



## Tri-Party Agreement

U.S. Department of Energy  
Washington State Department of Ecology  
U.S. Environmental Protection Agency

# 2012 Hanford Lifecycle Scope, Schedule and Cost Report

February 2012

The Hanford Lifecycle Scope, Schedule and Cost Report (Lifecycle Report) is a milestone requirement (M-036-01) under the *Hanford Federal Facility Agreement and Consent Order*, commonly referred to as the Tri-Party Agreement (TPA). The Lifecycle Report describes the scope, schedule and cost for completion of the Hanford Site cleanup mission. The report reflects all cleanup work that must be completed by both of the U.S. Department of Energy (DOE) Environmental Management Project offices [Richland Operations Office (RL) and Office of River Protection (ORP)] to fully meet all applicable obligations under the TPA, the Consent Decree in *Washington vs. DOE*, the *Resource Conservation and Recovery Act of 1976 (RCRA)* and *Hazardous Waste Management Act*.

### The 2012 Lifecycle Report Does:

- Provide project scope, schedule and cost from Fiscal Year (FY) 2012 – FY 2090 for both DOE Hanford offices, and will be modified annually;
- Show the remaining estimated cleanup cost for projects;
- Include post closure long-term stewardship (LTS)/ institutional controls, safeguards and security, pension costs, community and regulatory agency support;
- Include current regulatory decisions, scope, schedule, cost estimate revisions;
- Overlap with the funding approval process for the current budget execution year and with the DOE-Headquarters and Office of Management and Budget (OMB) review of funding requests for the next fiscal year;
- Present data at the Project Baseline Summary (PBS) level one and two detail in the report and to level three detail in Appendix D (cost and schedule);
- Present cost estimate alternative analyses for cleanup actions associated with tank waste treatment;
  - Baseline Case shows how the Waste Treatment and Immobilization Plant (WTP), together with a second low-activity waste (LAW) Vitrification Facility and the potential contact-handled transuranic (CH-TRU) tank waste treatment process, could treat the Hanford tank waste by 2043, with approximately 25 years of WTP operations;
  - Starting with the Baseline Case, each of the 9 scenarios change some of the underlying assumptions in order to evaluate the impacts of those changes upon the tank waste treatment mission.

### The 2012 Lifecycle Report Does Not:

- Include DOE Office of Science funded work, Natural Resource Damage Assessment liabilities, or leased lands such as U.S. Ecology;
- Make or replace any cleanup decisions, nor is it a *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* or RCRA decision document;
- Substitute for, nor preempt, the cleanup decision processes as set forth in the TPA.

DOE, U.S. Environmental Protection Agency (EPA) and Washington State Department of Ecology (Ecology) shall attempt to reach agreement on the Lifecycle Report so it can serve as an agreed upon foundation for preparing budget requests and for informational briefings to affected Tribal Governments, and Hanford stakeholders. The report shall also serve as the basis for annual discussions with the EPA, Ecology on how and when DOE-RL and DOE-ORP will complete cleanup, and how milestone changes and adjustments will affect lifecycle scope, schedule and cost.

The 2012 Lifecycle Report information reflects scope, schedule and cost status that is current as of August 31, 2011, and the costs shown have been escalated for inflation.

# Milestone Requirements

## Background

On October 25, 2010, the TPA agencies (DOE, EPA and Ecology) added a new milestone (M-036-01) to the TPA, requiring that DOE submit a *Hanford Lifecycle Scope, Schedule and Cost Report* to EPA and Ecology each year. Unless noted otherwise in the text, the 2012 Lifecycle Report reflects scope, schedule and cost estimate information from FY 2012 to FY 2090. Chapters 1.0 and 2.0 discuss the basis for the Lifecycle Report and how information provided in it has been developed. Chapters 3.0 through 7.0 describe the work needed to complete Hanford Site cleanup and reflect all applicable environmental obligations. Chapter 8.0 discusses limitations of the Lifecycle Report and the appendices provide important details and backup information.

*“The report will include all other cleanup and monitoring activities (including post-closure activities) and all related actions necessary to complete the cleanup mission to provide a complete understanding of the resources necessary for the Hanford cleanup mission.”*

Information in the Lifecycle Report is presented by PBS. Estimated costs are provided at one level below the PBS for the complete project term, and at greater levels of detail for the next two to five years.

The TPA milestone requires that, where final cleanup decisions have not yet been made, the report shall be based on the reasonable upper bound of the range of plausible alternatives or may set forth a range of alternative costs including such a reasonable upper bound. For the 2012 Lifecycle Report, the TPA agencies identified 38 cleanup actions for which final cleanup decisions are still needed. This approach helps focus discussions on cleanup work that remains to be performed at Hanford and promotes consistency with the ongoing cleanup decision-making process under the TPA.

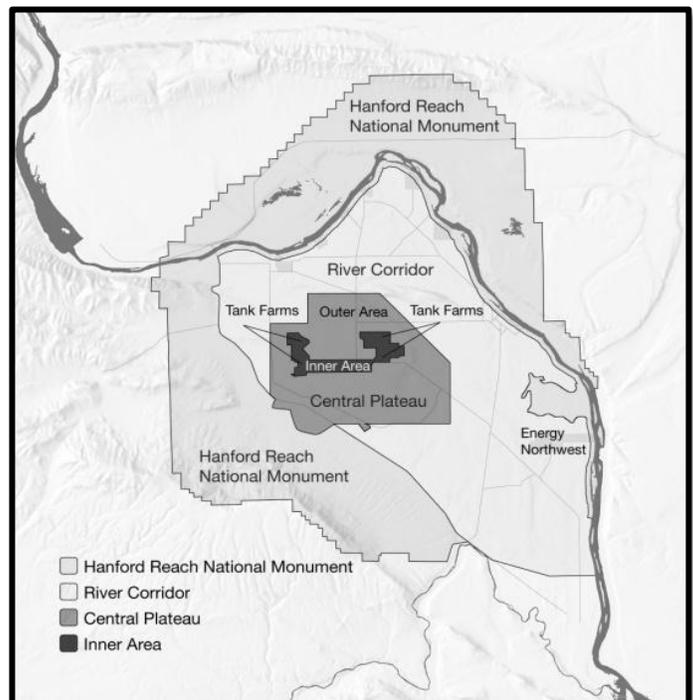
## Hanford Scope

The Hanford Site cleanup consists of three major scope components: 1) River Corridor, 2) Central Plateau and 3) Tank Waste. The Tank Waste component is contained geographically within the Central Plateau area. Cleanup also includes Mission Support activities related to safeguards and security, community and regulatory support, Hanford Site infrastructure and services, and long-term stewardship.

The scope of Hanford Site cleanup work is broken down into a series of PBSs, 10 for DOE-RL and 2 for DOE-ORP. Details of these PBSs are identified in the Lifecycle Report.

## Hanford Project Baseline Summaries:

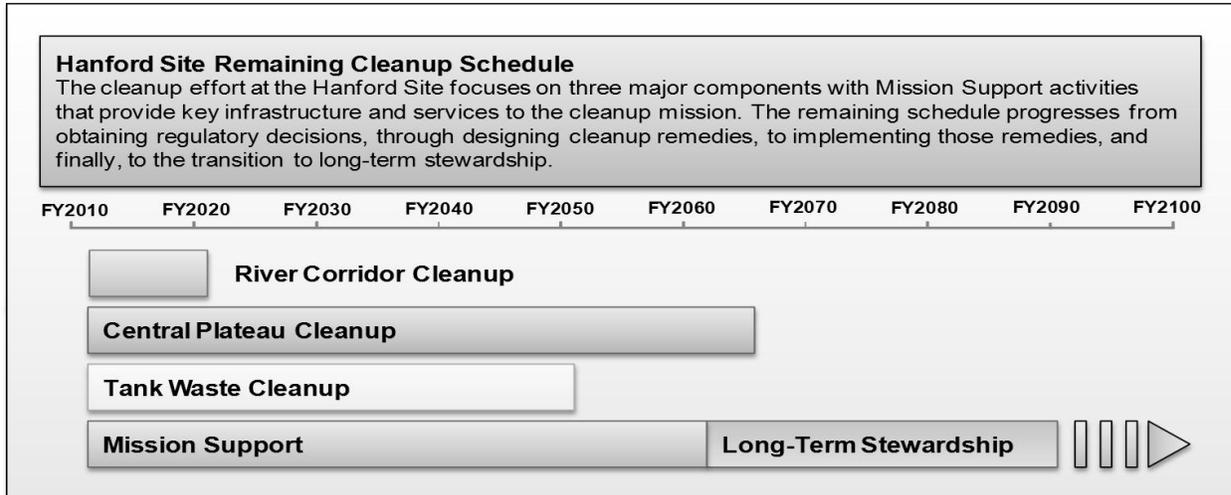
- RL-0011 Nuclear Material Stabilization and Disposition – Plutonium Finishing Plant;
- RL-0012 Spent Nuclear Fuel Stabilization and Disposition (K Basins Closure Project);
- RL-0013C Solid Waste Stabilization and Disposition-200 Area (Solid and Liquid Waste Disposition Project);
- RL-0020 Safeguards and Security;
- RL-0030 Soil and Water Remediation – Groundwater/Vadose Zone (Groundwater Project);
- RL-0040 Nuclear Facility Deactivation and Decommissioning (D&D) – Remainder of Hanford. This PBS has two parts 1) Central Plateau Remediation and 2) Infrastructure and Services or Mission Support;
- RL-0041 Nuclear Facility D&D – River Corridor Closure Project;
- RL-0042 Nuclear Facility D&D – Fast Flux Test Facility Project;
- RL-0100 Richland Community and Regulatory Support;
- RL-LTS Long-Term Stewardship (LTS) and post-cleanup LTS;
- ORP-0014 Radioactive Liquid Tank Waste Stabilization and Disposition (tank farms);
- ORP-0060 Major Construction – Waste Treatment Plant.



Hanford Site Map Showing Hanford's Principal Areas Designated for Cleanup Purposes.

# Hanford Schedule

The Hanford Site's remaining cleanup schedule covers activities for waste cleanup and waste management, leading to transition of portions of the Hanford Site to LTS. The figure below depicts the remaining schedule for the primary cleanup components. Chapters 4.0 through 7.0 and Appendix D of the 2012 Lifecycle Report present additional schedule details for the River Corridor cleanup, Central Plateau cleanup, Tank Waste cleanup, and Mission Support activities.

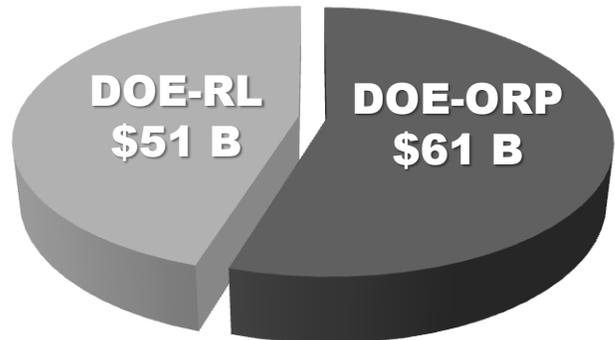


Scale dates represent start of fiscal year

## Hanford Cost

Hanford's remaining cleanup costs through FY 2090 are estimated to be about \$112 billion. DOE-RL scope accounts for about \$51 billion or about 46 percent of the total costs. DOE-ORP scope accounts for about \$61 billion, or about 54 percent.

These include cost uncertainty because many of the final cleanup decisions have not been made. Once these decisions are made, estimates will be reflected in future Lifecycle Reports.



Hanford Site cost estimate  
 FY 2012 - FY 2090 \$112 billion

## Cost Estimate Alternative Analyses

For purposes of the 2012 Lifecycle Report, the TPA agencies agreed that cleanup actions associated with tank waste treatment should be evaluated for reasonable upper bound cost estimate alternative analyses. Specifically, this would consider three cleanup actions:

- TW-1 Tank Waste – Tank Retrieval and Single-Shell Tank Farm Closure;
- TW-2 Tank Waste – Tank Waste Treatment
- TW-3 Tank Waste – Secondary Waste Treatment

The cost estimate alternative analyses are based on the results of 10 scenarios, or cases, selected by DOE-ORP and Ecology and reported in ORP-11242, *River Protection Project System Plan, Revision 6*.

These scenarios look at potential impacts, including changes to the lifecycle schedule and treatment mission. The TPA agencies concluded that the scenario analyses would provide better granularity and be more valuable for purposes of performing cost estimate alternative analyses for tank waste treatment. Results of these scenarios are discussed in Section 6.4 of the report.

# Outreach

Consulting with the Tribal Governments and involving the stakeholders and public in Hanford cleanup decision processes is a fundamental part of successful cleanup. The TPA agencies recognize that participation in the decision-making process will result in more sustainable decisions, and an open involvement process with effective outreach and communication are essential.

- Four Tribal Governments are involved in the Hanford Site cleanup. Representatives from the Tribal Governments work in a government-to-government relationship with DOE officials on decisions affecting cleanup and protection of the land.
- The 2012 Lifecycle Report was submitted to EPA and Ecology by January 31, 2012, in time to support DOE's annual budget development process and help inform decision makers about schedule and prioritization. Development of the 2013 Lifecycle Report is currently underway.
- Input from Tribal Governments, State of Oregon, Hanford stakeholders, and the public, will support future Lifecycle Report development. Feedback received on the 2012 report will be considered for inclusion into the 2013 and future Lifecycle Reports.
- Request for feedback will be an ongoing part of the annual report preparation process.

**The 2012 Lifecycle Report is available at [www.hanford.gov](http://www.hanford.gov). The documents are also available for review at the Public Information Repositories:**

**University of Washington, Suzallo Library**  
Government Publication Division  
Attn: David Maack, (206) 543-4664  
[www.lib.washington.edu/govpubs](http://www.lib.washington.edu/govpubs)

**Portland State University, Branford Price Millar Library**  
1875 SW Park Avenue  
Attn: Liz Paulus, (503) 725-4542  
<http://library.pdx.edu/>

**U.S. Department of Energy Public Reading Room**  
Washington State University, Tri-Cities  
Consolidated Information Center, Room 101-L  
2770 University Drive  
Attn: Janice Parthree, (509) 372-7443  
<http://reading-room.pnnl.gov/>

**Gonzaga University, Foley Center**  
East 502 Boone  
Attn: Linda Pierce, (509) 323-3834  
[www.gonzaga.edu/Academics/Libraries/Foley-Library](http://www.gonzaga.edu/Academics/Libraries/Foley-Library)

**TPA Administrative Record and Public Information Repository**  
2440 Stevens Center Place, Room 1101  
(509) 376-2530, <http://ww2.hanford.gov/arpir/>

Feedback received on the 2011 Lifecycle Report is located on the Hanford website at: [www.hanford.gov](http://www.hanford.gov) under the rotating box on the main page.

**Public input needs to be in writing and submitted by April 13, 2012.**

**E-mail comments to: [LCSSC@rl.gov](mailto:LCSSC@rl.gov) or mail to:**



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