



## Tri-Party Agreement

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

# 2011 Hanford Lifecycle Scope, Schedule and Cost Report

August 2011

The 2011 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 Hanford Resource Conservation and Recovery Act of 1976 (RCRA) and Hazardous Waste Management Act.

### The Report Does:

- Provide project scope, schedule and cost from Fiscal Year (FY) 2011 – FY 2090 for both DOE Hanford offices, and will be modified annually;
- Show the remaining estimated cleanup cost for projects;
- Include but does not separate American Recovery and Reinvestment Act (ARRA) funding;
- Include post closure long-term stewardship/institutional controls, safeguards and security, pension costs, community and regulatory agency support;
- Include regulatory documentation of Hanford Site cleanup decisions;
- Reflect current regulatory decisions, scope, schedule, cost estimate revisions, and tribal and stakeholder views and values;
- Include actual budget appropriated in FY 2011, the President's requested budget in FY 2012 and future cost estimates that support full compliance;
- Present data at the Project Baseline Summary (PBS) level one and two detail in the report and to level three detail in Appendix E (cost and schedule);
- Provide reasonable upper bound cost estimates for two cleanup decisions yet to be made:
  - 200-SW-2 Operable Unit (OU) burial ground cleanup (removal of waste);
  - Disposition of 100 Area surplus reactors (removal of reactors).

### The Report Does Not:

- Include DOE Office of Science funded work, Natural Resource Damage Assessment liabilities, or leased lands such as U.S. Ecology;
- Include full time employees/workforce estimates;
- Function as a regulatory, decision-making document. Cost estimates for future cleanup actions are not intended to supersede or impact the regulatory decision-making process, such as Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) Remedial Investigation/ Feasibility Study (RI/FS) process or the RCRA closure process.

The Lifecycle Report supports continued discussions with U.S. Environmental Protection Agency (EPA) and Washington State Department of Ecology (Ecology) on how and when DOE-RL and DOE-ORP will complete cleanup, and how milestone changes will affect lifecycle scope, schedule, and cost.

The Lifecycle Report is for planning purposes only; and costs provided are estimates. The estimated costs shown are in 2010 dollars, which have been escalated for inflation.

## Milestone Requirements

On October 25, 2010, the TPA agencies (DOE, EPA and Ecology) agreed to modify the TPA to incorporate a new milestone, M-036-01, requiring annual submittal of a Lifecycle Report. The 2011 Report is based on current scope, schedule, and cost estimates, and incorporates key DOE-ORP work scope and Central Plateau OU regulatory milestones from the Consent Decree and TPA Settlement Package. The TPA Milestone M-036-01 requires that the Lifecycle Report include all cleanup, monitoring, and related actions necessary to complete cleanup of the Hanford Site.

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. The TPA agencies conducted a series of working sessions and identified 39 cleanup actions for which decisions have not yet been made. The TPA agencies developed a schedule for completing cost estimate alternative analyses and the 200-SW-2 OU burial ground cleanup and disposition of 100 Area surplus reactors were identified and selected for detailed cost estimation in this report.

### Hanford Scope

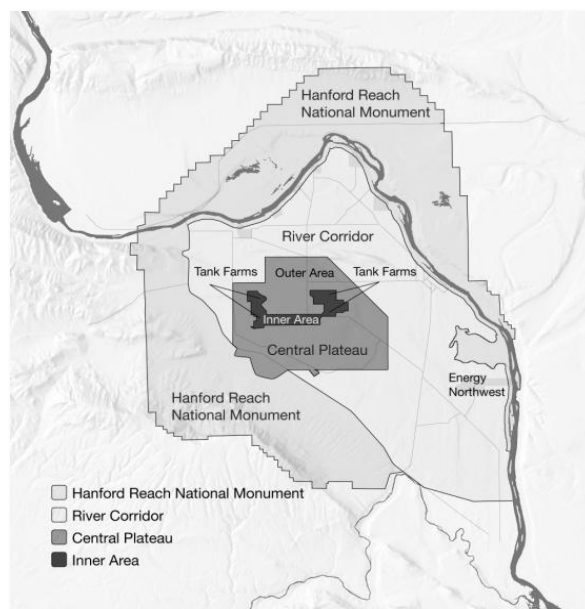
The Hanford Site cleanup consists of three major components: 1) River Corridor, 2) Central Plateau, and 3) Tank Waste (the tank waste component is contained geographically within the Central Plateau). Cleanup also includes Mission Support activities related to safeguards and security, community and regulatory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

The scope of Hanford Site cleanup work is broken down into a series of PBS's, 10 for DOE-RL and 2 for DOE-ORP. Details of these PBSs are identified in Table 3-1 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 (Central Plateau Remediation);
- RL-0040 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 and Immobilization Plant.

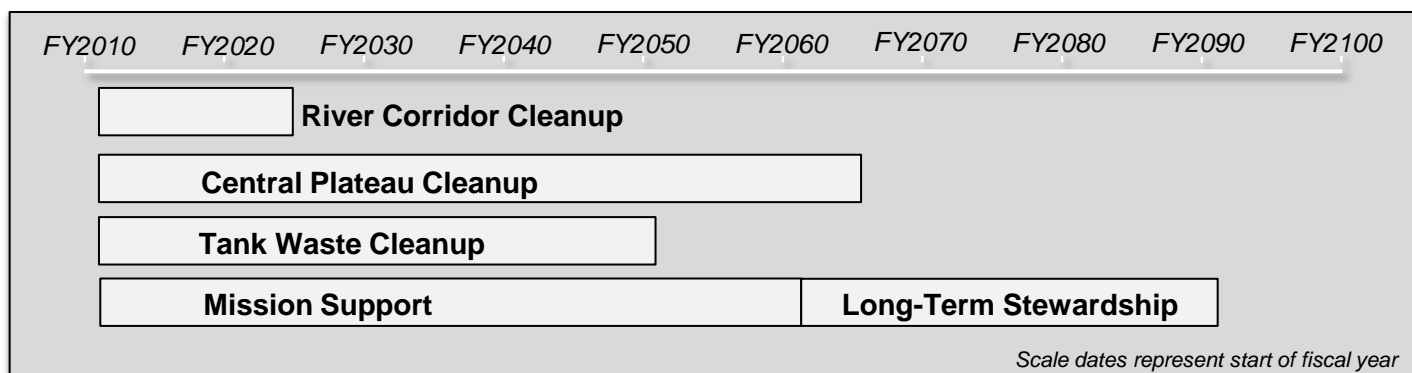


Principal Components of Hanford's Cleanup Completion Framework: River Corridor, Central Plateau, and Tank Waste (Note: River Corridor Cleanup includes the south shore of the river that is part of the Hanford Reach National Monument.)

## 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 long-term stewardship (LTS). The figure below depicts the remaining schedule for the primary cleanup components. Chapters 4.0 through 7.0 and Appendix E of the 2011 Lifecycle Report, present additional schedule details for the River Corridor, Central Plateau, Tank Waste, and Mission Support activities.

To support the cleanup, DOE-RL has responsibility for Mission Support activities related to safeguards and security, community and regulatory support, Hanford Site infrastructure and services, and LTS. These Mission Support activities align with the cleanup through FY 2060, when the Hanford Site is expected to be fully transitioned to LTS. DOE-RL has planned for an LTS period that runs from FY 2061 through FY 2090 as part of Mission Support.



## Hanford Cost

Hanford's remaining cleanup costs are estimated to be about \$115 billion. DOE-RL scope accounts for about \$52 billion or about 45 percent of the total costs. DOE-ORP scope accounts for about \$63 billion, or about 55 percent.

These estimated costs allow for reasonable allowances for cost and schedule uncertainties, and for activities where cleanup decisions have not yet been made.

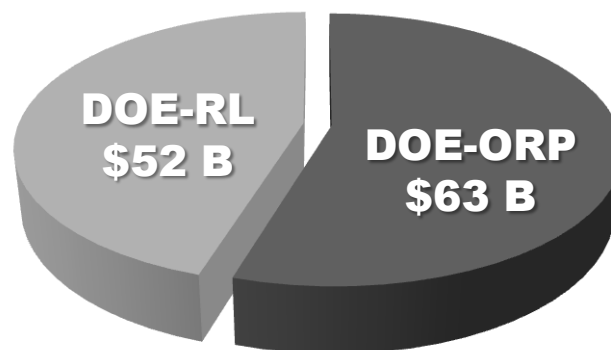
The upper bound alternative for the 200-SW-2 OU burial ground is based on removal of waste. Associated activities for this alternative include removal of waste from the surface to the bottom of each trench, separating and preparing the retrieved waste for disposal, and placing the waste in approved disposal facilities.

The upper bound cost estimates for these two future cleanup actions have not been added to the cleanup cost estimates. Once related regulatory decisions are made, the remedy costs will be added into the overall cost estimates.

## Cost Estimate Alternative Analyses

The Lifecycle Report includes in-depth cost estimates for projects awaiting final regulatory decisions. For the FY 2011 report, the TPA agencies identified 39 cleanup actions for which final cleanup decisions are needed. Two of the 39 were selected for in-depth cost estimate alternative analysis in the 2011 report. These two analyses reflect Tribal Government, State of Oregon, and stakeholder cleanup views and values.

The identified upper bound alternative analyzed for disposition of 100 Area surplus reactors is based on maintaining interim safe storage, followed by deferred reactor dismantlement.



Hanford Site cost estimate  
FY 2011 - FY 2090 \$115 billion

## 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 is essential.

- The initial Lifecycle Report was due no sooner than nine months after the TPA milestone (M-036-01) was finalized (July 25, 2011)
- Following completion of the initial 2011 Lifecycle Report, the report will be prepared annually and submitted to EPA and Ecology by January 31<sup>st</sup>, in time to support DOE's annual budget development process and help inform decision makers about schedule and prioritization. Development of the 2012 Lifecycle Report is currently underway
- Input from Tribal Governments, State of Oregon, Hanford stakeholders, and the public, will support future Lifecycle Report development. Comments received on the 2011 report will influence the 2013 and future Lifecycle Reports
- Briefings have been provided to the four Tribal Governments, State of Oregon, Hanford Advisory Board and two Board committees. Advice received from the Hanford Advisory Board was considered during the development of the initial 2011 Lifecycle Report
- Public input will be an ongoing part of the annual report preparation process

**The 2011 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

**Portland State University, Branford Price Millar Library**  
1875 SW Park Avenue  
Attn: Claudia Weston, (503) 725-4542

**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

**Gonzaga University, Foley Center**  
East 502 Boone  
Attn: Linda Pierce, (509) 323-3834

**TPA Administrative Record and Public Information Repository**  
2440 Stevens Center Place, Room 1101  
(509) 376-2530;  
Website: <http://www2.hanford.gov/arpir/>

***All comments need to be in writing and submitted by November 10, 2011.***

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



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