will be closed-out in accordance with its lease and commercial low-level waste state licensing requirements.

Energy Northwest operates the Columbia Generating Station, a commercial nuclear power plant located north of the 300 Area, and is a joint operating agency of the State of Washington. Any LTS responsibilities resulting from RL cleanup of DOE's waste sites within the proximity of the power plant will be the responsibility of DOE through the Hanford LTS Program.

Bonneville Power Administration is responsible for the operation of the electric power substations and transmission lines that cross the Hanford Site and for all operations, maintenance, and new construction for their systems on the Hanford Site. Bonneville Power Administration carries out these operations under a permit from DOE, which will be in effect until terminated. Any LTS responsibilities resulting from RL cleanup of DOE's waste sites within the proximity of the substations and transmission lines will be the responsibility of the DOE through the Hanford LTS Program.

LIGO is an onsite facility designed to observe gravitational waves of cosmic origin. The LIGO houses laser interferometers, consisting of mirrors suspended at each of the corners of a gigantic L-shaped vacuum system, measuring 4 km (2.5 mi) on a side. LIGO is operated by the California

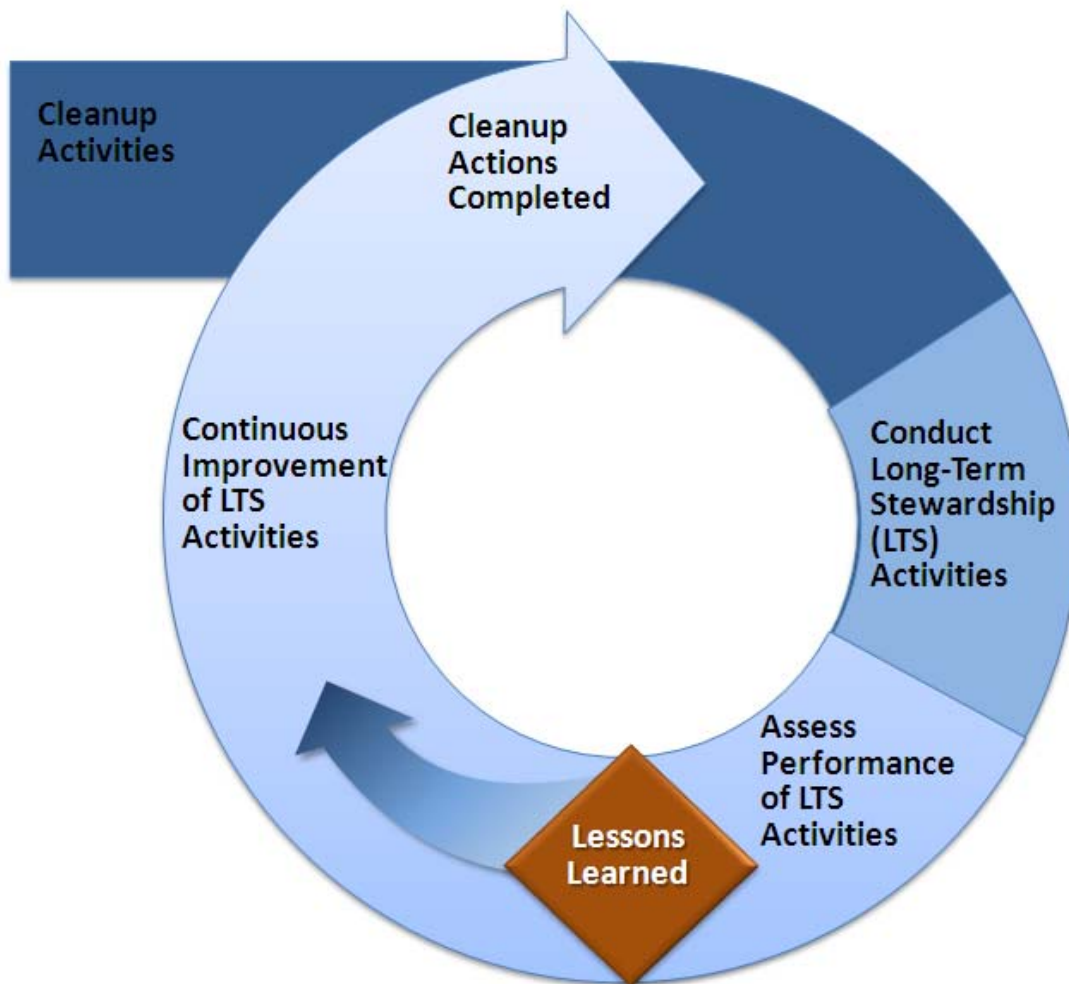


Institute of Technology and the Massachusetts Institute of Technology for the National Science Foundation. Any LTS responsibilities resulting from DOE cleanup within the proximity of LIGO will be the responsibility of the DOE through the Hanford LTS Program.

#### 4.15 CONTINUOUS PROCESS IMPROVEMENT

As a dynamic, active, and flexible program, the Hanford LTS Program will address issues as they arise and incorporate lessons learned (Figure 4-2). LTS activities will include a continual evaluation of the performance of LTS and of ways to improve the LTS process. Improvements will be identified through efforts such as continued benchmarking efforts with DOE and other sites. This will include LM sites, other federal government sites (e.g., Department of Defense sites), and the Hanford Site.

Figure 4-2. Dynamic Nature of the Hanford LTS Program.



Advances in science and technology will be monitored and deployed where appropriate to increase the effectiveness and reduce the costs of LTS activities. LTS activities can benefit from the latest scientific knowledge and the use of advanced technologies in the following areas:

- Monitoring technologies used to evaluate the effectiveness of institutional controls and engineered barriers
- Technologies related to resource management to support the preservation of biological, natural, and cultural resources
- Information management technologies used to preserve LTS information.

Science and technology will continue to advance over the life of the stewardship. The Hanford LTS Program will evaluate such advances for their potential to increase the efficiency and effectiveness of LTS activities.

## 5.0 REFERENCES

- 64 FR 61615, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP EIS)," *Federal Register*, Vol. 64, No. 218, pp. 61615-61625, November 12, 1999.
- 73 FR 6450-01-P, "Amended Record of Decision for the Hanford Comprehensive Land-Use Plan Environmental Impact Statement," *Federal Register*, Vol. 73, No. 188, pp. 55824-55826, September 26, 2008.
- Atomic Energy Act of 1954*, 42 USC 2011, et seq.
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, 42 USC 9601, et seq.
- Department of Energy Organization Act of 1977*, 42 USC 7112, et seq.
- DOE, 2008, *CERCLA Remedial Action Site Closure Guidance*, U.S. Department of Energy, Washington, D.C.
- DOE M 231.1-2, *Occurrence Reporting and Processing of Operations Information*, U.S. Department of Energy, Washington, D.C.
- DOE O 150.1, *Continuity Programs*, U.S. Department of Energy, Washington, D.C.
- DOE O 151.1C, *Comprehensive Emergency Management System*, U.S. Department of Energy, Washington, D.C.
- DOE O 430.1B, *Real Property Asset Management*, Change Notice 1, U.S. Department of Energy, Washington, D.C.
- DOE O 450.1A, *Environmental Protection Program*, U.S. Department of Energy, Washington, D.C.
- DOE P 430.1, *Land and Facility Use Planning*, U.S. Department of Energy, Washington, D.C.
- DOE/EIS-0222-F, 1999, *Final Hanford Comprehensive Land-Use Plan - Environmental Impact Statement*, U.S. Department of Energy, Washington, D.C.
- DOE/EIS-0222-SA-01, 2008, *Hanford Comprehensive Land-Use Plan and Environmental Impact Statement Supplement Analysis*, United States Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/EM-0563, 2001, *Report to Congress on Long-Term Stewardship*, 2 vols. U.S. Department of Energy, Washington, D.C.
- DOE/RL-94-02, 2000, *Hanford Emergency Response Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-96-32, 1996, *Hanford Site Biological Resources Management Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.
- DOE/RL-98-10, 2003, *Hanford Cultural Resources Management Plan*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2001-41, 2009, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions*, Rev. 4, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2003-39, 2003, *Hanford Long-Term Stewardship Program and Transition: Preparing for Environmental Management Cleanup Completion*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2009-10, 2010, *Hanford Site Cleanup Completion Framework*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2009-81, 2009, *Central Plateau Cleanup Completion Strategy*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2010-18, 2010, *Hanford Site Active Cleanup Footprint Reduction*, Rev. 0, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Ecology, EPA, and DOE, 1989, *Hanford Federal Facility Agreement and Consent Order*, 2 vols., as amended, Washington State Department of Ecology, U.S. Environmental Protection Agency, and U.S. Department of Energy, Olympia, Washington.

EPA/540/R-98/016, 2000, *Close Out Procedures for National Priorities List Sites*, OSWER Directive 9320.2-09A-P, Office of Emergency and Remedial Response, U.S. Environmental Protection Agency, Washington, D.C.

*National Defense Authorization Act for Fiscal Year 1997*, Public Law 104-201, Section 3153.

*National Environmental Policy Act of 1969*, 42 USC 4321, et seq.

*Resource Conservation and Recovery Act of 1976*, 42 USC 6901, et seq.

**APPENDIX A**

**LONG-TERM STEWARDSHIP PROGRAM TRANSITION CHECKLIST EXAMPLE**

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## APPENDIX A

### LONG-TERM STEWARDSHIP PROGRAM TRANSITION CHECKLIST EXAMPLE

#### Section 1. Real Property Information

- Have the description and location of the ROD area been properly defined and documented?
- Have all real property records been identified, located, and in good order?
- Have restrictions on the property been codified appropriately?
- Have all legislative and executive constraints on this land (e.g., the establishment of the Hanford Reach National Monument) been identified?

#### Section 2. Cleanup History

- Has there been an environmental site assessment conducted for this ROD area and have the results been documented?
- Have the determinations of prior hazards (e.g., PCBs, asbestos, USTs) been made?
- Have the completed cleanup steps been documented as required and does the documentation adequately explain both the cleanup decisions and the resulting actions?
- Have activities completed under a Natural Resource Injury Assessment (if any) been documented and identified?
- Is previous Site characterization data and NEPA documentation available?
- Is the TPA Administrative Record complete and retrievable?

#### Section 3. Conditions at Transition

- Is the condition of the components controlling post-cleanup risk and/or long-term remediation actions (e.g., physical remedies, institutional controls, groundwater monitoring stations) adequately validated and documented?
- Are the remaining potential contamination risks adequately identified and located using closure and sampling reports, the WIDS and other databases?

#### Section 4. Post-Cleanup Requirements

- Have the following set of controls and post-cleanup requirements been identified?
  - Physical remedies
  - Institutional controls
  - Performance monitoring
  - Operations and maintenance of groundwater extraction and treatment systems
  - Waste disposal programs
  - Contingency plans
  - Permits
  - Emergency procedures
  - Regulatory reviews and oversight
- Have the long-term requirements and commitments made by DOE regarding the property been identified (i.e., MOAs, NEPA RODs)?

- Have the required monitoring and maintenance activities for restoration projects identified through the Natural Resource Injury Assessment process (if any) been completed?

#### Section 5. Infrastructure and Essential Services

- Have the long-term needs for infrastructure been evaluated? This includes facilities and structures, utility systems, and services (e.g., safeguards and security, fire protection, emergency preparedness).
- Have existing infrastructure elements been identified, including the following?
  - Groundwater wells not used for monitoring purposes (e.g., potable wells, abandoned wells, other wells)
  - Buildings and facilities
  - Utilities
  - Infrastructure services
  - Abandoned structures (e.g., ancillary structures, fencing, miscellaneous equipment, other abandoned structures)?

#### Section 6. Resource Management

- Is information retrievable and adequate on the biological resources for this ROD area?
- Have future biological resource management requirements been identified?
- Is adequate protection provided for sensitive cultural resource information?
- Is additional cultural resource information retrievable and adequate?
- Have future cultural resource management requirements been identified?
- Has the consultative process for each Tribal Nation been identified and followed, per DOE policy?
- Is information retrievable and adequate on the natural resources for this ROD area?
- Have future natural resource management requirements been identified?
- Is information available regarding previous Sitewide monitoring activities that pertain to this ROD area?
- Have future requirements for environmental monitoring on this ROD area been identified?

#### Section 7. Business and Administration

- In addition to the information captured through other checklist items, are the records regarding the following complete, indexed properly, and managed properly: contract information, personnel and medical, and litigation and financial information system?
- Are the records properly scheduled, considering the long-term needs of LTS?
- Have records considered to be “quality affecting” records been noted as such?
- Has the baseline for managing the property been identified and estimated?
- Has funding for LTS activities been requested?