DOE/EIS-0222-SA-02
Revision 0

Supplement Analysis of the Hanford Comprehensive Land-Use Plan Environmental Impact Statement

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

U.S. DEPARTMENT OF ENERGY | Richland Operations Office
P.O. Box 550
Richland, Washington 99352

DOE/EIS-0222-SA-02
Revision 0

Supplement Analysis of the Hanford Comprehensive Land-Use Plan Environmental Impact Statement

Date Published
April 2015

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

U.S. DEPARTMENT OF ENERGY | Richland Operations Office
P.O. Box 550
Richland, Washington 99352

APPROVED
By Janis D. Aardal at 6:36 am, May 12, 2015

Release Approval _____ Date _____

Supplement Analysis

Hanford Comprehensive Land-Use Plan Environmental Impact Statement

DOE/EIS-0222-SA-02

April 2015

Prepared for the U.S. Department of Energy
Assistant Secretary for Environmental Management

U.S. DEPARTMENT OF ENERGY | Richland Operations Office

P.O. Box 550
Richland, Washington 99352

Approved for Public Release;
Further Dissemination Unlimited

This page intentionally left blank.

TABLE OF CONTENTS

FIGURES

TABLES

APPENDIX

ACRONYMS

ALE	Fitzner/Eberhardt Arid Lands Ecology Reserve
AMP	Area Management Plan
AOP	Air Operating Permit
BRMP	Hanford Biological Resource Management Plan
CCP-EIS	Comprehensive Conservation Plan and Environmental Impact Statement for the Hanford Reach National Monument
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR	Code of Federal Regulations
CLUP	Comprehensive Land-Use Plan
D&D	Deactivation and Decommissioning
DOE	U.S. Department of Energy
DOE-RL	U.S. Department of Energy, Richland Operations Office
EA	Environmental Assessment
Ecology	State of Washington, Department of Ecology
EIS	Environmental Impact Statement
ET	Evapotranspiration
FONSI	Finding of No Significant Impact
FR	Federal Register
GHG	greenhouse gas
HCP-EIS	Final Hanford Comprehensive Land-Use Plan Environmental Impact Statement
HWMA	Hazardous Waste Management Act
LIGO	Laser Interferometer Gravitational Wave Observatory
LLW	Low-Level Waste
MLLW	Mixed Low-Level Waste
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act of 1969
NHPA	National Historic Preservation Act of 1966
NRDWL	Non-Radioactive Dangerous Waste Landfill
NPL	National Priorities List
NPS	National Park Service
OU	Operable Unit
PUREX	Plutonium Uranium Extraction Plant
R&D	Research and Development
RCRA	Resource Conservation and Recovery Act of 1976
RMP	Resource Management Plan
ROD	Record of Decision
ROI	Region of Influence
SA	Supplement Analysis
SST	Single-Shell Tank
SWL	Solid Waste Landfill
TCP	Traditional Cultural Property
TPA	Tri-Party Agreement (Hanford Federal Facility Agreement and Consent Order)
USFWS	U.S. Fish and Wildlife Service

WDFW	Washington Department of Fish and Wildlife
WIPP	Waste Isolation Pilot Plant
WTP	Hanford Tank Waste Treatment and Immobilization Plant

GLOSSARY

Bank cubic meters. A volumetric term to define a cubic meter of rock or material in situ before it is drilled and blasted.

Barrier. Man-made components of a waste management system designed to prevent or impede the release of radionuclides or other contaminants to the biosphere. Barriers can include the waste form, waste container, and materials placed over, under, or around these containers or wastes. For example, an engineered cap constructed over a waste site is a barrier.

Basalt. A dark grey to black, fine grained igneous rock composed primarily of calcium feldspar and pyroxene, with or without olivine. This material underlies the Hanford Site, and may be quarried for use as riprap in the construction of caps to prevent wind erosion, water erosion, and human intrusion. May be crushed and used in the construction of roadways and railways.

Biodiversity. The diversity of ecosystems, species, and genes, and the variety and variability of life. Biodiversity also is a qualitative measure of the richness and abundance of ecosystems and species in a given area.

Cap. Construction of an engineered barrier over the top of a waste site in order to prevent or impede the release of radionuclides or other waste material into the environment.

Conservation. Areas of ecological, geological, archaeological, and cultural significance and sensitivity that are to be protected and managed so as to maintain the essential qualities derived from the landscape, but contain supplemental values of scientific, education, historical, scenic, and mineral importance that may be suited to human uses insofar as the essential qualities remain intact over the landscape.

Conservation (Mining) land-use designation. As presented in the Comprehensive Land-Use Plan (CLUP), an area reserved for the management and protection of archeological, cultural, ecological, and natural resources. Limited and managed mining could occur as a special use (e.g., a permit would be required) within appropriate areas. Limited public access would be consistent with resource conservation. Includes activities related to Conservation (Mining), consistent with the protection of archeological, cultural, ecological, and natural resources.

Contamination. The presence of unwanted radioactive and/or hazardous materials above background concentrations in environmental media (e.g., air, soil, water) or on the surfaces of structures, objects, or personnel.

Cumulative impact. The impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, but collectively significant actions taking place over a period of time.

Cultural resources. Areas or objects that are of cultural significance to human history at the national, state, or local level. Generally includes paleontological, pre-contact, and post-contact resources, as well as resources of traditional use or religious value to Native Americans.

Decommissioning. The process of removing a facility from operation, followed by decontamination, entombment, dismantlement, or conversion to another use.

Decontamination. The actions taken to reduce or remove substances that pose a substantial present or potential hazard to human health or the environment, (e.g., removing radioactive contamination from facilities, soil, or equipment by washing, chemical action, mechanical cleaning, or other techniques).

Development. Any change in use, or extension of the use of the land, including, but not limited to, the construction, reconstruction, conversion, structural alteration, relocation, or enlargement of any improvements.

DOE Orders. Requirements internal to the U.S. Department of Energy that establish agency policy and procedures, including procedures for compliance with applicable laws.

Ecosystem. The interacting system of a biological community and its physical environment, considered as a unit in nature.

Endangered species. Animals, birds, fish, plants, or other living organisms threatened with extinction by man-made or natural changes in their environment. Requirements for declaring a species endangered are contained in the *Endangered Species Act of 1973*.

Emergency planning zone (EPZ). The EPZ is an area surrounding a facility for which emergency planning and preparedness efforts are carried out to ensure that prompt and effective actions can be taken to minimize the impact to onsite personnel, public health and safety, and the environment in the event of an operational emergency. The EPZ begins at the boundary of the facility and ends at a distance for which special planning and preparedness efforts are no longer required. Access restrictions are not required within an EPZ; however, DOE would be responsible for ensuring adequate planning and preparedness efforts. A plan that evaluates hazard assessments and determines the size of EPZs is a requirement of DOE Order 151.1, *Comprehensive Emergency Management System Order*.

Evapotranspiration. The combined processes by which water is transferred from the surface of the Earth to the atmosphere, including evaporation of liquid or solid water, and transpiration from plants.

Exclusive use zone (EUZ). The EUZ is an area designated for DOE operations activities associated with a waste site or facility. Each DOE nuclear facility is encouraged by DOE Order 420.1, *Facility Safety*, to maintain siting distance for a public buffer zone as part of the defense in depth approach to prevent public health effects in the event of an unmitigated accident. The EUZ is reserved for DOE or other hazardous operations with severely restricted public access. This zone extends from the facility fence line to a distance at which threats to the public from routine and accidental releases diminish to the point where public access can be routinely allowed. It is inside the emergency planning zone (EPZ).

Facility area. An area within the Hanford Site Boundary immediately surrounding a facility or group of facilities that functions under process safety management and a common emergency response plan.

Fugitive dust. The particulate matter that is stirred up and released into the atmosphere during excavation or construction activities.

Groundwater. The supply of water below the land surface in the zone of saturation.

Hanford Federal Facility Agreement and Consent Order. The *Hanford Federal Facility Agreement and Consent Order* (also referred to as the Tri-Party Agreement), is a binding agreement, negotiated pursuant to Section 120 of the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980,* and other regulations signed by the U.S. Department of Energy, the U.S. Environmental Protection Agency (Region 10), and the State of Washington Department of Ecology, to organize responsibilities for remediation of the Hanford Site and to establish milestones by which the remediation will be accomplished. This agreement commits the three agencies to a long-term cooperative program to remediate the contaminated sites at Hanford. The Tri-Party Agreement contains a blueprint for remediation and uses enforceable milestones to keep the program on schedule.

Hazardous material. A substance or material, including a hazardous substance, that has been determined by the U.S. Secretary of Transportation to be capable of posing an unreasonable risk to health, safety, and property when transported in commerce.

Hazardous waste. Those wastes that are identified as hazardous pursuant to RCRA (40 CFR 261).

High-Intensity Recreation land-use designation. As presented in the CLUP, an area allocated for high-intensity, visitor-serving activities and facilities (commercial and governmental) such as golf courses, recreational vehicle parks, boat launching facilities, Tribal fishing facilities, destination resorts, cultural centers, and museums. Includes related activities consistent with High-Intensity Recreation.

Historic resources. The sites, districts, structures, and objects that are considered limited and nonrenewable because of an association with historic events, persons, or social or historic movements.

Impact. The effect, influence, alteration, or imprint of an action. Impacts may be beneficial or detrimental. In the Council on Environmental Quality regulations, “impact” is synonymous with “effect.”

Industrial land-use designation. As presented in the CLUP, an area suitable and desirable for activities, such as reactor operations, rail, barge transport facilities, mining, manufacturing, food processing, assembly, warehouse, and distribution operations. Includes related activities consistent with industrial uses.

Industrial-Exclusive land-use designation. As presented in the CLUP, an area suitable and desirable for treatment, storage, and disposal of hazardous, dangerous, radioactive, and nonradioactive wastes. Includes related activities consistent with Industrial-Exclusive uses.

Infrastructure. The basic services, facilities, and equipment needed for the operation and growth of an area.

Institutional controls. The term “institutional controls” is intended to be a broad term. It generally includes all non-engineered restrictions on activities, access, or exposure to land, groundwater, surface water, waste and waste disposal areas, and other areas or media. Some common examples of tools to implement institutional controls include restrictions on use or access, zoning, governmental permitting, public advisories, installation master plans, and legal restrictions such as deed notices or other environmental easements. Institutional controls may be temporary or permanent restrictions or requirements.

Land use. A term used to indicate the utilization of any piece of land. The way in which land is being used is the land use.

Land-use planning. A decision-making process to determine the future or end use of a parcel of land, considering such factors as current land use, public expectations, cultural considerations, local ecological factors, legal rights and obligations, technical capabilities, and cost.

Low-Intensity Recreation land-use designation. As presented in the CLUP, an area allocated for low-intensity, visitor-serving activities and facilities, such as improved recreational trails, primitive boat launching facilities, and permitted campgrounds. Includes related activities consistent with Low-Intensity Recreation.

Low-level waste. Radioactive waste that is not classified as high-level waste, transuranic waste, or spent nuclear fuel. Test specimens of fissionable material irradiated for research and development, and not for the production of power or plutonium, may be classified as low-level waste if the concentration of transuranic elements is less than 100 nano-curies per gram of waste. The U.S. Department of Energy, U.S. Environmental Protection Agency, and U.S. Nuclear Regulatory Commission share the responsibility for managing low-level waste.

Manhattan Project. The code name for the large-scale national project that developed the first atomic bomb.

Maximally exposed individual (MEI). An hypothetical person who lives near the Hanford Site who, by virtue of location and living habits, could receive the highest possible radiation dose.

Mitigation. Those actions that avoid impacts altogether, minimize impacts, rectify impacts, reduce or eliminate impacts, or compensate for impacts.

Mixed waste. Waste containing both radioactive and hazardous components as defined by the *Atomic Energy Act of 1954* and the *Resource Conservation and Recovery Act of 1976*, respectively.

National Priorities List (NPL). A formal listing of the most hazardous waste sites in the nation, as established under the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980*, that have been identified for remediation.

National Register of Historic Places. A list of architectural, historical, archaeological, and cultural sites of local, state, or national significance, established by the *Historic Preservation Act of 1966*, and maintained by the National Park Service. Sites are nominated to the Register by state or Federal agencies.

Offsite. Any place located outside of the Hanford Site boundary.

Onsite. A place located within the Hanford Site boundary.

Operable unit. A discrete set of one or more release sites that are considered together for assessment and remedial activities. Criteria for placement of release sites into an operable unit include geographic proximity, similarity of waste characteristics and site types, and the possibilities for economy of scale.

Preservation land-use designation. As presented in the CLUP, an area managed for the preservation of archeological, cultural, ecological, and natural resources. No new consumptive uses (e.g., mining or extraction of non-renewable resources) would be allowed within this area. Limited public access would be consistent with resource preservation. Includes activities related to Preservation uses.

Production reactor. A nuclear reactor that is used to irradiate target material to produce special nuclear material or by-product material.

Radiation (ionizing radiation). Alpha particles, beta particles, gamma rays, x-rays, neutrons, high-speed electrons, high-speed protons, and other particles capable of producing ions. In the context of the CLUP, radiation does not include non-ionizing radiation such as radio waves, microwaves, or visible, infrared, or ultraviolet light.

Record of Decision (ROD). A public document that records the final decision(s) concerning a proposed action. The ROD is based in whole or in part on information and technical analysis generated during either the *Comprehensive Environmental Response, Compensation, and Liability Act of 1980* process, or the *National Environmental Policy Act of 1969* process, both of which consider public comments and community concerns during the decision-making process.

Remediation. The process of cleaning up a site where a release of a hazardous substance has occurred.

Research and Development land-use designation. As presented in the CLUP, an area designated for conducting basic or applied research that requires the use of a large-scale or isolated facility. Includes scientific, engineering, technology development, technology transfer, and technology deployment activities to meet regional and national needs. Includes related activities consistent with Research and Development.

Sensitive species. A Washington State category for plant species considered vulnerable or declining, that could become endangered or threatened without active management or removal of threats. Also sometimes used as a generic term for any plant and wildlife species that are threatened or endangered, rare, vulnerable or declining, or monitored by state or Federal agencies.

Shrub-steppe. Typically a treeless area covered by grasses and shrubs and having a semiarid climate. Precipitation is typically very slight, but sufficient to support the growth of sparse grass and other plants adapted to living in conditions where water is scarce. Washington State Department of Fish and Wildlife considers shrub-steppe a priority habitat.

Solid waste. Any garbage, refuse, or sludge from a waste treatment plant, water supply treatment plant, or air pollution control facility and other discarded material, including, solid liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations and from community activities. Solid waste does not include solid and dissolved material in domestic sewage, or solid or dissolved materials in irrigation return flows, or industrial discharges which are point sources subject to permits under Section 402 of the *Federal Water Pollution Control Act, as amended*, or source, special nuclear, or by-product material as defined by the *Atomic Energy Act of 1954*, as amended.

Surface water. All waters that are open to the atmosphere and subject to surface runoff (rivers, lakes, reservoirs, streams, impoundments, seas, estuaries, etc.) and all springs, wells, or other collectors that are directly influenced by surface water.

Threatened species. Any species that is likely to become an endangered species within the foreseeable future throughout all or a significant part of its range.

Vegetation type. A classification of the plant community on a site based on the dominant plant species in the community.

Waste management. The planning, coordination, and direction of functions related to the generation, handling, treatment, storage, transport, and disposal of waste, as well as associated surveillance and maintenance activities.

1.0 INTRODUCTION

The Hanford Comprehensive Land-use Plan Environmental Impact Statement (HCP-EIS) (DOE/EIS-0222, 1999) addresses land use for Hanford. The Department of Energy (DOE) prepares a Supplement Analysis (SA) to determine whether a change in a proposed action is substantial and relevant to environmental concerns or whether new circumstances or information relevant to environmental concerns, and bearing on the proposed action or its impacts are significant ["Recommendations for the Supplement Analysis Process" (DOE, July 2005)]. Based on the SA evaluation, DOE may determine whether a supplemental EIS, a new EIS, or no further *National Environmental Policy Act* (NEPA) documentation is warranted. In this case, the "proposed action" addressed in the HCP-EIS was to implement a comprehensive land-use plan (CLUP) at Hanford[1].

The selection of land-use designations, map, policies, and procedures, as documented in the HCP-EIS Record of Decision (ROD, 64 FR 61615, November 12, 1999), defines the CLUP for Hanford. There are four key elements to the Hanford CLUP:

1. The DOE land-use map that depicts land-use designations for geographic areas of the Hanford Site. (see Figure 1).

2. The land-use designations that define the purpose, intent, and principal use(s) of each area on the CLUP land-use map.

3. The land-use policies that direct land-use actions. The policies help to ensure that individual land-use actions are consistent with the CLUP over time.

4. The land-use plan implementing procedures, such as administrative procedures for reviewing and approving land-use requests that coordinate the CLUP with its associated area and resource management plans.

As stated in the HCP-EIS, "the CLUP is a living document designed to identify a course over an extended period of development and management of resources, yet the plan is flexible enough to accommodate a wide spectrum of both anticipated and future mission conditions." Chapter 6.0 of the HCP-EIS provides an overview of the policies and implementing procedures that can be used to implement the CLUP. The CLUP also makes provisions for the preparation of Resource Management Plans (RMPs) and Area Management Plans (AMPs) to enable detailed management strategies for geographic areas or natural, ecological, and cultural resources. When sufficient project descriptions become available for specific proposals, DOE will conduct the appropriate review under NEPA.

[1] In this document, the acronym "HCP-EIS" is used when addressing the analysis of the environmental impacts and the NEPA process for the EIS. The acronym "CLUP" is used when discussing the land-use plan and the land-use map, designations, policies, and procedures described in that plan that are being evaluated as part of this SA.

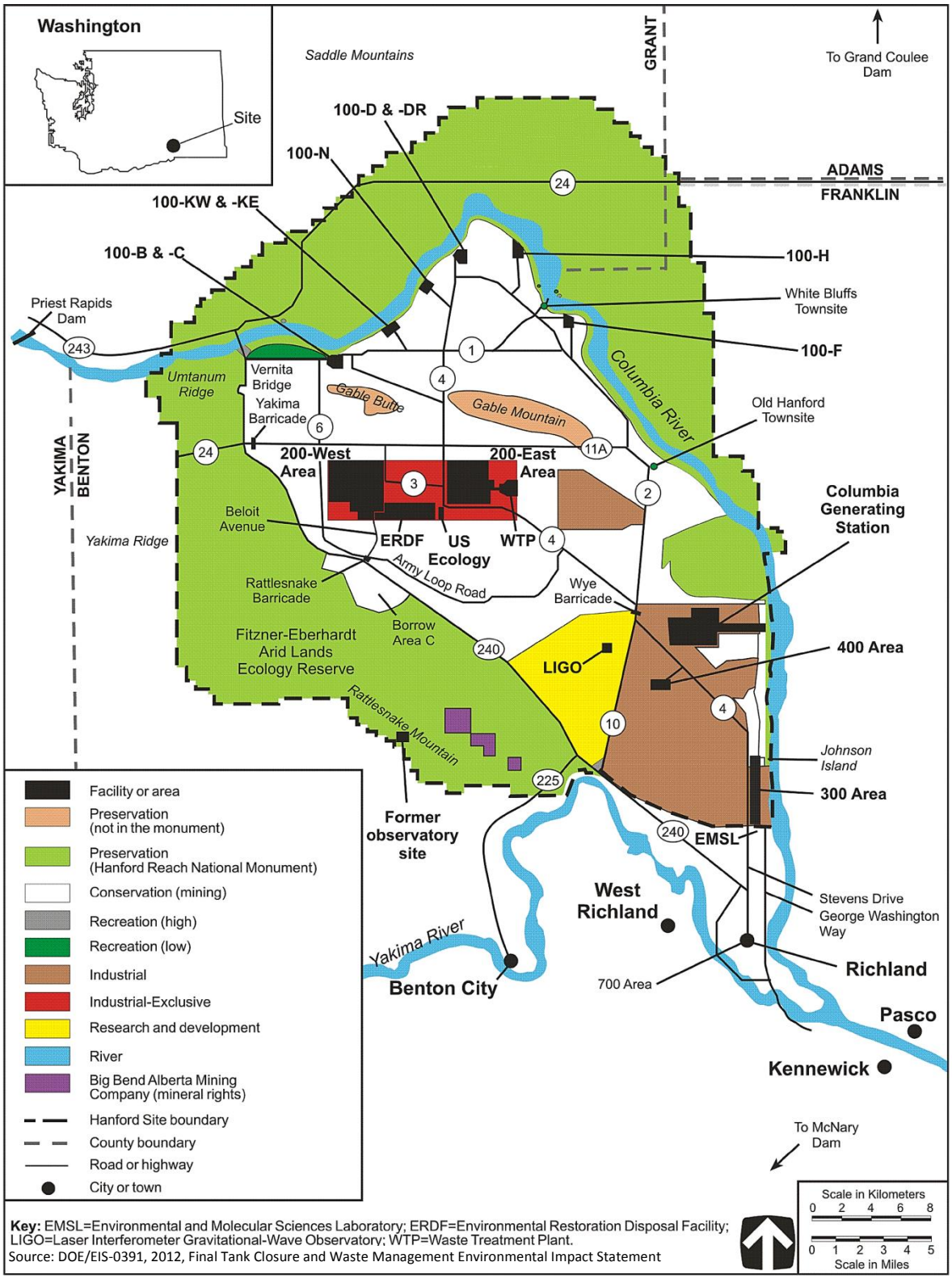
This SA considers ongoing and proposed or reasonably foreseeable programs, operations, and activities at Hanford from the time the HCP-EIS and ROD were released; including the last HCP-EIS SA (DOE/EIS-0222-SA-01), completed in 2008, and associated amended ROD (73 FR 55824, September 26, 2008).

DOE issued the first HCP-EIS SA in June 2008. No significant new information or changed circumstances were identified since the HCP-EIS that would warrant a new or supplemental EIS. However, an amended ROD was published (73 FR 55824; September 26, 2008) to clarify two points: (1) that when considering land-use proposals, DOE will use regulatory processes, such as the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA) and the *Resource Conservation and Recovery Act* (RCRA), in addition to the implementing procedures in Chapter 6 of the HCP-EIS to ensure consistency with CLUP land-use designations, and (2) that DOE will continue to apply the process under HCP-EIS Chapter 6 to modify or amend the CLUP, as needed.

The DOE's Preferred Alternative in the HCP-EIS anticipated multiple uses of Hanford including consolidating waste management operations in the Central Plateau, supporting industrial development in the eastern and southern portions of Hanford, increasing recreational access to the Columbia River, and expanding the Saddle Mountain National Wildlife Refuge to include all of the Wahluke Slope, the Columbia River islands not in Benton County, the Riverlands, the McGee Ranch, and the Fitzner/Eberhardt Arid Lands Ecology (ALE) Reserve [managed by the U.S. Fish and Wildlife Service (USFWS)].

The HCP-EIS and ROD will remain in effect as long as DOE retains legal control of some portion of the Hanford Site, which is expected to be longer than 50 years.

Figure 1. Hanford Comprehensive Land-Use Plan Environmental Impact Statement Land-Use Map.



Key: EMSL=Environmental and Molecular Sciences Laboratory; ERDF=Environmental Restoration Disposal Facility; LIGO=Laser Interferometer Gravitational-Wave Observatory; WTP=Waste Treatment Plant.
Source: DOE/EIS-0391, 2012, Final Tank Closure and Waste Management Environmental Impact Statement

1.1 Methodology

DOE's *"Recommendations for the Supplement Analysis Process"* indicates that "an SA should be brief, focus analyses on changes, analyze changes commensurate with their contribution to potential impacts, and evaluate changes absolutely and in comparison to existing EIS analyses." New information or changed circumstances and their potential effect on resource areas analyzed in the EIS should be identified. This SA evaluates present and proposed or reasonably foreseeable future programs, operations, and activities. The SA evaluates new information and changed circumstances since issuance of the HCP-EIS and 2008 SA. The analysis is based on the best information available and identifies whether and how the elements of the CLUP (the proposed action evaluated in the HCP-EIS) could be affected. The SA focuses on potential impacts of "significant" new information and changed circumstances as defined by their "context" and "intensity." Additional details regarding the methodology are provided below.

1.1.1 Background

DOE's review of land use proposals and activities follow applicable regulatory and public review processes including associated public involvement reviews, consultations, meeting with tribal representatives, and briefings with the Hanford Advisory Board. Land use proposals are evaluated with respect to allowable uses, special uses, or amendments consistent with the CLUP. Such implementing controls include AMPs and RMPs, which are described later in this SA. In the 2008 SA, DOE found that some originally planned RMPs identified in the HCP-EIS were consolidated with and are covered by other plans; while some plans have been deferred pending funding and project priorities. These plans continue to implement environmental and resource controls consistent with CLUP policies and implementing procedures and do not amend, modify, or change the original CLUP land-use designations, map, or policies. These plans continue to support DOE's efforts to streamline and integrate project reviews and environmental planning at the Hanford Site consistent with the CLUP.

Hanford has instituted a multi-disciplinary "Site Evaluation Team" pursuant to Chapter 6 of the HCP-EIS to evaluate land-use requests to ensure consistency with the CLUP map, designations, policies, and procedures. The team is comprised of a Chairman, Land Planner, and subject matter experts representing each of the Hanford contractors in functional areas including, but not limited to, land and facilities management, environmental compliance, ecological resources, cultural and historic resources, industrial health and safety, waste information data system, soil and groundwater, telecommunications, electrical utilities, emergency preparedness, fire protection, traffic safety, water utilities, roads and grounds, industrial hygiene, and radiological protection. The team conducts reviews and integrates land-use requests for all developments, both temporary and permanent, including facilities, infrastructure systems, land improvements, and physical changes of land use. When appropriate, land-use requests may be shared with other federal, state, county, or local agencies during the review process. The procedures also require the evaluation of requests by non-DOE entities for use of land on the Hanford Site. The 2008 SA found that this site evaluation process is effective in ensuring that land-use requests and proposals are consistent with the four elements of the CLUP. This site evaluation process continues today and remains in effect.

1.1.2 2014 Supplement Analysis

This 2015 SA builds on the 2008 SA by focusing on NEPA documents (proposed and completed), Resource Management Plans, and Strategic and Long-Range Planning documents subsequently issued to

address the transition from ongoing site operation and remediation efforts to post-cleanup activities. This 2015 SA evaluates whether significant new information or changed circumstances exist since the HCP-EIS and 2008 SA with regard to potential impacts to the four elements of the CLUP. Resource categories considered in this 2015 SA include land use, geologic resources, biological resources, and cultural resources. The evaluation process identified no actions/decisions presenting land-use considerations or impacts associated with water resources, air resources, socioeconomics, aesthetic/visual resources, noise/vibration, environmental monitoring programs and contamination; as a result these resource areas would be "unaffected" as discussed in Section 2.1.5.

New Information and Changed Circumstances Considered in the 2015 SA

DOE reviewed existing NEPA documents (notices of intent, draft and final), resource management plans, and Hanford strategic and long-range planning documents prepared or updated since the 2008 SA while considering the baseline established by the HCP-EIS and ROD. These include the following:

NEPA Documents (Notices of Intent, Draft, and Final)

- Final Vegetation Management EA (DOE/EA-1728, 2012)
- Final Borrow Pit Expansion EA (DOE/EA-1934, 2013)
- Final EA for Combined Community Communications Facility and Infrastructure Cleanup on the Arid Lands Ecology Reserve (DOE/EA-1660, 2009)
- Final EA on the Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise (CVN 65, 2012)
- Final Tank Closure and Waste Management EIS (DOE/EIS-0391,2012)
- Final Hanford Reach National Monument Comprehensive Conservation Plan and EIS (USFWS, 2008)
- Notice of Intent to Prepare an EA for the Proposed Conveyance of Land at the Hanford Site (DOE/EA-1915, 2012)
- Notice of Intent to Prepare an EIS for the Acquisition of a Natural Gas Pipeline and Natural Gas Utility Service at the Hanford Site (DOE/EIS-0467, 2012) (Work on the EIS has been suspended)Revised Draft EA for Nonradioactive Dangerous Waste Landfill and Solid Waste Landfill Closure (DOE/EA-1707D, 2011)
- Manhattan Project Sites Special Resource Study /Environmental Assessment and FONSI (National Park Service, U.S. Department of Interior, 2010)[2]

Resource Management Plans

- Hanford Cultural Resources Management Plan (DOE/RL-98-10, Rev. 0, 2003)
- Hanford Biological Resources Management Plan (DOE/RL-96-32, Rev. 1, 2013)
- Hanford Industrial Mineral Resources Management Plan (DOE/RL-2000-61, Draft, 2001)

Strategic and Long-Range Planning Documents

- Hanford Site Cleanup Completion Framework (DOE/RL 2009-10, Rev. 1, 2013)
- Hanford Ten Year Site Plan (DOE/RL 2012-29, 2013)

[2] DOE adopted this EA and issued a FONSI.

- Hanford Federal Facility Agreement and Consent Order (TPA, Ecology, EPA and DOE, 1989)
- Consent Decree in State of Washington v. Department of Energy (E.D. Wa. October 25, 2010)
- 2014 Hanford Lifecycle Scope, Schedule, and Cost Report (DOE/RL-2013-02, Rev. 1, 2014)
- Hanford Long-Term Stewardship Program Plan (DOE/RL 2010-35, Rev. 1, 2012)
- Infrastructure and Services Alignment Plan (HNF-44238, Rev. 5, 2014)
- Sitewide Institutional Control Plan for Hanford Site CERCLA Response Action (DOE/RL-2001-41, Rev. 7, 2014)
- Central Plateau Cleanup Completion Strategy (DOE/RL-2009-81, Rev. 0, 2009)
- Hanford Site Active Cleanup Footprint Reduction (DOE/RL-2010-18, Rev. 1, 2011)
- Hanford Site Third CERCLA Five-Year Review Report (DOE/RL-2011-56, Rev. 1, 2012)

Appendix A contains a summary of each reference document identifying its purpose/need, status, potential mission effect on Hanford, and relationship to land-use (i.e., map, designations, policies, and procedures).

In some cases decisions have not been finalized and the best available information is considered. For example, a NEPA document under preparation regarding a land conveyance EA is noted, however, no decision has been made at this point.

The strategic and long-range planning documents provide a comprehensive overview for completing Hanford cleanup including the transition to post-cleanup activities.

Land use is an important factor in making cleanup decisions because remedial action objectives reflect reasonably anticipated future land use(s). Hanford currently has CERCLA interim records of decision (RODs) defining cleanup levels for most of the Hanford Site. Many of the interim RODs were issued prior to development of the HCP-EIS and associated NEPA ROD establishing the CLUP. For these interim RODs, the land use for the 100 Area National Priorities List Operable Units (NPL OUs) was based on unrestricted use, while the 200 Area and 300 Area NPL OUs were based on industrial use. Final CERCLA RODs will be issued in the future based on the performance of remedies selected through interim RODs to ensure the protection of human health and the environment in accordance with established remedial action goals, objectives, and cleanup levels. The protectiveness of selected remedies is evaluated, and adjusted as needed, through CERCLA Five-Year Reviews. Although cleanup may have occurred to levels greater than that required by subsequent land-use designations established in the HCP-EIS ROD (e.g., cleanup to unrestricted use levels in areas designated for industrial land-use), such cleanup does not change land-use in accordance with the CLUP map, designations, policies, and procedures. Existing cleanup decisions and future cleanup actions at Hanford are discussed in the *2014 Hanford Lifecycle Scope, Schedule, and Cost Report.*

Common to the remedial action objectives, cleanup goals, and cleanup decisions for Hanford is the need to support anticipated future land uses consistent with the CLUP. In the 2008 SA, DOE found that other regulatory processes followed at the Hanford Site, such as CERCLA, RCRA, and the Tri-Party Agreement (TPA) have provided opportunities for stakeholder participation in decision-making and have been used effectively to determine whether proposed activities at the Hanford Site are consistent with the CLUP. .

In addition to the documents listed above, Table 1 lists new information and changed circumstances, and provides a comparison of the new information and changed circumstances by resource area for the HCP-EIS, 2008 SA, and 2015 SA. This SA focuses on determining whether changes in proposed actions

are “substantial” and relevant to environmental concerns or whether changed circumstances or new information relevant to environmental concerns and bearing on the proposed action or its effects are “significant” to determine whether a supplemental or new HCP-EIS is required. If the new information or changed circumstances is not significant or substantial such that a supplemental or new EIS is not required, then no further documentation is necessary.

“Significance” is a key test in developing conclusions based on an SA. This term requires consideration of both context and intensity, as described in 40 CFR 1508.27. Context means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. Intensity refers to the severity of effect. The following were considered as a function of resource area in analyzing context and intensity of new information and changed circumstances in this SA:

1. Effects that may be both beneficial and adverse. A significant effect may exist even if the federal agency believes that on balance the effect will be beneficial.

2. The degree to which the proposed action affects public health or safety.

3. Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.

4. The degree to which the effects on the quality of the human environment are likely to be highly controversial.

5. The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.

6. The degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration.

7. Whether the action is related to other actions with individually insignificant but cumulatively significant effects. Significance exists if it is reasonable to anticipate a cumulatively significant effect on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

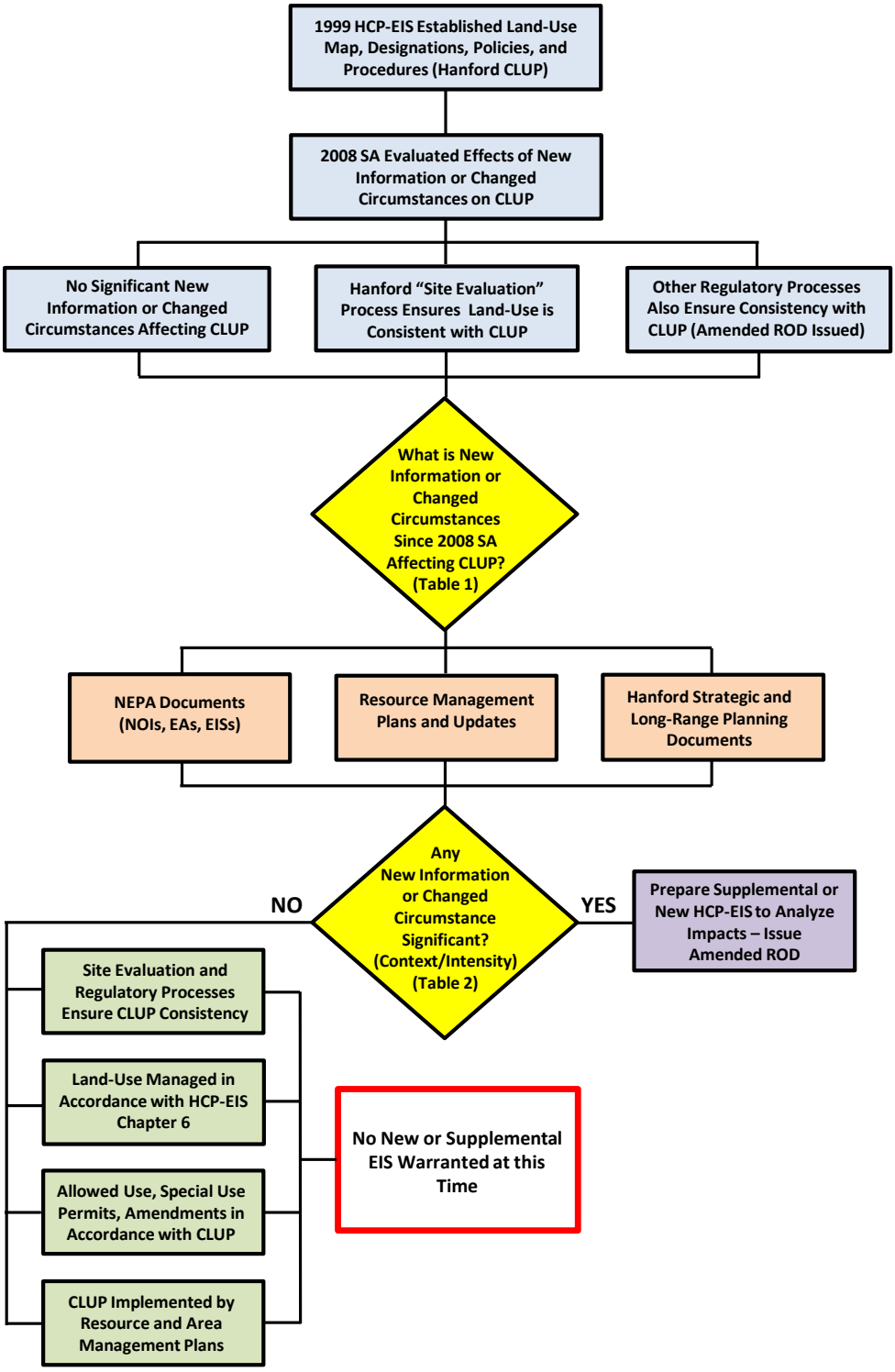
8. The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

9. The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.

10. Whether the action threatens a violation of federal, State, or local law or requirements imposed for the protection of the environment.

Figure 2 depicts the methodology used to prepare this SA. Table 2 summarizes new information and changed circumstances by resource area based on consideration of context and intensity.

Figure 2. 2015 HCP-EIS SA PROCESS FLOW DIAGRAM



.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
Land Use	Land use areas include reactor operations, waste operations, administrative support, operations support, sensitive areas, and undeveloped areas; eventually led to land-use designations established by the CLUP.	CLUP map, designations, policies, and procedures established by HCP-EIS; no amendments to CLUP in accordance with Chapter 6 of the HCP-EIS; no significant new information or changed circumstances that would affect the CLUP.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Remedial activities focused within or near previously disturbed areas.	Effects of remedial actions, including groundwater, addressed by CERCLA/TPA processes; cleanup levels established, in part, by intended land use designations established by CLUP; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures; HCP-EIS amended ROD to allow use of other regulatory processes (i.e., RCRA, CERCLA, TPA) to ensure consistency with CLUP land use map, designations, policies, and procedures. Some CERCLA/TPA cleanup to more restrictive levels than required by CLUP designations; consistent with CLUP; does not change land use as designated; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Much of Hanford Site undeveloped providing safety and security buffer.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures. Any proposals for increased public and tribal access may be affected by need to maintain safety and security buffer zones.
	Public access to most facility areas is restricted; controlled public access in industrial and recreation land-use areas envisioned.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Any proposals for increased public and tribal access may be affected by need to maintain safety and security buffer zones; consistent with CLUP discussing limited/controlled public access in areas designated for recreation, conservation, and preservation; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
	Alternatives analyzed establish acceptable land uses at Hanford for 50 years.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Nonconforming land uses identified.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	USFWS initiating a Comprehensive Conservation Plan and EIS for the Hanford Reach National Monument.	Hanford Reach National Monument Established by Presidential Proclamation for preservation; subsequent memo to expand monument lands with similar land; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. Draft Hanford Reach National Monument Comprehensive Conservation Plan and EIS; being prepared consistent with CLUP.	USFWS Final Comprehensive Conservation Plan and EIS for Hanford Reach National Monument and USFWS ROD issued; DOE participated as a cooperating agency; however, DOE did not adopt the EIS or issue a ROD; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Established a land use map addressing Hanford as five geographic areas: Wahluke Slope, Columbia River Corridor, Central Plateau, all other areas of Hanford, and Fitzner-Eberhardt Arid Lands Ecology (ALE) Reserve.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Proposed land conveyance to TRIDEC (77 FR 58112, Notice of Intent to Prepare an EA for Proposed Conveyance of Land at Hanford, DOE/EA-1915); being prepared consistent with CLUP;
	Established a set of nine designations that define permissible land uses for each geographic area; some modification of land-use designations based on public comments.	300 Area Industrial Reuse Study by City of Richland – DOE anticipates possible future 300 Area missions, no plans to transfer land out of DOE control; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Established policies directing land use actions that collectively advance the CLUP in accordance with the HCP-EIS ROD.	Reassignment of land from DOE-EM to DOE-SC to continue science and technology mission at PNNL; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	U.S Navy Final EA for Combined Community Communications Facility and Infrastructure Cleanup on ALE Reserve and FONSI issued (DOE/EA-1660); return portions of land to preservation status from nonconforming/preexisting industrial land use; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
			Final EA of Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise; disposal in Trench 94 in 200 East Area; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Established procedures to review and approve land use requests.	Real estate licenses, permits, and easements issued by DOE; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. Land transfers including old railroad right-of-way to private owner and land near HAMMER Training Facility to National Utility Training Services; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	Land use decisions continue to be made by multidisciplinary Site Evaluation Team; (See Section 1.1.1) consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. 200 Area Evaporative Sewage Lagoon proposed construction site moved by Site Evaluation Team avoiding potential impacts to 30 acres of critical shrub-steppe habitat; new location was an area impacted by wildfire removing the vegetation; extensive cultural resource investigations were conducted; land use conducted consistent with the existing CLUP policies and procedures and following appropriate NEPA review.
	Together these four elements (i.e., land use map, designations, policies, and procedures) create the CLUP.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Reflects expansion of USFWS wildlife refuge for preservation and Hanford buffer zone uses; wildlife refuge includes Wahluke Slope, Columbia River islands not in Benton County, Riverlands, McGee Ranch, and ALE Reserve.	Hanford Reach National Monument Established by Presidential Proclamation for preservation; subsequent memo (see Section 2.2.2.2) to expand monument lands with similar land; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Several EISs and RODs issued committing 200 Areas to continued waste management (i.e., industrial-exclusive land use designation).	Draft Tank Closure and Waste Management EIS being prepared; consistent with CLUP.	Final Tank Closure and Waste Management EIS and ROD issued (DOE/EIS-0391); consistent with CLUP; no significant new information or changed circumstances that would affect CLUP

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
			land use map, designations, policies, or procedures.
	Steam in 200 Areas is produced by oil-fired package boilers; steam in 300 Area produced by natural gas-fired package boilers; new underground natural gas pipeline installed from south Richland to 300 Area to supply natural gas in support of operating 300 Area package boilers. Preferred Alternative would not exclude commercial development of existing natural gas claims on ALE Reserve. Preservation land-use designation for ALE Reserve precludes construction of access road to claims, making future development costly. Access road and similar ground disturbances could be constructed in areas designated for Conservation (Mining).	Unaffected, CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Notice of intent issued to prepare EIS for acquisition of natural gas pipeline and natural gas utility service; (DOE has suspended work on the EIS.)
	Several landfills exist at Hanford including the low-level burial grounds, U.S. Ecology low-level radioactive waste landfill, inert/demolition waste landfill, Horn Rapids Landfill, and Central Waste Landfill (i.e., nonradioactive dangerous waste landfill [NRDWL] and solid waste landfill [SWL]). Deed restriction filed for asbestos trenches in Central Waste Landfill with Benton County Auditor's Office.	Unaffected, CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	DOE/EA-1707, Revised Draft EA for NRDWL/SWL Closure prepared; consistent with CLUP; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
Geologic Resources	Key geologic resources include soil, sand and gravel, pea gravel, basalt, and natural gas deposits, which are needed to support remedial activities or have economic value for future development.	DOE/EA-1403, EA for Use of Existing Borrow Areas (excluded Borrow Area C) issued; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. DOE/EA-1454, EA for Reactivation and Use of Three Former Borrow Sites in 100-F, 100-H, and 100-N Areas (excluded Borrow Area C) issued; consistent with CLUP no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	DOE/EA-1934, EA for Expansion of Borrow Areas on Hanford Site (excluded Borrow Area C) and FONSI issued; issued to quantify volume of pit run sand, gravel, and cobbles required to support waste site remediation and construction at Hanford; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
	Set aside portion of ALE Reserve (Borrow Area C) as quarry site instead of McGee Ranch to protect/preserve wildlife corridor and shrub-steppe habitat.	DOE/EIS-0286F, Hanford Site Solid Waste (Radioactive/Hazardous) EIS analyzed use of Borrow Area C; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. DOE/EIS-0391, Draft Tank Closure and Waste Management EIS analyzed use of Borrow Area C; being prepared consistent with CLUP.	DOE/EIS-0391, Final Tank Closure and Waste Management EIS analyzes use of Borrow Area C; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. Hanford Reach Comprehensive Conservation Plan and EIS identifies Borrow Area C for mineral resources in exchange for McGee Ranch to protect existing wildlife corridor; consistent with CLUP ; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. DOE/EA-1707, Revised Draft EA for NRDWL/SWL Closure issued 2011; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Protect unique geologic features (i.e., Gable Mountain, Gable Butte, White Bluffs, active sand dunes, etc.).	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect Missoula Flood features.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect soils from compaction and erosion.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect active sand dune stabilizing vegetation.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Below-grade ALE Reserve quarry (along State Highway 240) could be developed to provide geologic materials for site remediation, construction, and other DOE missions and governmental purposes.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Geologic resources on approximately 30 percent of Hanford lands available for commercial development; geologic features	DOE/RL-2000-61, Draft Industrial Mineral Resources Management Plan (never finalized); issued to support implementation of CLUP;	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
	with unique characteristics excluded by permitting process.	consistent with CLUP no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	
	Future development of and access to Hanford geologic resources requires review under CLUP policies and procedures controlled through issuance of excavation permits.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	See discussion of DOE/EA-1934 above.
Water Resources	Columbia River classified as Class A waters suitable for essentially all uses including raw drinking water, recreation, and wildlife habitat.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Key water resources include surface water (i.e., Columbia River, springs, and seeps) and groundwater.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect water resources from point source pollution (i.e., industrial wastewater discharges) and non-point source pollution (i.e., runoff).	DOE and State of Washington settlement agreement to combine Hanford Solid Waste EIS scope into Tank Closure and Waste Management EIS (DOE/EIS-0391); conduct new groundwater flow and contaminant transport modeling; being prepared consistent with CLUP.	Final Tank Closure and Waste Management EIS and ROD issued; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Protect water resources from inadvertent releases and permit violations.	Wastewater discharges from Hanford Site operations continue under State Waste Discharge Permit; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect wetland vegetation from trampling and increased siltation of water.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect groundwater from consumptive uses and changes to groundwater flow patterns.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Avoid increased infiltration and contaminant migration.	Wastewater discharges from Hanford Site operations continue under State Waste Discharge Permit; consistent with CLUP; no significant new information or changed	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
		circumstances that would affect CLUP land use map, designations, policies, or procedures.	
	Protect shoreline from erosion and water from pollution with increased recreational access (i.e., new boat ramps).	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Any proposed increase in public and tribal access to Columbia River shoreline for recreational activities would be evaluated for consistency with CLUP land use map, designations, policies, or procedures.
Air Resources	Not evaluated under Environmental Consequences.	Unaffected, CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. • Any proposed increase in public and tribal access would be evaluated for such things as the need to establish safety buffer zones to reduce potential public exposures to airborne radioactive or hazardous pollutants; • Any reductions in safety buffer zones may require upgrades to safety class systems, structures, and components to ensure adequate protection of public from airborne radioactive or hazardous pollutants; • Any increase in public and tribal access may affect Hanford Site Air Operating Permit, Radioactive Air Emissions License (FF-01), and/or RCRA Permit.
Biological Resources[1]	Hanford contains much of remaining undisturbed Columbia Basin shrub-steppe habitat.	See discussion of wildfires below.	DOE/EA-1728, EA for Integrated Vegetation Management on the Hanford Site and FONSI issued to protect, preserve, and restore critical shrub-steppe wildlife habitat using physical, chemical, and biological methods; prescribed burning; and revegetation following cultural and ecological resource reviews; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
	Hanford contains last non-tidal and non-impounded segment of Columbia River.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Sensitive biological resources are present at Hanford in association with the Columbia River, basalt outcrops and talus slopes such as Gable Butte and Gable Mountain, sand dunes, low elevation deep soils, and other unique features.	U.S. Department of the Interior removed American Bald Eagle from Federal List of Threatened and Endangered Wildlife and Plants; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	Two new plant species (Umtanum desert buckwheat and White Bluffs bladderpod) listed as threatened by US Fish and Wildlife Services; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Biological resources are classified by level of concern under the Biological Resources Management Plan (DOE/RL-96-32).	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Biological Resources Management Plan revised and considers changes to land due to wildfires and other land disturbances; BRMP is a resource management plan issued to implement the CLUP; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Protect native plant and animal communities and wildlife habitats from displacement by industrial development.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	See discussion of DOE/EA-1915, Land Conveyance EA under “Land Use” above; ecological resource review will be conducted.
	Prevent habitat fragmentation and reduction of biodiversity at Hanford.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	See discussion of DOE/EA-1728 above.
	Protect wildlife and habitats from recreational uses in areas not currently accessible to the public.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures. Limited and controlled public and tribal access consistent with CLUP.
	Presence of non-native plant species and changing land-use practices have altered the frequency and severity of wildfires; less frequent and more severe fires have reduced the ability of the native habitat to recover from fire, as well as the development of late successional shrub-steppe habitat.	24 Command wildfire burned nearly 300 square miles; including portions of ALE Reserve and Hanford Reach National Monument; Wautoma wildfire burned 67,000 acres; including portions of ALE Reserve, Hanford Reach National Monument, and Hanford Site; natural (i.e., lightning) and man-made (i.e., vehicle accidents, cigarettes, etc.) wildfires periodically occur at Hanford and damage biological resources, but have not changed land use; any changes to land use are evaluated for consistency with the CLUP; no	Small wildfires continue to occur from man-made or natural causes; no land use changes have occurred; any change to land use is evaluated for consistency with the CLUP. Site Evaluation Team review considers optimal use of wildfire damaged areas to avoid impacts the ecosystem (e.g., construction of 200 Area Sewage Lagoon in area damaged by wildfire following extensive cultural and ecological review to avoid damage of shrub-steppe habitat at original construction site);

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
		significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	land use conducted consistent with the CLUP and following appropriate NEPA review. Hanford Site Wildland Fire Management Plan (HNF-8599) issued annually that manages biological resources and protects cultural resources in addition to infrastructure; consistent with CLUP no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. See discussion of DOE/EA-1728 above.
Cultural Resources	Cultural resources at Hanford have been preserved by site access restrictions.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Any increase in public and tribal access may be affected by need to maintain safety and security buffer zones; consistent with CLUP discussing limited/controlled public access in areas designated for recreation, conservation, and preservation; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Preservation of Hanford Reach as last free-flowing stretch of Columbia River protects cultural resources associated with river banks and islands.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Biological resources at Hanford are important to Tribes for traditional subsistence uses.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Protect cultural resources from damage or destruction; especially along Columbia River, where cultural resources and traditional Tribal uses are concentrated, and traditional cultural properties (e.g., Rattlesnake Mountain, Gable Mountain, Gable Butte, *Mooli Mooli*, etc.).	Completed development of Gable Mountain and Gable Butte Resource Management Plan (DOE/RL-2008-17) addressing cultural issues as supplemented by Hanford Cultural Resources Management Plan (DOE/RL-98-10); these resource management plans implement the CLUP; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. DOE has engaged local Tribes through NHPA Section 106 consultation process regarding	National Register Determination of Eligibility for Rattlesnake Mountain as traditional cultural property; consistent with CLUP designating a preservation land use; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures. 2015 NDAA provision to provide motorized public access will be evaluated by USFWS through its NEPA process. Reevaluation of “Mooli Mooli” traditional cultural property boundary undertaken and

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
		proposed use of Borrow Area C in coordination with Tank Closure and Waste Management EIS; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	updated registration form submitted for approval; consistent with CLUP ; located in an area designated for conservation and the protection of natural, biological, and cultural resources; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Protect archaeological and historic sites from damage by industrial development.	Land reassignment from DOE-RL to PNSO (DOE/EA-1562) including a 230 acre expansion area designated as preservation to protect a historic Native American cemetery; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	247 full cultural resource reviews completed covering an additional 19,079 acres at Hanford; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Protect cultural resources from damage by trampling or vandalism with increased public access.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Any proposed increase in public and tribal access to Columbia River shoreline for recreational activities will require controls to avoid potential cultural resource effects due to damage by trampling or vandalism.
Socioeconomics	Socioeconomics study area used for the purpose of socioeconomics analysis included Benton, Franklin, and Grant counties.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.
	Environmental Justice analysis performed to identify any disproportionately high and adverse human health or environmental effects on minority or low-income populations and for tribal members with reserved treaty rights.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.
	Future development of Hanford lands could accelerate the transition to a diversified economy and increase demand for services and infrastructure.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; see discussion of land conveyance EA under “Land Use” above.
Aesthetic/Visual Resources	Key visual and aesthetic resources include view locations, viewsheds, visibility (ambient air quality), odors, and ambient noise levels.	Construction and demolition activities considered during work planning; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Visual and aesthetic resources are affected by altering viewsheds through development or	Reviewed in HCP-EIS and Solid Waste EIS; consistent with CLUP; no significant new	Unaffected; no significant new information or changed circumstances that would affect the

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
	mining; atmospheric pollutants affect visibility or odor; fugitive dust from construction sites affect visibility; development, mining, or recreation in areas that are typically quiet affect noise.	information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	CLUP map, designations, policies, or procedures.
	Future development of Hanford lands could increase ambient noise levels and alter viewsheds and reduce aesthetic value by increasing airborne particulate, odors, or other pollutants.	Activities at Borrow Area C could affect viewshed of Rattlesnake Mountain; appropriate documentation and mitigation measures would be developed in consultation with the SHPO and local American Indian Tribes; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	Unaffected; aesthetic and visual resources addressed in Tank Closure and Waste Management EIS; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
Noise/Vibration	See Aesthetic/Visual Resources	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances. LIGO sensitivity to noise and vibrations; review of proposals for work performed near LIGO for potential effects to ongoing experiments; consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures
Environmental Monitoring	Environmental surveillance at Hanford includes monitoring for radiological and nonradiological constituents and monitoring of external radiation, air, surface water, groundwater, soil, vegetation, wildlife, and regional food and farm products.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.
	Monitoring is performed to ensure protection of human health and safety and is conducted in compliance with DOE Orders.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.	Unaffected; CLUP land use map, designations, policies, or procedures are unaffected by new information or changed circumstances.
Contamination	Three operating areas of Hanford (the 100, 200, and 300 Areas) are still on the EPA's National Priorities List (NPL); portions of 100 Areas and the entire 1100 Area have been remediated and removed.	Reductions in level of contamination due to ongoing site remediation efforts; cleanup levels established consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.	Unaffected; reductions in level of contamination due to ongoing site remediation efforts continues; cleanup levels established consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.

TABLE 1. COMPARISON OF 1999 HCP-EIS, 2008 SA, and 2015 SA BY RESOURCE AREA			
RESOURCE AREA	**1999 HCP-EIS (Baseline Information)**	**2008 SA (New Information or Changed Circumstances)**	**2015 SA (New Information or Changed Circumstances)**
	Radioactive and hazardous materials have been disposed to the ground during active Hanford Site operations resulting in contamination of vadose zone and groundwater.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	Risks due to exposure to residual contamination after completion of CERCLA activities dependent on level of access to any area where residual contamination remained.	Land-use designations under the CLUP for the locations being cleaned up have not been changed despite analysis of various risk assessment exposure scenarios which may include other hypothetical future land uses. As the clean-up progresses over the foreseeable future, DOE will continue to monitor those decisions and actions for consistency with the CLUP; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; any proposals for increase in public and tribal access will need to consider institutional controls and safety buffer zones where residual contamination exists until final remediation is completed; cleanup levels established consistent with CLUP; no significant new information or changed circumstances that would affect CLUP land use map, designations, policies, or procedures.
	Health risks from the new wastes would be principally to workers and could include physical hazards and latent cancer fatalities from waste management activities.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; no significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.
	To protect the public from routine or accidental releases of radiological contaminants and/or hazardous materials, protective measures and buffer zones for waste remediation, processing, and disposal facilities are required by DOE Orders.	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; any proposals for increase in public and tribal access will need to consider institutional controls and safety buffer zones where radiological contamination exists.
	Buffer zones necessary to protect human health and safety in potential accidents are divided into two main components — an inner exclusive-use zone (EUZ) and an emergency planning zone (EPZ).	No significant new information or changed circumstances that would affect the CLUP map, designations, policies, or procedures.	Unaffected; any proposals for increase in public and tribal access will need to consider institutional controls and safety buffer zones with regard to accident potential.

NOTES:

(1) While wildfires temporarily impact the land itself and resident wildlife, the CLUP land use map, designations, policies, and procedures do not change. Resource management plans (e.g., Biological Resources Management Plan, DOE/RL-96-32) provide guidelines to protect, preserve, and restore plant and animal habitats lost to wildfires and other land disturbances consistent with the CLUP. Updates to resource management plans consider changes that have occurred to the land cover and species distribution and provide protocols, policies, and procedures for protecting and sustaining native species and their habitats on the Hanford Site. Vegetation management conducted at Hanford (DOE/EA-1728) is aimed at reducing wildfires and supporting a healthy environment typical of a shrub-steppe ecosystem.

Table 2 - SIGNIFICANCE OF NEW INFORMATION AND CHANGED CIRCUMSTANCES BY RESOURCE AREAS[1]											
Resource Area[1] and Considerations	Context	Intensity									
		Beneficial or Adverse Effects	Public Health & Safety	Unique Features of Geographic Area	Effects on Human Environment Controversial	Unique or Unknown Risks	Precedent for Future Actions	Related to Other Actions	Affects Cultural Resources	Affects Biological Resources	Violates Federal, State, or Local Laws
LAND USE[2]											
Site Access and Tours	Onsite effects	Beneficial for public relations; and local economy; potential adverse effects on public health/safety, natural, cultural, and biological resources.	Increase public risk of exposure to routine/accidental release of radiological or hazardous materials if safety buffer zones are reduced.	Hanford contains unique/interesting features of public and tribal interest including historic sites and sites of cultural, ceremonial, religious, and other significance.	Any increase in public and tribal access to Hanford; will be evaluated to avoid adverse effects on human health or the environment.	Site access will require controls to help ensure no adverse effects on human health or the environment.	Any increase in public and tribal access to Hanford will be evaluated to avoid adverse effects; B Reactor National Historic Landmark with public tours; also see information under Manhattan Project National Park.	See Precedent for Future Actions.	Any increase in public access will be evaluated to avoid adverse effects to cultural resources through damage or vandalism; control of access required; traditional cultural properties (Gable Mountain, Gable Butte, Rattlesnake Mountain, Mooli Mooli, etc.) need to be protected.	Any increase in public access will be evaluated to avoid adverse effects to biological resources through trampling or removal; control of access required; cultural plants, threatened and endangered plants, state and federal listed plants need to be protected.	Consistent with DOE 2015 Vision and desires of public and tribal entities.
Manhattan Project National Historical Park	Onsite effects	Beneficial effects by preserving Hanford Site historic buildings and sites for public access and tours.	Aging Hanford historic facilities may require some structural upgrades to ensure public health and safety or have limited and controlled access.	Hanford rich in historic facilities (i.e., Surplus Reactor, Canyon Buildings) that supported Manhattan Project; remnants of old town sites of historic interest (i.e., Bruggeman Warehouse, Hanford High School, Allard Pump House, White Bluffs Bank, etc.).	Effects of Manhattan Project National Park on Human Environment will be evaluated by NPS through its NEPA process; facilities such as the B Reactor have been designated National Historic Landmarks open to controlled public access and tours; National Park Service would operate as part of National Parks system.	No unique or unknown risks; facilities would be renovated to preserve their historic nature and character for the public to enjoy; Manhattan Project National Park would be operated as part of the National Park Service system.	Establishment of the Manhattan Project National Park to include B Reactor, and T-Plant, possibility of adding other historic Hanford facilities, as funding permits (e.g., Bruggeman Warehouse, Hanford High School, Allard Pump House, White Bluffs Bank, etc.); any facilities will remain in DOE ownership who will maintain them, preserve important historic resources at the sites, ensure visitor and employee safety, and request necessary funding.	Manhattan Project National Park is an initiative that includes facilities at other DOE Complex (e.g., Oak Ridge, and Los Alamos.).	Manhattan Project National Park effects on cultural resources will be evaluated by NPS through its NEPA process; public access would need to be controlled to avoid potential adverse effects to surrounding cultural resources.	Manhattan Project National Park effects on biological resources will be evaluated by NPS through its NEPA process; public access would need to be controlled to avoid potential adverse effects to surrounding biological resources.	Consistency with federal, state, and local laws for cultural resource protection including NHPA, 36 CFR 800, and others will be evaluated by NPS through its NEPA process; consistency with federal, state, and local laws for biological resource protection including Endangered Species Act, Migratory Bird Treaty Act, and others will be evaluated by NPS through its NEPA process.
GEOLOGIC RESOURCES											
Borrow Pits	Onsite effects	Borrow pits have beneficial effects by providing mineral resources required for site remediation, restoration, and closure; supports ongoing	Public is not allowed access to Hanford borrow pits; mitigation measures used to minimize fugitive dust concerns.	Hanford's glaciofluvial environment is conducive to sand, gravel, and cobble borrow pits throughout the site; deep deposits of silt loam	Existing borrow pits do not have controversial effects on the human environment; borrow pits are contoured and revegetated when	No unique or unknown risks; establishment of a borrow pit at some Hanford Site locations could potentially affect natural wildlife corridors identified	Identification and establishment of suitable borrow pit(s) for silt loam soils is critical to support design and construction of surface barriers needed for site	Need for silt loam soils to support site remediation and closure has been discussed in numerous Hanford Site EAs and EISs; near-term need for silt loam soils to	Several Hanford Site locations have the potential to be sources of silt loam soil due to deep deposits; other silt loam soils exist in thin veneers across the Hanford Site	Several Hanford Site locations have the potential to be sources of silt loam soil due to deep deposits; other silt loam soils exist in thin veneers requiring	Consistent with federal, state, and local laws for cultural resource protection including NHPA, 36 CFR 800, and others; consistent with federal, state,

Table 2 - SIGNIFICANCE OF NEW INFORMATION AND CHANGED CIRCUMSTANCES BY RESOURCE AREAS[1]												
Resource Area[1] and Considerations	Context	Intensity										
		Beneficial or Adverse Effects	Public Health & Safety	Unique Features of Geographic Area	Effects on Human Environment Controversial	Unique or Unknown Risks	Precedent for Future Actions	Related to Other Actions	Affects Cultural Resources	Affects Biological Resources	Violates Federal, State, or Local Laws
		maintenance and construction activities; borrow pits contoured and revegetated when no longer needed to minimize adverse effects; use controlled by excavation permits to minimize adverse effects.		materials needed for surface barrier construction only available in a few locations on Hanford Site along State Highways 24 and 240; unique features include Gable Mountain, Gable Butte, Rattlesnake Mountain, and active sand dunes.	no longer in use; access to silt loam soil in some areas of the Hanford Site may be controversial due to potential tribal concerns and potential effects on biological resources (DOE/RL-98-10) or traditional cultural property viewsheds (DOE/RL-96-32).	by the U.S. Fish and Wildlife Service; establishment of a borrow pit at some Hanford Site locations has potential effects on ecological resources and traditional cultural property viewsheds.	remediation and closure; failure to identify adequate onsite sources of silt loam would increase the cost for site remediation and closure due to need to amend less suitable soils or use offsite resources.	support closure of NRDWL/SWL landfill.	requiring disturbance of large surface areas and potential effects on cultural resources; potential effects on traditional cultural properties and viewsheds should be considered when establishing silt loam borrow sources.	disturbance of large surface areas and potential effects on biological resources.	and local laws for biological resource protection including Endangered Species Act, Migratory Bird Treaty Act, and others.
WATER RESOURCES												
No new information or changed circumstances with respect to water resources were identified. See Section 2.1.5												
AIR RESOURCES												
No new information or changed circumstances with respect to air resources were identified. See Section 2.1.5. .Any proposal to increase access to Hanford must consider potential effects on the Hanford AOP, FF-01 radioactive air emissions license, and RCRA Permit as a result of potentially changing site boundaries and the distance to the MEI. Consideration should also be given to potential effects of fugitive dust on cultural viewsheds.												
BIOLOGICAL RESOURCES												
Biological Resources Management	Onsite effects	Beneficial effects; biological resources in hierarchal levels of protection; recognizes status as sensitive, review, threatened, endangered, or otherwise listed and protected species by federal, state, and local agencies.	Proper vegetation management reduces presence of noxious/invasive species; reduces wildfire hazards; encourages establishment of shrub-steppe habitat lost to wildfire and other disturbances.	Hanford has large contiguous areas of priority shrub-steppe habitat identified for conservation and preservation; Hanford Reach National Monument established by Presidential Proclamation to protect, preserve, and expand critical shrub-steppe habitat and other cultural and biological resources.	Not controversial; proper vegetation management reduces presence of noxious/invasive species; reduces wildfire hazards; encourages establishment of shrub-steppe habitat lost to wildfire and other disturbances.	No unique or unknown risks; proper vegetation management reduces presence of noxious/invasive species; reduces wildfire hazards; encourages establishment of shrub-steppe habitat lost to wildfire and other disturbances.	Sub-tier resource management plan from HCP-EIS; DOE committed to biological resource protection and will avoid, minimize, eliminate, rectify, or compensate for potential effects; projects reviewed for effects on biological resources prior to initiating activity; if effects cannot be avoided, eliminated, or minimized, then rectification occurs onsite or compensation occurs offsite in mitigation areas .	Same as Precedent for Future Action.	Some biological resources are of cultural significance due to their use for subsistence, as medicines, or in ceremonies of cultural, religious, or other significance; tribal consultation under NHPA Section 106 serves to identify sensitive biological species and Programmatic Agreements or Memorandums of Agreement are negotiated for their protection and mitigation.	Conservation and preservation of level 4/5 biological resources critical to protecting rare and sensitive species and habitats that are irreplaceable and at risk of extirpation or extinction; maintain biodiversity and ecological integrity at Hanford; consistent with Presidential Proclamation establishing Hanford Reach National Monument and expansion of Monument lands.	Consistent with applicable federal, state, or local laws; consistent with the Presidential Proclamation establishing the Hanford Reach National Monument and Presidential memorandum calling for its expansion with biological resource areas with similar characteristics.
Mitigation Areas (see Section 2.1.3)	Onsite effects	Beneficial effect; protect, preserve, and expand Level 4/5 biological	Reduce cheatgrass in favor of shrub-steppe habitat;	Hanford has large contiguous areas of shrub-steppe habitat; difficult to	Positive effect; protection of shrub-steppe habitat is not	No unique or unknown risks; protection of shrub-steppe	Protect/preserve shrub-steppe habitat when project effects	Existing Level 4/5 biological resources designated for	Cultural resources review prior to planting per BRMP, Cultural Resources	Protects/restores shrub-steppe habitat lost to natural and	Consistent with ESA, CERCLA Natural Resource Damage

Table 2 - SIGNIFICANCE OF NEW INFORMATION AND CHANGED CIRCUMSTANCES BY RESOURCE AREAS[1]											
Resource Area[1] and Considerations	Context	Intensity									
		Beneficial or Adverse Effects	Public Health & Safety	Unique Features of Geographic Area	Effects on Human Environment Controversial	Unique or Unknown Risks	Precedent for Future Actions	Related to Other Actions	Affects Cultural Resources	Affects Biological Resources	Violates Federal, State, or Local Laws
		resources; expand shrub-steppe habitat.	reduce wildfire fuel and hazards.	replace; helps biodiversity.	controversial; helps biodiversity and reduce habitat fragmentation.	habitat well known; refer to BRMP for guidance.	cannot be avoided or eliminated.	preservation may be included in Hanford Reach National Monument lands.	Management Plan, and Hanford Revegetation Manual.	manmade events; expands Level 4/5 biological resources; helps biodiversity; reduce habitat fragmentation	Assessment, and other applicable laws.
Wildfires	Onsite and offsite effects	Adverse effects to human health environment, structures, and infrastructures.	Increased onsite and offsite risk of property damage, respiratory effects, and threats to personal safety.	Hanford has been affected by many wildfires; resulted in loss of shrub-steppe habitat; during the period from 1990 through 2010 a total of 302 wildfires have burned an estimated 340,983acres.	Effects of wildfire on human health and the environment are not controversial; effects are well studied and understood.	Effects of wildfire are not unique or unknown.	Wildfires destroy desirable shrubs, grasses, and forbs; fire disturbed areas can repopulate with annual grass species (cheatgrass) that increase wildfire fuel and hazards.	Hanford has integrated vegetation management to replace wildfire fuel with desired shrubs, grasses, and forbs using physical, chemical, biological methods, prescribed burning, and revegetation (DOE/EA-1728).	Wildfires can have direct negative effects on cultural resources; indirect effects due to firefighting methods and equipment can cause damage or displacement of artifacts affecting their context and interpretation.	Wildfires can have direct negative effects on biological resources; some grasses may resprout, shrubs can be permanently damaged and require revegetation to reestablish; can affect shrub-steppe habitat and cause fragmentation of ecosystems.	Protection against wildfires consistent with DOE Orders for asset protection; consistent with federal, state, and local laws calling for protection of human health and the environment.
CULTURAL RESOURCES											
Cultural Resource Program	Onsite effects	Beneficial effects for cultural and historic resources include their consideration in DOE decisions.	No anticipated effects of cultural resources on public health and safety at Hanford.	Hanford is rich in cultural resources; most prominent land forms include Gable Mountain, Gable Butte, and Rattlesnake Mountain; other historic resources include B Reactor National Historic Landmark, the cocooned 100 Area Reactors, Bruggeman's Warehouse, Hanford High School, White Bluffs Bank, and others.	DOE committed to protecting cultural resources at Hanford; cultural resource reviews required prior to initiating projects in accordance with NHPA Section 106 and 110; potential adverse effects addressed through Programmatic Agreement or Memorandum of Agreement; cultural resource protection and curation underway at Hanford. The various opportunities for tribal consultation reduces the level of potential controversy;	No unique or unknown risk; see Effects on Human Environment Controversial and Affects Biological Resources.	See Effects on Human Environment Controversial and Affects Biological Resources.	See Effects on Human Environment Controversial and Affects Biological Resources.	See Effects on Human Environment Controversial.	Some biological resources are of cultural significance due to their use for subsistence, as medicines, or in ceremonies of cultural, religious, or other significance; tribal consultation under NHPA Section 106; potential adverse effects addressed through Programmatic Agreements or Memorandums of Agreement.	Consistent with federal, state, and local laws for cultural resource protection including NHPA, 36 CFR 800, and others
SOCIOECONOMICENVIRONMENT											

Table 2 - SIGNIFICANCE OF NEW INFORMATION AND CHANGED CIRCUMSTANCES BY RESOURCE AREAS[1]											
Resource Area[1] and Considerations	Context	Intensity									
		Beneficial or Adverse Effects	Public Health & Safety	Unique Features of Geographic Area	Effects on Human Environment Controversial	Unique or Unknown Risks	Precedent for Future Actions	Related to Other Actions	Affects Cultural Resources	Affects Biological Resources	Violates Federal, State, or Local Laws
No new information or changed circumstances with respect to socioeconomics environment were identified. See Section 2.1.5.											
AESTHETIC/VISUAL RESOURCES											
No new information or changed circumstances with respect to aesthetic and visual resources were identified. .See Section 2.1.5.											
NOISE/VIBRATION											
No new information or changed circumstances with respect to noise and vibration were identified. See Section 2.1.5.											
ENVIRONMENTAL MONITORING											
No new information or changed circumstances with respect to environmental monitoring were identified. See Section 2.1.5.											
CONTAMINATION											
No new information or changed circumstances with respect to contamination were identified. See Section 2.1.5.											

[1]See Section 2.1 for more detailed information on each resource area.

[2]Sufficient project descriptions will be necessary in order to determine the appropriate level of NEPA analysis for any proposals such as increased public access to the Hanford Site.

2.0 ENVIRONMENTAL RESOURCE AREA ANALYSIS AND OTHER NEPA CONSIDERATIONS

The 2008 SA (DOE/EIS-0222-SA-01) evaluated whether actions/decisions in the intervening years since issuance of the HCP-EIS and ROD have affected those same resource areas as they relate to the four key elements of the CLUP (land-use designation, map, policies, and implementing procedures).

In the 2008 SA, DOE did not find actions or decisions made since the HCP-EIS was issued in 1999 that affected the resource areas as they relate to CLUP land-use designations or the land-use map. There were instances where impacts occurred on Hanford lands (e.g., the 24 Command Wildfire in FY 2000 and the Wautoma Wildfire in FY 2007); however, no change in CLUP land-use designations or the land-use map resulted. The 2008 SA found that current resource management plans continue to be used as guidelines in protecting and sustaining native species and their habitats on the Hanford Site, consistent with the HCP-EIS and associated CLUP land use policies and procedures.

For this 2015 SA, the analysis evaluates past and reasonably foreseeable actions and their effects on the four key CLUP elements (i.e., land use designations, map, policies, and implementing procedures) since the HCP-EIS and ROD, as discussed in Section 1.1.2.

2.1 Environmental Resource Area Analysis

Each of the resource areas below are evaluated in the previous two tables that compare the 1999 HCP-EIS, 2008 SA, and this 2015 SA; and address the significance of new information and changed circumstances. The narrative that follows provides additional information for the environmental resource areas.

2.1.1 Land Use

In the 2008 SA DOE determined that land use at Hanford has remained consistent with land-use designations, map, policies, and procedures established by the CLUP.

Certain activities occurring at Hanford may have a positive effect on future land use. For example, remediation efforts at Hanford could facilitate potential reuse or restoration of land consistent with the land use designations, map, policies and procedures described in the HCP-EIS. Reuse of land may avoid the need to develop other possibly undisturbed areas minimizing potential impacts to natural, biological, and cultural resources. Restoration of remediated sites would return some land to more natural conditions typical of the shrub-steppe ecosystem at Hanford.

Hanford lands have been identified as high value for biodiversity and habitat connectivity by the Arid Lands Initiative (a public, private, and tribal partnership) and the Washington Connected Landscapes Project (led by the Washington Wildlife Habitat Connectivity Working Group consisting of government and non-government technical experts). The USFWS has expressed interest in surveying some areas designated for conservation by the CLUP due to the presence of shrub-steppe ecosystems and other critical habitat. Once those surveys are completed and the results of these initiatives are known, they can be used to inform future Hanford land-use decisions consistent with the CLUP map, designation, policies, and procedures.

2.1.1.1 Site Access

As cleanup in the conservation and preservation areas of the River Corridor Area of Hanford takes place, the tribes have expressed interest in consulting with DOE about the potential of returning to some of their traditional practices and lifeways, the potential use of some of the natural and biological resources used in the past, as well as the continued protection of cultural resources and sacred sites.

Members of the public, elected officials and diverse stakeholder groups have expressed their desire for additional public access to Hanford for activities such as recreation and heritage-tourism. DOE is considering providing for controlled public access and tribal use.

Increased public and tribal access were discussed in the HCP-EIS. Safety buffer zones established to protect human health and safety in accordance with safety analyses and Hanford permit requirements (e.g., Air Operating Permit [AOP], RCRA Permit, FF-01 Radioactive Air Emissions License, etc.) would need to be considered and evaluated during review of public and tribal access proposals. In addition, other site decisions (e.g., CERCLA RODs and RCRA requirements) have restrictions on access related to them; including institutional controls (DOE/RL-2001-41, Revision 7, issued May 2014). Changes in public and tribal access in general would not be expected to affect land use designations, map, policies, or procedures established by the CLUP. Limited public and tribal access is consistent with resource conservation, recreation, and preservation land-use designations in the CLUP.

2.1.1.2 Manhattan Project National Historical Park

On October 18, 2004, the 108th Congress directed the Secretary of the Interior to conduct a study on the preservation and interpretation of historic sites of the Manhattan Project for potential inclusion in the National Park System (Public Law 108-340). This act is also cited as the Manhattan Project National Historical Park Study Act.

The National Park Service prepared the Manhattan Project Sites Special Resource Study and Environmental Assessment (September 2010). DOE adopted the study, EA, and FONSI while concurring with the preferred alternative in March, 2011. Hanford structures from the Manhattan Project era addressed in the study, EA, and FONSI included the B Reactor National Historic Landmark and T Plant Canyon Building. Other historic structures from the pre-Manhattan Project town sites of Hanford and White Bluffs may be considered in the future for inclusion in the Manhattan Project National Historical Park although they were not included in the scope of the study, EA, and FONSI. Specific aspects of the historical park at Hanford will be evaluated by the National Park Service (NPS) through its NEPA process.

Senate Bill 507 was introduced to the Energy and Natural Resources Committee on March 7, 2013. The bill establishes the Manhattan Project National Historical Park in the states of Tennessee, New Mexico, and Washington, as a unit of the National Park System. It directs the Secretary of the Interior and the Secretary of Energy to enter into an agreement to govern their respective roles in administering the facilities, lands, or interests in land under DOE administrative jurisdiction that are to be included in the park.

The agreement will provide that the Secretary of the Interior "have decision making authority for the content of historic interpretation of the Manhattan Project for purposes of administering the park, and ensure that the agreement provides an appropriate role for the NPS in the preservation of the historic resources covered by the agreement." The agreement will provide that the Secretary of Energy

"protects public safety, national security, and other aspects of the ongoing mission of DOE at the Los Alamos National Laboratory, Hanford Site, and Oak Ridge Reservation; may consult with and provide historical information to the Secretary of the Interior concerning the Manhattan Project; and shall retain responsibility for any environmental remediation and structural safety that may be necessary in or around the facilities, land, or interests governed by the agreement."

The bill directs the Secretary of the Interior to consult with interested state, county, and local officials; organizations; and interested members of the public before executing any such agreement and in developing a general management plan for the Park.

The National Defense Authorization Act was passed into law on December 19, 2014. The purposes of the Act is to (1) preserve and protect nationally significant historic resources; (2) improve public understanding of the Manhattan Project and its legacy; (3) enhance public access to the historical park consistent with protection of public safety, national security, and DOE missions; and (4) assist DOE, historical park communities, historical societies, and others in efforts to preserve and protect historic resources associated with the Manhattan Project.

Section 3039(c)(1)(A) of the NDAA requires "Not later than one year after the date of enactment of this section, there shall be established as a unit of the National Park System the Manhattan Project National Historical Park." Under paragraph (c)(2)(C)(i-vi), eligible areas at Hanford, Washington, are facilities, land, or interests in land on the DOE Hanford Nuclear Reservation including the following:

(i) B Reactor National Historic Landmark;
(ii) Hanford High School in the town of Hanford and Hanford Construction Camp Historic District;
(iii) White Bluffs Bank building in the White Bluffs Historic District;
(iv) Warehouse at the Bruggemann's Agricultural Complex;
(v) Hanford Irrigation District Pump House; and
(vi) T Plant (221–T Process Building).

2.1.2 Geological Resources

The need for geologic resources reflects demands for site-wide cleanup and closure actions and facility deactivation and decommissioning (D&D). Added to these demands are those associated with construction, operation, and maintenance of site infrastructure. Future closure actions, including cleanup and restoration of closed disposal facilities, as well as final capping of closed disposal facilities or facilities that have undergone D&D but contain residual waste, represent the largest activity demands for geologic resources.

Activities related to geological resources at Hanford since the 2008 SA are addressed in two EAs; the Revised Draft Nonradioactive Dangerous Waste Landfill/Sold Waste Landfill Closure Environmental Assessment (DOE/EA-1707D) and the Borrow Pit Expansion EA (DOE/EA-1934). Both of these NEPA documents are discussed in Section 2.2 and Appendix A.

DOE/EA-1934 does not present any new information or changed circumstances that would affect land-use designations, map, policies, or procedures established by the CLUP. DOE/EA-1707D is not finalized at this time.

2.1.3 Biological Resources

Hanford is located within a region known as the Columbia Basin ecoregion. This region has been botanically characterized as a shrub-steppe ecosystem, with various shrub and bunchgrass associations playing dominant roles. Settlement during the late 19th and early 20th century resulted in significant changes to vegetation patterns. It has been estimated that approximately 60 percent of the original acreage of shrub-steppe vegetation in Washington has been lost; primarily to agriculture. The Hanford Site contains one of the largest remaining remnants of shrub-steppe vegetation in the Columbia Basin ecoregion (DOE/RL-96-32).

DOE is responsible for conserving fish, wildlife, and plant populations and their habitats at Hanford. Information about these biological resources is presented in Section 4.0 of the HCP-EIS and its companion resource management plan, DOE/RL-96-32, Rev. 1, *"Hanford Site Biological Resources Management Plan"* (BRMP).

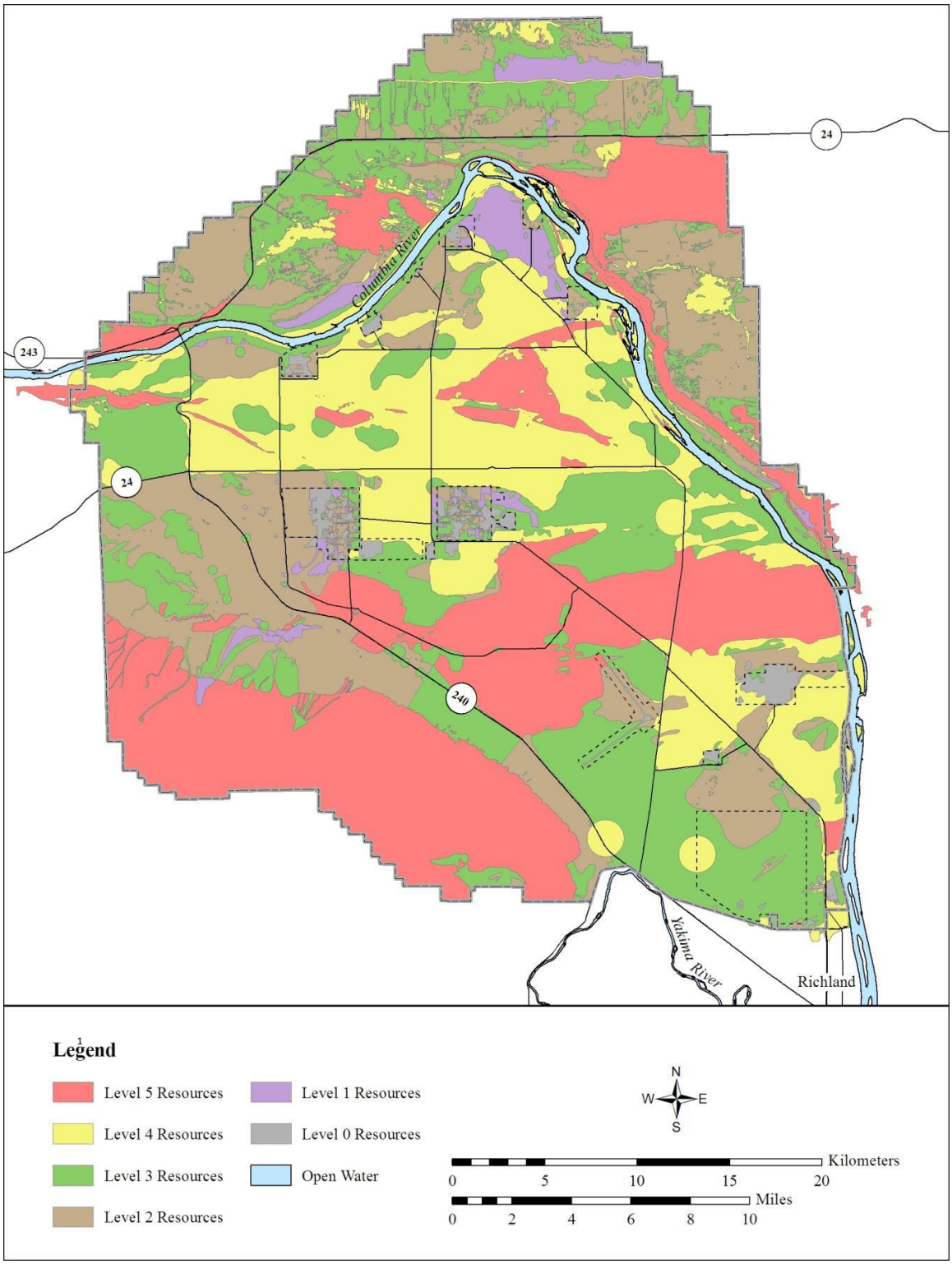
The BRMP was revised in 2013 further clarifying levels of management concern presented as hierarchical biological resource priority levels. Figure 3 depicts the integration of all biological resource levels across the Hanford landscape. The BRMP stated that there are two federal proposed-threatened terrestrial plant species (Umtanum buckwheat and White Bluffs Bladderpod) on the Hanford Site. Since finalization of the BRMP, these two species have been listed as threatened by U.S. Fish and Wildlife Services.

Wildfires are an important influence on biological resources at Hanford. During the period from 1990 through 2010, a total of 302 wildfires burned an estimated 340,983 acres of Hanford land (DOE/EA-1728). The majority of the lands that burned are designated in the CLUP for Conservation (Mining) or Preservation due to the high quality shrub-steppe habitat that existed prior to the wildfire. Roughly 70 percent of Hanford shrub-steppe vegetation communities have been burned in the past 14 years. Figure 4 depicts the extent of Hanford lands burned by wildfires over the past three decades.

The BRMP is one of the resource management plans for implementing the CLUP as discussed in Chapter 6 of the HCP-EIS. Recent revisions combine the *Ecological Compliance Assessment Management Plan* (DOE/RL-95-11) and *Biological Resources Mitigation Strategy* (DOE/RL-96-88) into the BRMP. Also, the initial four levels of management concern developed to associate management actions (i.e., monitoring, impact assessment, mitigation, and restoration) with particular biological resources (e.g., threatened and endangered, state-listed, or otherwise protected plant and animal species) and "value" (i.e., some resources require greater management attention than others) were expanded from four to six levels. This expansion in levels provides greater details with respect to species, habitat, and administrative boundaries.

The revision to the BRMP, listing of two threatened plant species, and Hanford wildfires do not represent new information and changed circumstances that would affect land use designations, map, policies, or procedures established by the CLUP. Land uses at Hanford are managed in accordance with the BRMP to protect and preserve biological resources. This includes vegetation management actions involving the integrated use of physical, chemical, and biological methods; prescribed burning; and revegetation (DOE/EA-1728).

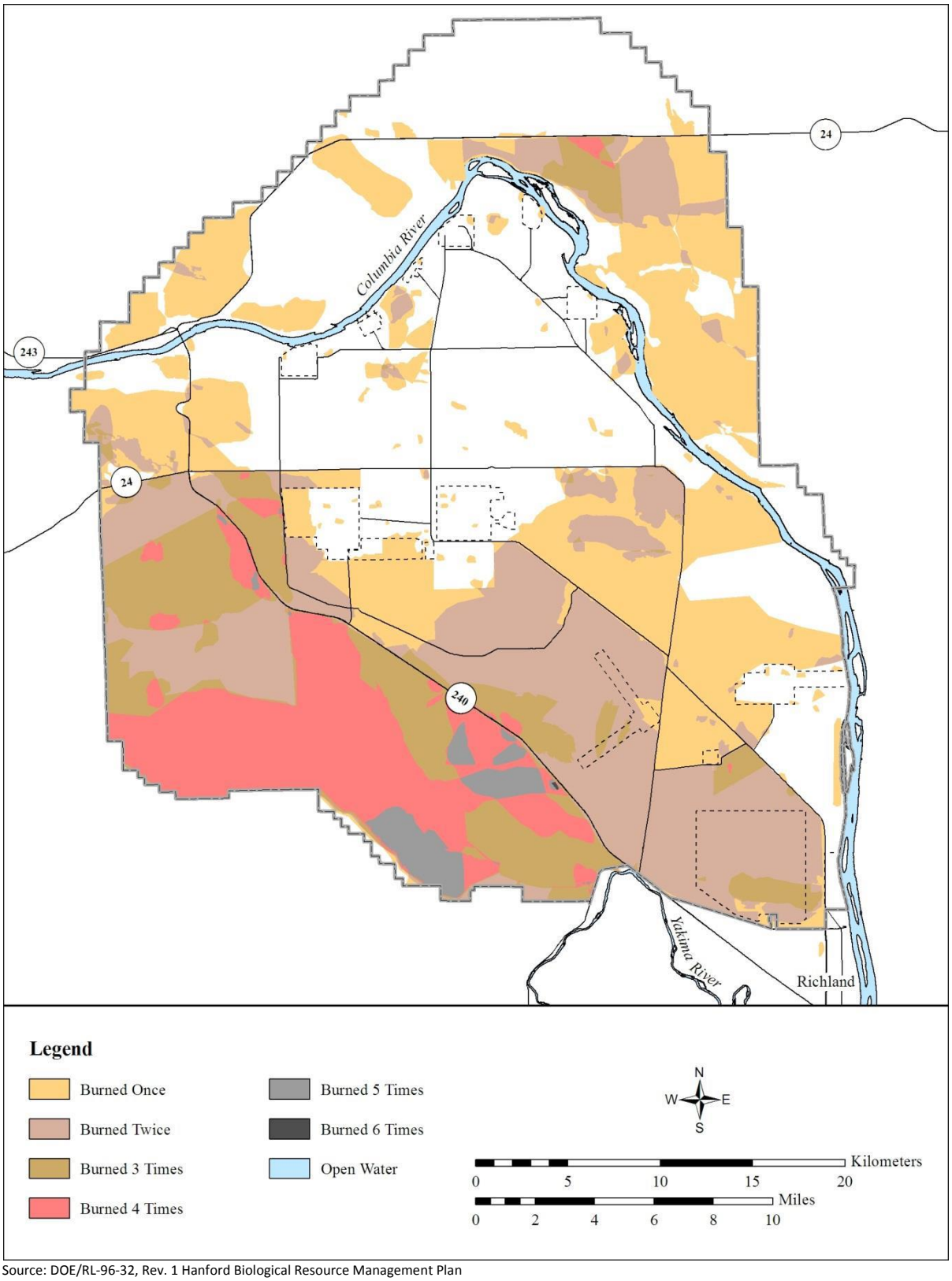
Figure 3. Integration of Biological Resource Levels Across Hanford.



[1]Level 5 – Rarest and most sensitive; Level 4 – Essential to biological diversity; Level 3 – Conservation concerns; Level 2 – Potential conservation concern; Level 1 – Common native species and no conservation value; Level 0 – non-native species and habitats

Source: DOE/RL-96-32, Rev. 1 Hanford Biological Resource Management Plan

Figure 4. Hanford Fire Frequencies from 1978 to 2011.



Source: DOE/RL-96-32, Rev. 1 Hanford Biological Resource Management Plan

2.1.4 Cultural Resources

Hanford's cultural resources are diverse, ranging from early prehistoric times to the atomic age. The Site contains a fragile and extensive record of human occupation documenting a series of overlapping cultural landscapes stretching thousands of years into the past. Each layer of history tells the story of how people have used the area. Archaeological remains combine with oral histories and traditional cultural places to document through time the changes in people's way of life on the Hanford Site. DOE/RL-98-10, *Hanford Cultural Resources Management Plan*, discusses cultural resource management at Hanford.

Tribal representatives are consulted for recommendations and advice on DOE activities potentially affecting tribal rights and interests. The Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes and Bands of the Yakama Nation, the Nez Perce Tribe, and the Wanapum People are involved with the DOE Cultural Resources Program to assess cultural resources effects and issues at Hanford. Tribal representatives currently access portions of Hanford to assist DOE and its contractors in providing historical information, conducting cultural resource reviews and monitoring cleanup activities.

Since the 2008 SA, additional consultations conducted by DOE have taken place, cleanup activities have been completed, Traditional Cultural Property (TCP) boundaries have been expanded and lands have been surveyed. Appendix 2 provides additional information on the cultural resource reviews performed since the 2008 SA. The expansion of TCP boundaries and additional land surveys for cultural resources have been in areas designated for conservation and preservation by the CLUP. These areas are managed for the conservation and preservation of archaeological, cultural, ecological, and natural resources consistent with the CLUP.

2.1.5 Unaffected Resource Areas

DOE's *Recommendations for the Supplement Analysis Process* state that an SA need not consider resource areas that would be unaffected by new information and changed circumstances, and instead briefly explain why any resource area analyzed in the existing EIS does not warrant further analysis in the SA. (See Section 1.1.2 for a discussion of resource areas analyzed in the HCP-EIS and 2008 SA).

Resource and other areas determined to be unaffected by new information and changed circumstances presented in NEPA documents, resource management plans, and Hanford strategic and long-range planning documents include water, air, socioeconomics, aesthetic/visual, noise/vibration, environmental monitoring, and contamination. The following is a brief explanation of the reasons the aforementioned resources and subjects analyzed in the HCP-EIS do not warrant further analysis.

Curtailment of wastewater discharges to the soil, restrictions on groundwater use, and cleanup/closure actions have removed, immobilized, or otherwise restricted exposure to contaminants in the Hanford vadose zone, groundwater, and other water resources. Air quality and viewsheds on the Hanford Site continue to be managed in accordance with the Hanford Site Air Operating Permit (AOP) and the Hanford Site Radioactive Air Emissions License (FF-01) to control toxic, radioactive, diffuse, fugitive, and other air pollutants. Activities affecting air quality have not changed as the type of activities at Hanford do not represent a significant change from the past.

Hanford continues to provide employment and conduct its operations as it has in the past, managing use of the site consistent with the CLUP. There have not been significant changed circumstances that would change the socioeconomics of the region as described in the HCP-EIS.

Completion of site cleanup activities improves aesthetic and visual resources by removing structures and revegetating disturbed lands with native grasses, shrubs, and forbs.

Noise levels have not changed as there have not been significant new sources or changes in the types of activities that produce noise. Noise producing activities are concentrated in the Central Plateau region of Hanford or in other areas that are not in close proximity to noise-sensitive receptors.

Environmental surveillance at Hanford consists of monitoring for potential radiological and nonradiological constituents and includes external radiation, air, surface water, groundwater, soil, vegetation, wildlife, and regional food and farm products. There have been substantial reductions in Hanford soil and groundwater contamination levels as a result of ongoing cleanup activities under the TPA, RCRA, CERCLA, and other regulatory authorities.

In conclusion, DOE has identified no significant new information or changed circumstances with respect to water resources, air resources, socioeconomics, aesthetic/visual resources, noise/vibration, environmental monitoring, or contamination that would affect the CLUP land-use designations, map, policies, or procedures established by the HCP-EIS and reaffirmed by the 2008 SA.

2.2 Other National Environmental Policy Act Considerations

NEPA documents have been or are being prepared for actions at Hanford associated with land conveyance, borrow pits, landfill closure, vegetation management, communication systems consolidation, tank closure and waste management, Hanford Reach National Monument, and naval reactor compartment disposal. These EAs and EISs have been and are being prepared consistent with the provisions of the HCP-EIS and ROD. Also, several of the NEPA documents are in early stages of preparation and no decisions have been made to date (see Section 2.2.3). This section and Appendix A provide a brief summary of these EAs and EISs.

The Hanford Reach National Monument Comprehensive Conservation Plan and EIS addresses several of the AMPs identified in the HCP-EIS (i.e., ALE Reserve Comprehensive Conservation Plan, Wahluke Slope Comprehensive Conservation Plan, and Columbia River Corridor Area Management Plan). Section 2.2.2.2 discusses the Hanford Reach National Monument Comprehensive Conservation Plan and EIS.

2.2.1 Environmental Assessments

This section discusses ongoing, planned, or completed EAs since the 2008 SA. Each EA is evaluated from the standpoint of whether it represents new information and changed circumstances that would affect the CLUP land use designations, map, policies, or procedures.

2.2.1.1 Vegetation Management

DOE issued the Vegetation Management EA and FONSI in March 2012 (DOE/EA-1728-F) that analyzed the integrated use of physical, chemical, and biological methods; prescribed burning; and revegetation. DOE manages vegetation at Hanford according to the “Biological Resources Management Plan”

(BRMP)(DOE/RL-96-32) and the "Hanford Site Revegetation Manual" (DOE/RL-2011-116) to: (1) reduce or eradicate invasive plants and noxious weeds; (2) minimize biological uptake and transport of contaminants; (3) reduce or eliminate wildfire fuels and hazards; (4) restore and preserve desirable plant communities, wildlife habitats, and ecosystems; and (5) protect natural, cultural, and ecological resources.

DOE has identified no new information or changed circumstances with respect to the Vegetation Management EA and FONSI that would affect the CLUP land use designations, map, policies, or procedures.

2.2.1.2 Borrow Pit Expansion

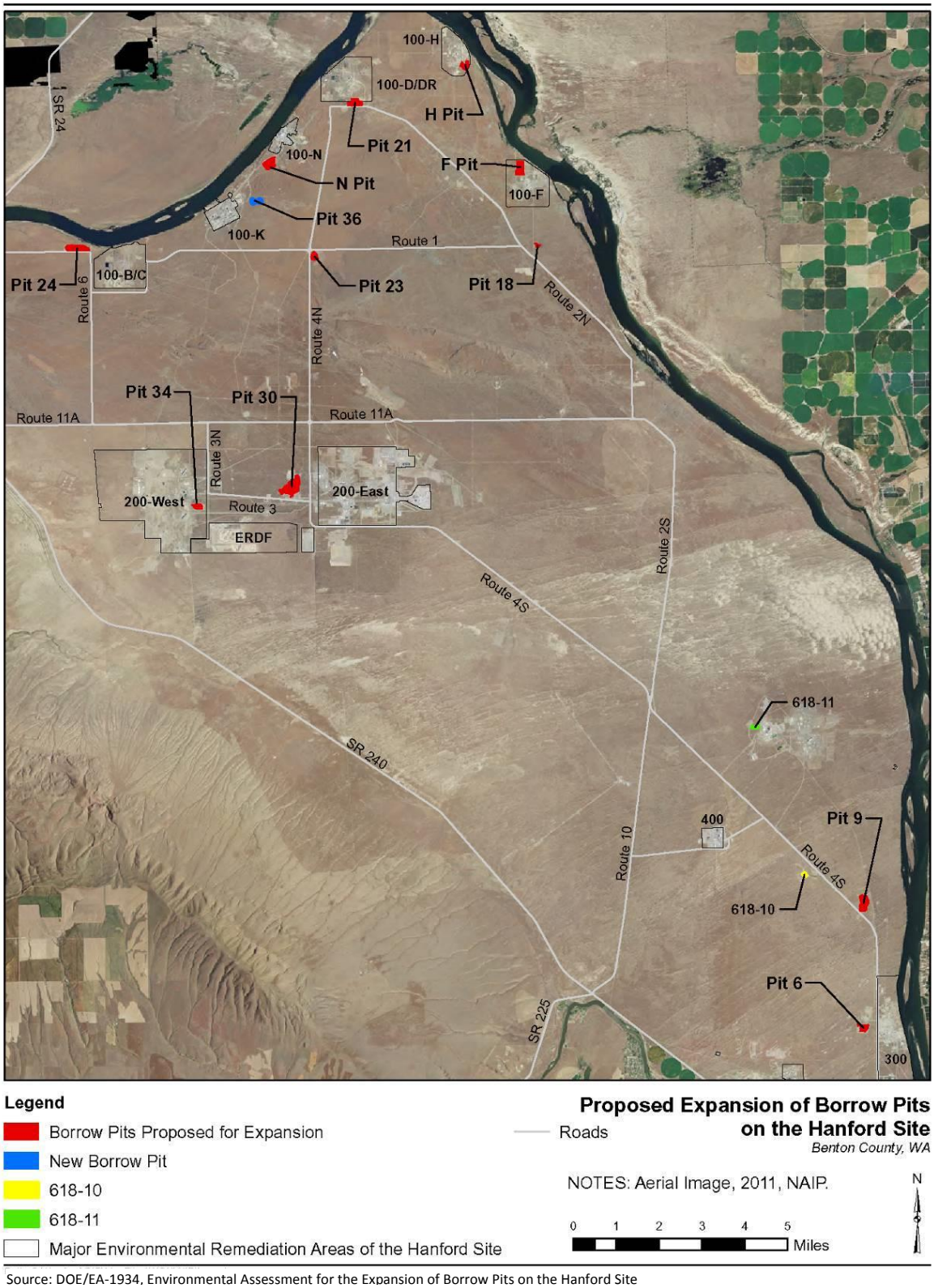
The Borrow Pit Expansion EA and FONSI were issued on August 15, 2013 (DOE/EA-1934) and analyze potential environmental consequences associated with the proposed expansion of active pit-run sand and gravel borrow areas at Hanford to support DOE's environmental cleanup and site restoration projects (e.g., backfill of remediated waste sites) as well as construction and maintenance activities. The EA included 11 existing borrow pits and the potential development of one new borrow pit (DOE does not anticipate developing the pit at this time). The EA also addressed closure of the borrow pits. These borrow sites were identified with the goals of minimizing haul distances from borrow sources to remediation sites; minimizing greenhouse gas and other emissions; minimizing impacts to natural, biological, and cultural resources; and minimizing costs associated with excavating and transporting materials. Figure 5 depicts the locations of the borrow sites addressed by the EA.

The EA does not include borrow sources of silt loam soil for evapotranspiration (ET) surface barriers. DOE may conduct a separate review to identify volumetric needs and borrow sources of silt loam soil as discussed in Section 2.2.3.3. A Mitigation Action Plan (WCH-561) was issued in July 2013 to identify integral elements and commitments made in the EA to address potential adverse environmental impacts resulting from implementation of the proposed action.

Hanford borrow sites are located in areas designated in the CLUP as Conservation (Mining). Expansion of existing borrow pits and the possible excavation of a new borrow pit will require excavation permits. Such borrow pit expansions are consistent with the CLUP and would undergo cultural and ecological resource reviews prior to any excavation activities to be consistent with the protection of archaeological, cultural, ecological, and natural resources.

DOE has identified no new information or changed circumstances with respect to the Borrow Pit Expansion EA that would affect the CLUP land use designations, map, policies, or procedures.

Figure 5. Locations of Borrow Site Proposed for Expansion at Hanford.



Source: DOE/EA-1934, Environmental Assessment for the Expansion of Borrow Pits on the Hanford Site

2.2.1.3 Combined Community Communications Facility and Infrastructure Cleanup on the Arid Lands Ecology Reserve

DOE issued an EA and FONSI on July 20, 2009, (DOE/EA-1660F, *Combined Community Communications Facility and Infrastructure Cleanup on the Fitzner/Eberhardt Arid Lands Ecology Reserve, Hanford Site, Richland, Washington*) that analyzed the environmental impacts associated with constructing a new communications facility, consolidating existing communications operations and removing excess facilities and infrastructure within the ALE Reserve, located on the Rattlesnake Mountain portion of Hanford. DOE removed most facilities on the ALE Reserve, except those needed for ongoing operations by DOE and the USFWS, as well as communications equipment currently used by local governments and other organizations. Figure 6 depicts principal areas of facility consolidation and cleanup.

To meet long-term federal agency missions, DOE implemented the proposed actions to reduce indirect costs and potential safety impacts, as well as protect sensitive cultural and ecological resources, by reducing the impact of people and infrastructure within the ALE Reserve. DOE managed the wastes resulting from activities that consolidated existing facilities and infrastructure, reducing the overall footprint of the facilities on the ALE Reserve. Activities associated with the EA are consistent with the CLUP.

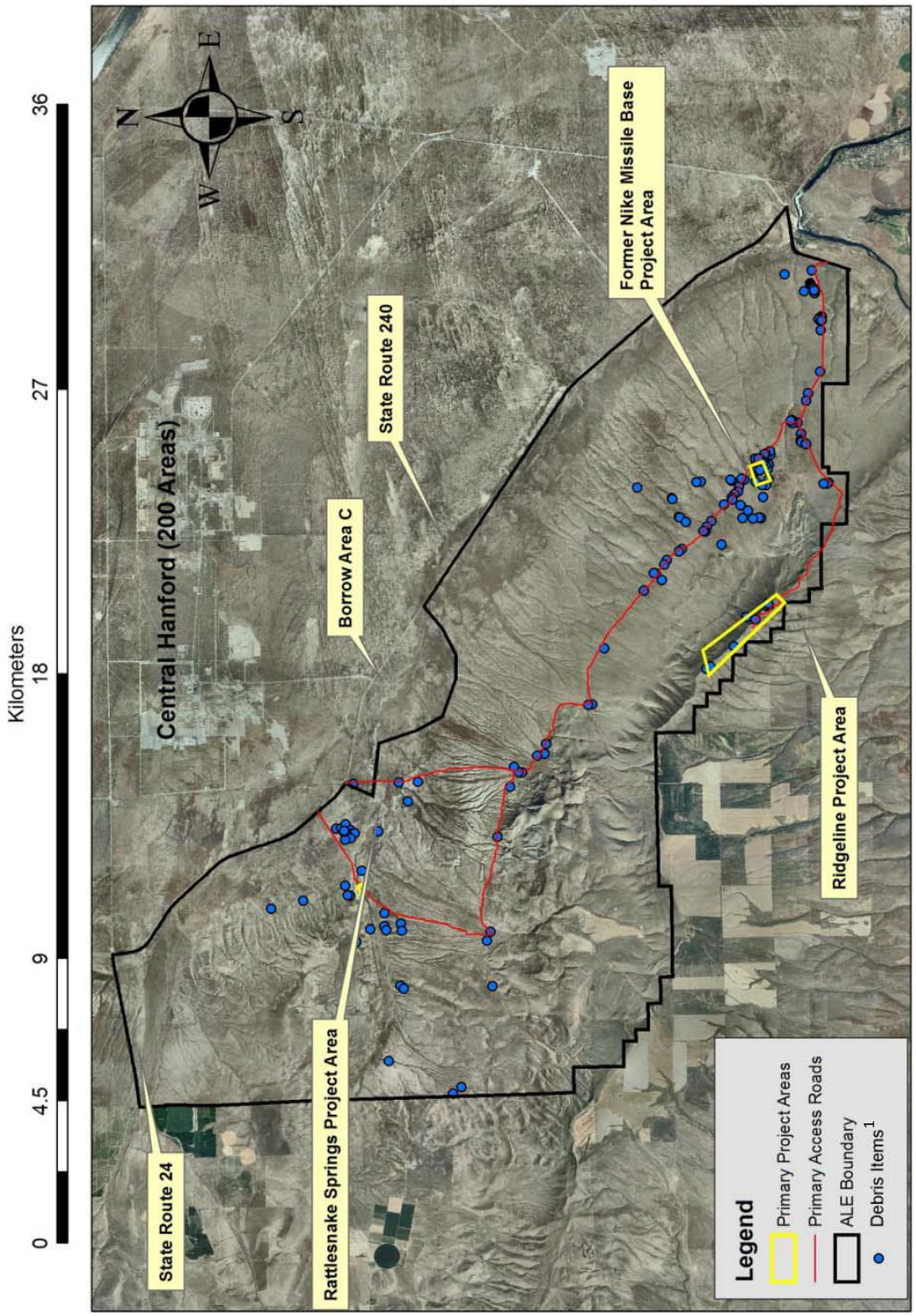
DOE has identified no new information or changed circumstances with respect to the Combined Community Communications Facility and Infrastructure Cleanup on the ALE Reserve EA that would affect the CLUP land-use designations, map, policies, or procedures.

2.2.1.4 Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise

The U. S. Navy addressed the disposal of naval reactor compartments in the 218-E-12B Low-Level Burial Ground (LLBG), Trench 94, in the *Final Environmental Assessment on the Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise (CVN65)* and FONSI issued in August 2012. DOE participated in this EA as a cooperating agency. Disposal of the naval reactor plants in the 218-E-12B LLBG is consistent with the CLUP Industrial-Exclusive land use designation for Trench 94.

DOE has identified no new information or changed circumstances with respect to the Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise EA that would affect the CLUP land-use designations, map, policies, or procedures.

Figure 6. Areas for Facility Consolidation and Cleanup - Combined Communications Facility Project.



Source: DOE/EA-1660F, 2009, Environmental Assessment for Combined Community Communications Facility and Infrastructure Cleanup on the Fitzner/Eberhardt Arid Lands Ecology Reserve

[1] Debris items consisted of cement debris, fencing, utility poles, electrical equipment, wire, cable, piping and other miscellaneous objects.

2.2.2 Environmental Impact Statements

This section and Appendix A discuss ongoing, planned, or completed EISs since the 2008 SA. Each EIS is evaluated from the standpoint of whether they represent new information and changed circumstances that would affect the CLUP land-use designations, map, policies, or procedures.

2.2.2.1 Tank Closure and Waste Management

DOE issued the Tank Closure and Waste Management Final EIS in December 2012 (DOE/EIS-0391, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington*). DOE considered alternatives for proposed actions in three major areas: (1) storing, retrieving, and treating radioactive waste from 177 underground storage tanks (149 Single-Shell Tanks [SSTs] and 28 Double Shell Tanks) at Hanford, and closure of the 149 SSTs; (2) decommissioning of the Fast Flux Test Facility and its auxiliary facilities; and (3) continued and expanded waste management operations onsite, including the disposal of Hanford's low-level waste (LLW) and mixed low-level waste (MLLW), and limited volumes of LLW and MLLW from other DOE sites.

DOE published a ROD for the Tank Closure and Waste Management EIS in the Federal Register on December 13, 2013 (78 FR 75913).

The Tank Closure and Waste Management EIS did not identify any mitigation measures for the resource areas in addition to those already identified in the HCP-EIS, SA, and RODs. Activities addressed by the Tank Closure and Waste Management EIS remain consistent with the provisions of the CLUP. Radioactive and hazardous waste treatment, storage, and disposal activities are consistent with the Industrial-Exclusive and Industrial land use designations selected for the 200 and 400 Areas, respectively, in the CLUP. DOE has identified no new information or changed circumstances with respect to the Tank Closure and Waste Management EIS ROD that would affect the CLUP land use designations, map, policies, or procedures.

2.2.2.2 Hanford Reach National Monument Comprehensive Conservation Plan

The Hanford Reach National Monument Comprehensive Conservation Plan and Environmental Impact Statement (CCP-EIS) was issued by the USFWS in August 2008 (and DOE was a cooperating agency). The Hanford Reach National Monument covers an area of 196,000 acres at Hanford. Of this, the USFWS manages approximately 165,000 acres through a DOE permit and other agreements with DOE. DOE directly manages approximately 29,000 acres, and the Washington State Department of Fish and Wildlife (WDFW) manages the remainder under a DOE permit. The management units comprising the Hanford Reach National Monument include the Columbia River Corridor, Rattlesnake Mountain, Ringold, Saddle Mountain, and Wahluke Slope. Figure 7 depicts land management units comprising the Hanford Reach National Monument.

The Presidential Proclamation establishing the Hanford Reach National Monument directs that it be jointly managed by DOE and USFWS. However, the development of the Hanford Reach National Monument Comprehensive Conservation Plan and EIS was a requirement for the USFWS under the National Wildlife Refuge System Improvement Act. As such, the Hanford Reach National Monument

Comprehensive Conservation Plan and EIS was written to guide the USFWS in its management of the Hanford Reach National Monument.

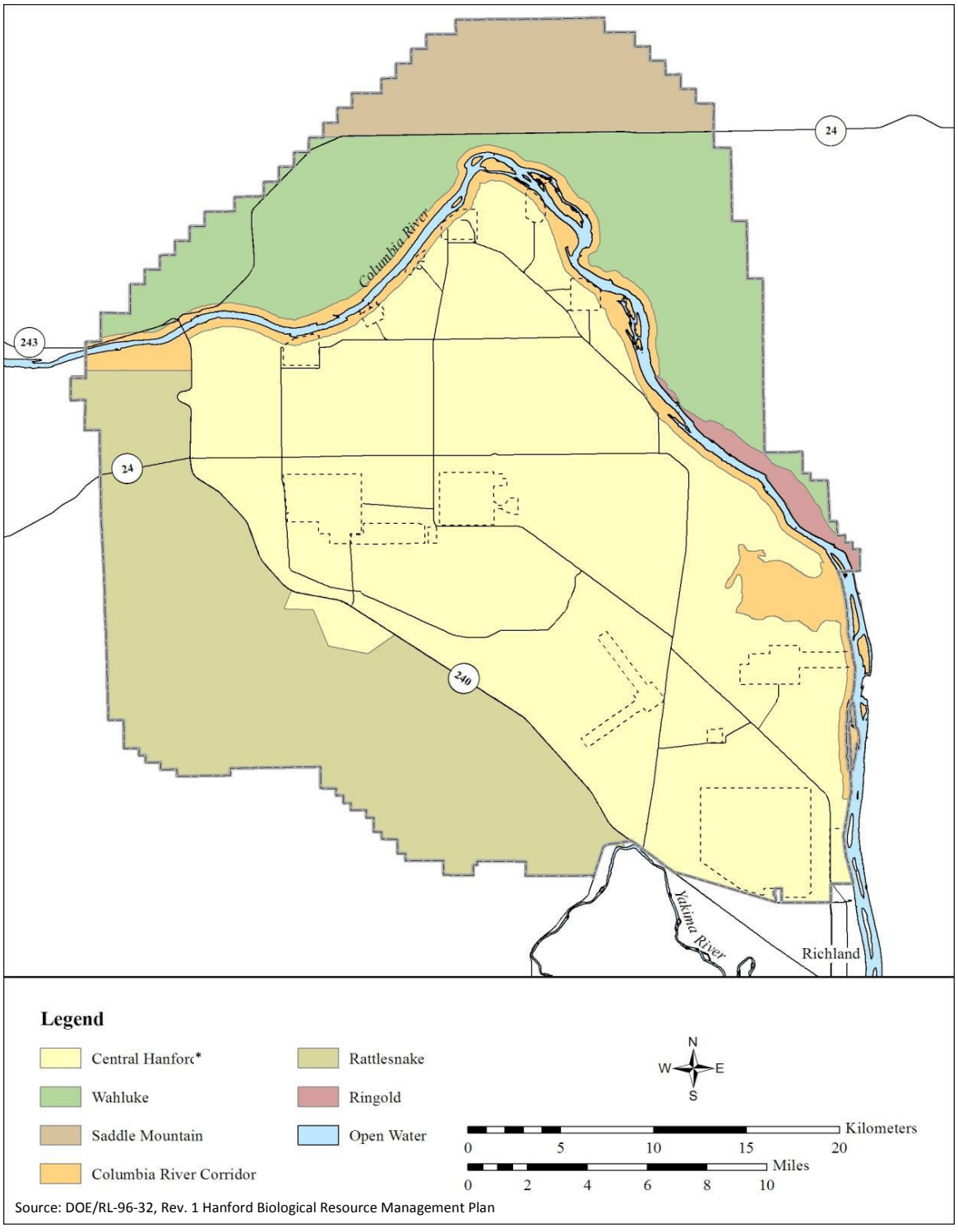
The Presidential Proclamation establishing the Hanford Reach National Monument, in certain cases, mandates more restrictive uses within the Hanford Reach National Monument than DOE adopted in the HCP-EIS ROD in order to protect the resources for which the Hanford Reach National Monument was established. For example, the CLUP land use designation for Preservation that addresses lands currently comprising the Hanford Reach National Monument permits limited public access. Under the Presidential Proclamation, all Federal lands and interests in lands within the boundaries of the Monument are appropriated and withdrawn from all forms of entry, location, selection, sale, or leasing or other disposition under the public land laws. "The Secretary of the Interior and the Secretary of Energy shall prohibit all motorized and mechanized vehicle use off road, except for emergency or other federally authorized purposes, including remediation purposes."

"The monument shall be managed by the U.S. Fish and Wildlife Service under existing agreements with the Department of Energy, except that the Department of Energy shall manage the lands within the monument that are not subject to management agreements with the Service, and in developing any management plans and rules and regulations governing the portions of the monument for which the Department of Energy has management responsibility, the Secretary of Energy shall consult with the Secretary of the Interior."

A subsequent Presidential Memorandum (June 9,2000) makes provisions for future expansion of the Hanford Reach National Monument lands to incorporate similar lands designated for preservation. The permits and agreements between the USFWS and DOE could be extended in the future to include, in the Hanford Reach National Monument, lands that have been cleaned up or other lands warranting conservation or preservation. The USFWS may have different access controls and management philosophy under the Hanford Reach National Monument CCP-EIS, but the land-use designations are consistent with the HCP-EIS.

DOE has identified no new information or changed circumstances with respect to the Hanford Reach National Monument CCP-EIS that would affect the CLUP land-use designations, map, policies, or procedures.

Figure 7. Land Management Units of the Hanford Reach National Monument.



Source: DOE/RL-96-32, Rev. 1 Hanford Biological Resource Management Plan

*Central Hanford area is not part of the Hanford Reach National Monument

2.2.3 NEPA Documents in Preparation

As addressed in the Introduction of this SA, proposals in ongoing NEPA processes are not being analyzed as new information or changed circumstances because they are not "ripe" for consideration. While these documents are being prepared consistent with the CLUP, it would be premature to make a determination as to whether they represent significant new information or changed circumstances that would affect the CLUP since no decisions have been made. Any future SA prepared should consider the decisions made in these ongoing NEPA documents for potential impacts on the CLUP map, designations, policies, and procedures.

2.2.3.1 Hanford Natural Gas Pipeline

DOE issued a *Notice of Intent to Prepare and Environmental Impact Statement for the Acquisition of a Natural Gas Pipeline and Natural Gas Utility Service at the Hanford Site, Richland, WA and Notice of Floodplains and Wetlands Involvement* (FR 3255, Vol. 77, No. 14, January 23, 2012). . The *Hanford Natural Gas Pipeline Environmental Impact Statement* (NGP EIS, DOE/EIS-0467) would evaluate the potential environmental impacts of the proposed construction, operation, and maintenance of a NGP by a licensed natural gas utility supplier to deliver natural gas utility service to DOE facilities in the 200 East Area of Hanford to produce steam [i.e., Hanford Tank Waste Treatment and Immobilization Plant (WTP) and 242-A Evaporator steam boiler annexes].

DOE has suspended work on the NGP EIS. DOE is continuing to evaluate the timing and need of the Natural Gas Pipeline Project, including ways to effectively reduce fuel costs, greenhouse gases and dependence on foreign fuel sources at the Hanford Site.

2.2.3.2 Land Conveyance

As announced in *Notice of Intent to Prepare an Environmental Assessment for the Proposed Conveyance of Land at the Hanford Site, Richland, WA and Notice of Potential Floodplain and Wetland Involvement* (FR 58112, Vol. 77, No. 182, September 19, 2012), DOE is preparing an EA to evaluate the potential environmental impacts associated with the proposed conveyance of industrial-designated lands located in the southeast corner of Hanford (DOE/EA-1915).

The land considered in the EA is part of a portion of the Hanford Site designated by DOE for industrial uses under the CLUP. Conveyance of the land could include a broader range of real estate transactions including title transfer, easement, lease, license agreements, or a combination of these actions.

2.2.3.3 Nonradioactive Dangerous Waste Landfill and Solid Waste Landfill Closure

DOE needs to close the non-operating Nonradioactive Dangerous Waste Landfill (NRDWL) and Solid Waste Landfill (SWL). The NRDWL has not received waste since 1988 (i.e., a non-operating facility) and would be closed according to RCRA requirements as implemented through the Hazardous Waste Management Act (HWMA) and WAC 173-303, "Dangerous Waste Regulations." To achieve maximum efficiency, the adjacent SWL would also be closed. The SWL has been inoperative since 1996 (DOE/EA-1707D, 2011). The proposed closure activities would focus on final evapotranspiration (ET) surface barrier installation including oversight of the unit during barrier installation and appropriate certifications.

The HCP-EIS and ROD identified a portion of the Fitzner-Eberhardt Arid Lands Ecology Reserve (including Borrow Area C) as the source of silt loam soil for engineered surface barriers. Use of a portion of mineral resources from Borrow Area C for construction of ET surface barriers is addressed in a Memorandum of Agreement among DOE, Washington State Department of Archaeology and Historic Preservation, and the Advisory Council on Historic Preservation previously executed for Borrow Area C on April 6, 2009. DOE invited the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes and Bands of the Yakama Nation, the Nez Perce Tribe, and the Wanapum to sign the MOA as concurring parties; however, the Tribes declined to sign the MOA (DOE/EA-1707D). Roughly 11 acres of fine-grained soil in Borrow Area C would be removed and used to construct ET surface barriers in support of closure activities at Hanford (i.e., U-Plant cribs). Specific stipulations are included in the Memorandum of Agreement setting forth DOE's agreement concerning actions that will be taken to minimize or avoid adverse effects associated with the additional development and transportation of borrow materials from Borrow Area C. Figure 8 depicts the 11 acre site at Borrow Area C addressed by the MOA, and Figure 9 depicts soil types and location at Hanford.

DOE has discussed the use of Borrow Area C in several NEPA documents including the Tank Closure and Waste Management EIS (DOE/EIS-0391), HCP-EIS (DOE/EIS-0222), revised draft Non-Radioactive Dangerous Waste Landfill (NRDWL)/Solid Waste Landfill (SWL) EA, (DOE/EA-1707D) and multiple borrow source studies (e.g., SD-WM-ES-063, *Disposal Material Study*) conducted in support of the Hanford cleanup mission.

Figure 8. Aerial View of 11 Acre Site at Borrow Area C Addressed by MOA

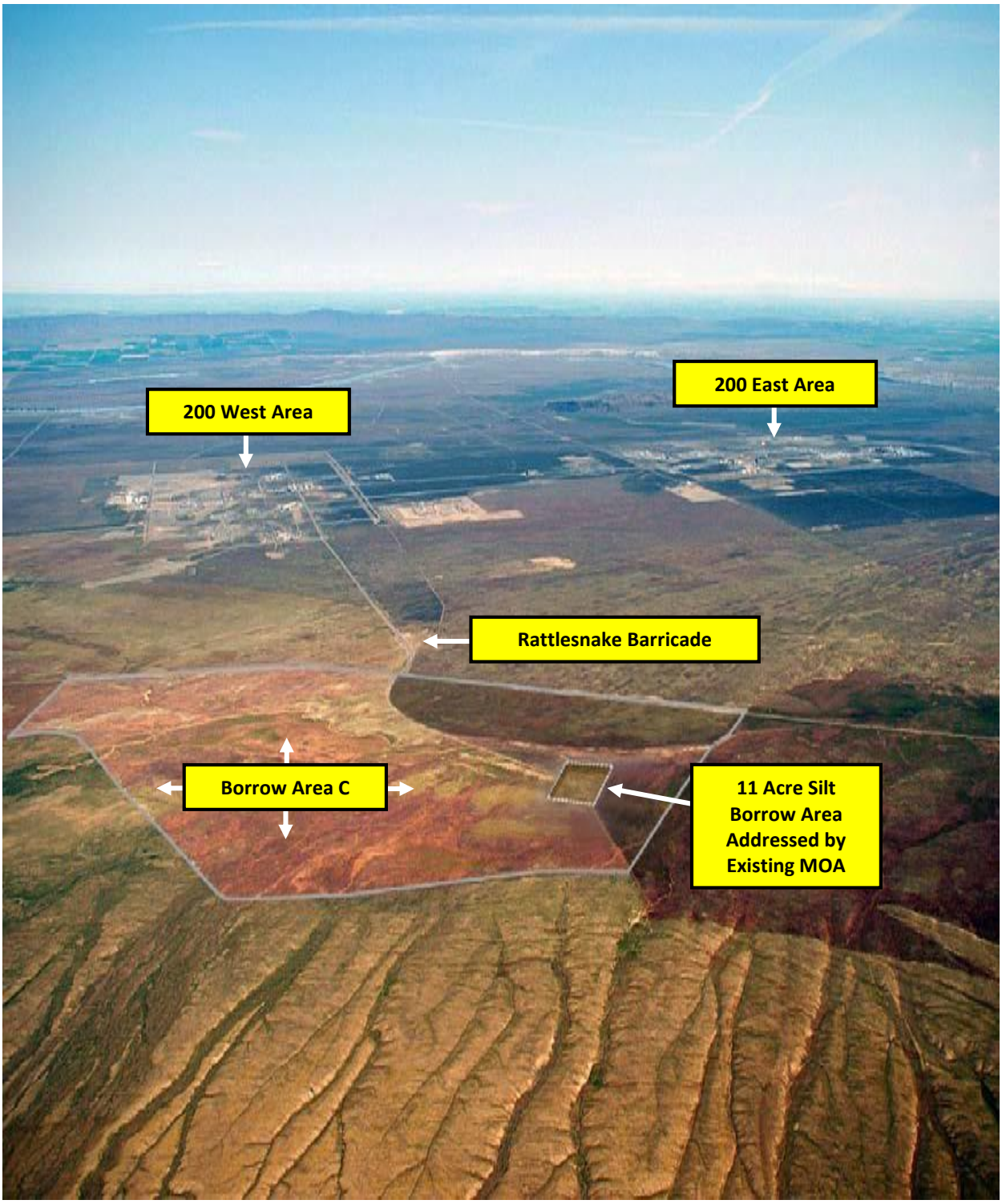
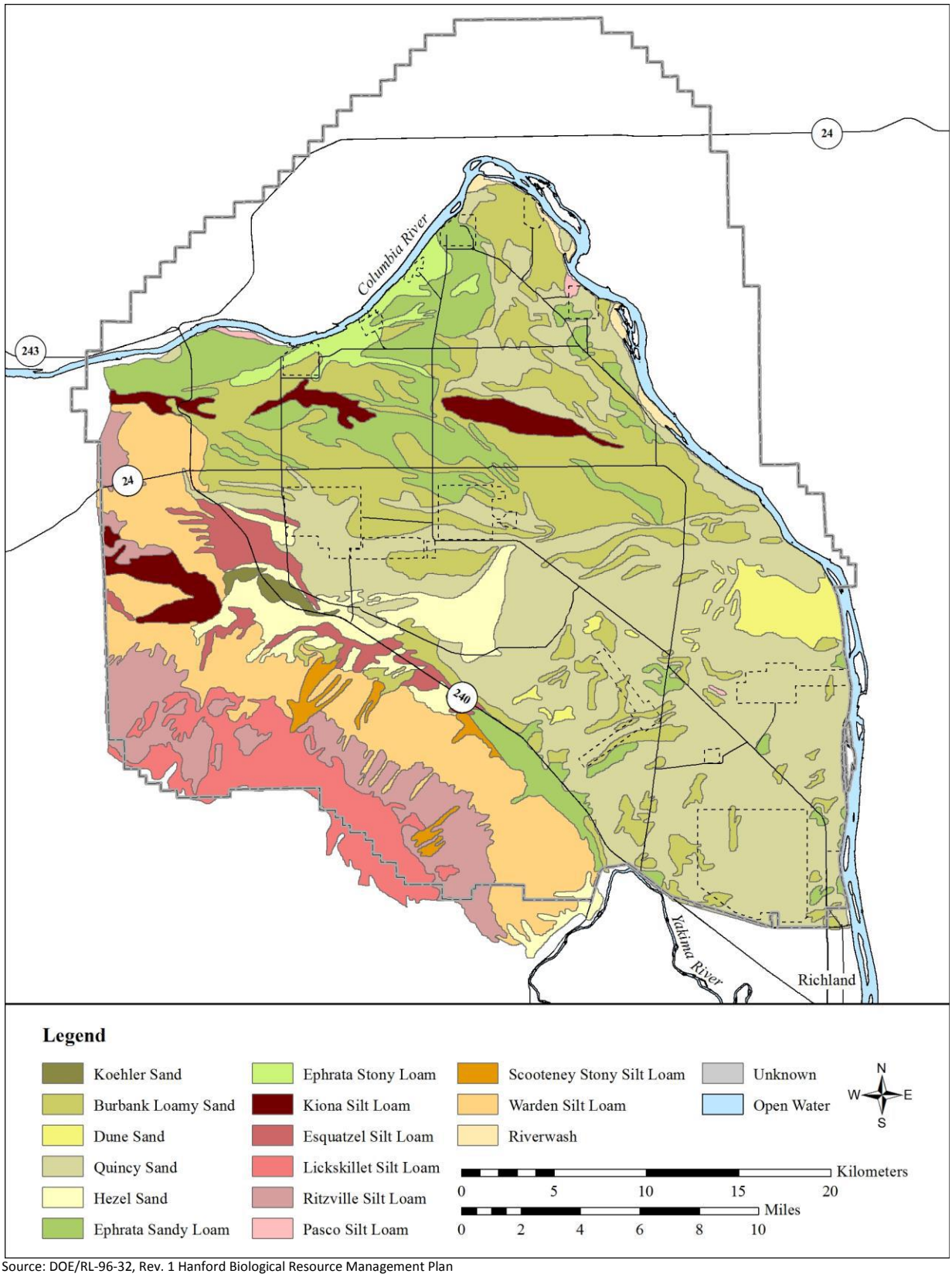


Figure 9. Soil Types at Hanford.



Source: DOE/RL-96-32, Rev. 1 Hanford Biological Resource Management Plan

This page intentionally left blank.

3.0 CUMULATIVE IMPACTS OF NEW INFORMATION AND CHANGED CIRCUMSTANCES

CEQ Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500–1508) define cumulative effects as impacts on the environment that result from a proposed action when added to other past, present, and reasonably foreseeable future actions (40 CFR 1508.7). Thus, the cumulative impacts or effects of an action on a resource (e.g., land, geologic, biological, cultural, etc.), ecosystem, or human community are the total effects of that action and all other activities affecting that resource. In the case of the current SA, the action under consideration is implementation of the CLUP. New information and changed circumstances are being evaluated to determine whether they would result in a need to change any of the four elements of the CLUP and result in the requirement for additional NEPA analysis.

3.1 Past, Present and Reasonably Foreseeable Actions

Past and present actions that may contribute to cumulative effects include those within a "Region of Influence" (ROI). The ROI considered in this SA is the current Hanford boundary. Current Hanford activities include site cleanup, waste disposal, and tank waste retrieval.

Reasonably Foreseeable Action

A future action becomes "reasonably foreseeable" once it is proposed and not speculative. The mere contemplation or speculation of an action is not sufficient to constitute a reasonably foreseeable action.

The CLUP lays out the future vision for land use at Hanford. Both DOE and non-DOE actions may occur within the current Hanford boundaries. Major DOE activities include continuation of site cleanup, waste consolidation and disposal, facility closure and decontamination and decommissioning, and the various high-level radioactive waste treatment and tank waste retrieval and closure activities. Present and reasonably foreseeable (see text box) future DOE actions at Hanford include, but may not be limited to, the following:

- Cleanup and restoration activities across all areas of Hanford.
- Decommissioning of surplus production reactors and their support facilities in the 100 Areas along the Columbia River; except B Reactor, a designated National Historic Landmark included in the Manhattan Project National Historical Park legislation.
- Deactivation of the Plutonium Finishing Plant in the 200-West Area.
- Actions to remove the sludge and decommission the K Basins in the 100-K Area.
- U-Plant regional closure.
- Final disposition of the canyon buildings, PUREX tunnel, and other facilities in the 200 Areas, and cleanup of the Central Plateau to Industrial-Exclusive land-use standards.
- Excavation and use of geologic materials.
- Continued disposal of waste in the Environmental Restoration Disposal Facility and the Mixed Waste Trenches on the Central Plateau.

- Retrieval of suspect TRU waste buried after 1970 and packaging/certification for shipment to the Waste Isolation Pilot Plant (WIPP) in Carlsbad, New Mexico.
- Cleanup and protection of groundwater.
- Potential disposal of greater than Class C LLW.
- Conveyance of land.
- Integrated vegetation management.
- Construction of natural gas pipeline.
- Fast-Flux Test Facility Final D&D.
- Continued transportation, treatment and processing of radioactive waste at onsite and offsite facilities.
- Tank waste retrieval, treatment, storage, disposal, and closure activities in accordance with the TC&WM EIS and ROD.

Cumulative impacts also involve consideration of non-DOE activities inside the Hanford boundary. These included Federal, state, or local initiatives; industrial or commercial ventures; utility or infrastructure construction and operation; and waste treatment and disposal. Specific non-DOE activities at Hanford include the following:

- Continued transport of U.S. Navy reactor compartments via the Columbia River and disposal in Trench 94 of Low-Level Burial Ground 218-E-12B in 200 East Area.
- Continued operation of the Columbia Generating Station (previously Washington Public Power Supply System, Nuclear Project No. 2); including cooperation with the Bonneville Power Administration and Public Utility Districts for infrastructure development of the electrical transmission grid.
- Continued operation of the US Ecology, Inc. Commercial Low-Level Radioactive Waste Disposal Site.
- Management of the Hanford Reach of the Columbia River as a national monument and a national wildlife refuge.
- Continued operation of the LIGO research facility

Certain activities occurring at Hanford may have a positive effect on future land use. For example, remediation efforts at Hanford could facilitate potential reuse or restoration of land consistent with the land-use designations described in the CLUP. Reuse of land may avoid the need to develop other, possibly undisturbed, areas. Restoration of remediated sites would return some land to more-natural conditions.

Table 2, *Significance of New Information and Changed Circumstances by Resource Areas* evaluates new proposals known to date and resource areas with regard to context and intensity to determine the significance of impacts from or to the listed topics. Since none of these items result in significant effects

individually, and when viewed cumulatively on this table, none of these effects would change the cumulative effects analysis presented in the HCP-EIS.

This section discusses possible future cumulative effects from currently known initiatives (such as increased public and tribal access) on resources included in this SA: Land Use, Geologic Resources, Biological Resources, and Cultural Resources. The initiatives are not yet defined sufficiently (with project descriptions) to be able to provide detailed analysis of those proposals or their potential cumulative effects. A general discussion of possible future cumulative effects is provided in the following sections.

Land Use

Hanford land contains abundant natural resources, including native plants, wildlife, and geologic resources. Large tracts of land used as protective buffer zones for safety and security purposes also serve to protect natural, biological, and cultural resources. If there is an increase in public access, land use effects could increase. Although limited public access is consistent with CLUP land use designations for conservation and preservation, and areas designated for recreation include visitor-serving activities and facilities, such access may need to be controlled to mitigate cumulative effects to natural, cultural, and ecological resources. Potential effects of increased public access on regulatory permits and licenses would also be considered (e.g., Air Operating Permit, RCRA Permit, Radioactive Air Emissions License, etc.).

Geologic Resources

Current Hanford conditions reflect past actions that have affected geologic resources due to mining and construction activities. Current and future demands for mineral resources to support cleanup and closure actions will contribute to cumulative effects on geologic resources. Added to these demands are those associated with construction, operation, and future deactivation and closure of buildings, structures, and infrastructure. Future actions continue use of existing borrow pits and establish new borrow pits that contribute to cumulative use of geologic resources.

Biological Resources

Shrub-steppe habitat is fragile and many of the animal species that have evolved with it require large contiguous areas to survive. Disturbances to terrestrial habitat are mitigated in accordance with the Biological Resources Management Plan (BRMP). For example, the BRMP concept of “mitigation banking” establishes shrub-steppe habitat in areas other than at the affected site to compensate for unavoidable losses. Wildfires affect native habitats and biological diversity (see Figure 4, which graphically represents the cumulative effects). The Hanford Fire Department conducts firebreak maintenance and fuels reduction to minimize potential cumulative effects of wildfires and burned areas may be revegetated if unable to recover naturally. Biological resource reviews are conducted to identify and mitigate potential adverse impacts of proposed actions. Mitigation action plans limit potential impacts on federal and state-listed threatened, endangered, or otherwise sensitive plant and animal species within a project area and limit cumulative effects on biological resources.

Cultural Resources

Construction of new facilities and disturbance of previously undeveloped land by future new activities have potential cumulative effects on cultural resources and American Indian interests. This is particularly

true on Traditional Cultural Properties or in areas within one-quarter mile of the Columbia River where cultural resources are concentrated. Hanford cultural resources have been protected by site access restrictions, but any future increased public access could contribute to cumulative impacts to cultural resources from unauthorized artifact collection, vandalism, and losses to riverbank and island erosion from boat wakes. Industrial development has the potential to disturb archaeological and historic sites. Cumulative effects on cultural resources are mitigated by cultural resource reviews (NHPA Section 106 and other reviews) prior to implementing proposed actions. The majority of Hanford lands are designated for conservation and preservation by the CLUP, and are managed for the protection of archaeological, cultural, ecological, and natural resources minimizing cumulative effects.

4.0 FINDINGS AND CONCLUSIONS

DOE has proposed, and in some instances implemented, various actions at Hanford since issuance of the HCP-EIS in September 1999, ROD in November 1999 and the first SA in September 2008. Through a series of analyses and decisions, DOE has continued to manage land use at Hanford consistent with the analyses in the CLUP land-use designations, map, policies, and procedures. DOE issued an amended HCP-EIS ROD in 2008 finding that other regulatory processes (described previously in this SA) have been used to effectively determine whether proposed activities at the Hanford Site are consistent with the CLUP and provide equivalent opportunities for agencies, tribes, and the public to participate in decision making.

Current resource management plans (e.g., Hanford Biological Resources Management Plan, Hanford Cultural Resources Management Plan, Gable Mountain and Gable Butte Management Plan, etc.) continue to be used to protect natural, biological, and cultural resources at Hanford consistent with the CLUP. Through periodic reviews and updates to these resource management plans, DOE seeks to improve and enhance its resource management planning at Hanford in response to new information and changed circumstances. Also, existing NEPA documentation for the management of areas on the Hanford Site (i.e., Hanford Reach National Monument CCP-EIS, Tank Closure and Waste Management EIS, etc.) address land use -- including natural, biological, and cultural resource protection consistent with the CLUP land-use designations, map, policies, and procedures.

DOE's review of land-use requests follows applicable regulatory and public involvement processes. Public reviews, consultations and meetings with American Indian tribal representatives, and scheduled briefings with the Hanford Advisory Board are the primary vehicles for review of potential environmental issues, including land use and consistency with the CLUP.

A site evaluation is required for land development, disturbances, or improvements including new facilities, structures, and infrastructure systems both permanent and temporary. Applicable Hanford contractor procedures provide consistent screening of proposed activities at Hanford for environmental considerations that may apply including potential impacts to natural, biological, and cultural resources; and consistency with the CLUP.

The CLUP makes provisions for AMPs that are consistent with the CLUP and address specific land uses at Hanford. The 2008 SA found that AMPs identified in the HCP-EIS for the ALE Reserve, Wahluke Slope, and Columbia River Corridor (within one-quarter mile of the Columbia River shoreline) have been addressed by the Hanford Reach National Monument CCP EIS issued by the USFWS. DOE was a Cooperating Agency on the CCP EIS, but hasn’t adopted the EIS; however, the CCP EIS is consistent with the CLUP.

This page intentionally left blank.

5.0 DETERMINATION

DOE reviewed existing NEPA documents (i.e., notices of intent, draft and final EAs and EISs), resource management plans, and Hanford Site strategic and long-range planning documents prepared or updated since the HCP-EIS, RODs, and 2008 SA to determine if there is significant new information or changed circumstances that would affect the four elements of the CLUP (land use map, designations, policies, and procedures) such that a new or supplemental EIS would be warranted.

This SA provides a comparison between the 1999 HCP-EIS, the 2008 SA, and the 2015 SA to identify potentially significant new information or changed circumstances. Significance was determined based on consideration of the "context" and "intensity" of new information or changed circumstance by resource areas (see Table 2). Resource areas with potentially significant new information or changed circumstances evaluated in the 2015 SA included land use, geologic, biological, and cultural. Other areas analyzed in the HCP-EIS that were determined to be unaffected in the 2015 SA include water, air, socioeconomics, aesthetic/visual, noise/vibration, environmental monitoring, and contamination. Activities considered included proposed increased Hanford Site access and tours, proposed Manhattan Project National Historical Park, proposed land conveyance, proposed landfill closure, ongoing tank closure and waste management operations, ongoing remedial and removal actions, ALE infrastructure removal and consolidation, mineral resource borrow sites, biological mitigation areas, Hanford Reach National Monument, vegetation management, wildfires, naval reactor plant disposal, and traditional cultural properties. DOE has proposed, and in some instances implemented, various actions at Hanford since the HCP-EIS, RODs, and 2008 SA. The 2015 SA concludes that through a series of analyses and decisions, DOE continues to manage land use at Hanford consistent with the CLUP land-use designations, map, policies, and procedures.

DOE uses an SA to determine whether a change in a proposed action (in this case, implementation of the CLUP land use map, designations, policies, and procedures) is substantial and relevant to environmental concerns or whether new circumstances or information relevant to environmental concerns and bearing on the CLUP or its impacts are significant. Based on the analyses in the 2015 SA, DOE concludes that there are no substantial changes in the proposed action that are relevant to environmental concerns and no significant new information or changed circumstances relevant to environmental concerns and bearing on the proposed action or its impacts as addressed by the HCP-EIS and RODs. Therefore, DOE has determined that preparation of a new EIS or supplemental EIS is not warranted at this time.

Approved on this 7 day of May, 2015.

Stacy Charboneau

Stacy Charboneau, Manager
U.S. Department of Energy
Richland Operations Office

This page intentionally left blank.

6.0 REFERENCES

05-AMRC-0175, 2005, "300 Area Reuse Proposal Report," (Letter to J. Darrington, City of Richland), from K. Klein, U.S. Department of Energy, Richland Operations Office, Richland, Washington, April 12.

10 CFR 770, "Transfer of Real Property at Defense Nuclear Facilities for Economic Development," Title 10, *Code of Federal Regulations*, Part 770, as amended.

10 CFR 1021, "National Environmental Policy Act Implementing Procedures," Title 10, *Code of Federal Regulations*, Part 1021, as amended.

29 CFR 1910, "Occupational Safety and Health Standards," Title 29, *Code of Federal Regulations*, Part 1910, as amended.

36 CFR 800, "Protection of Historic Properties," Title 36, *Code of Federal Regulations*, Part 800, as amended.

40 CFR 61, "National Emission Standards for Hazardous Air Pollutants," Title 40, *Code of Federal Regulations*, Part 61, as amended.

40 CFR 141, "National Primary Drinking Water Regulations," Title 40, *Code of Federal Regulations*, Part 141, as amended.

40 CFR 1502, "Environmental Impact Statement," Title 40, *Code of Federal Regulations*, Part 1502, as amended.

40 CFR 1508, "Terminology and Index," Title 40, *Code of Federal Regulations*, Part 1508, as amended.

64 FR 61615, 1999, "Record of Decision: Hanford Comprehensive Land-Use Plan Environmental Impact Statement (HCP-EIS)," Vol. 64, pp. 61615-61625 (November 12).

73 FR 55824, 2008, "Amended Record of Decision for the Hanford Comprehensive Land-Use Plan Environmental Impact Statement," Vol. 73, pp. 55824 -55826 (September 26).

78 FR 75913, 2013, "Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington," Vol. 240, pp 75913-75919 (December 13)

Archaeological Resources Protection Act of 1979, 16 USC 470aa, et seq.

Comprehensive Environmental Response, Compensation, and Liability Act of 1980, 42 USC 9601, et seq.

DOE, July 2005, "Recommendations for the Supplement Analysis Process," U.S. Department of Energy, Washington, D.C.

DOE, August 2011, "The Asset Revitalization Initiative Report to Congress – August 2011," U.S. Department of Energy, Washington, D.C.

DOE Order 151.1C, *Comprehensive Emergency Management System*, U.S. Department of Energy, Washington, D.C.

DOE Order 414.1D, "Quality Assurance," U.S. Department of Energy, Washington, D.C.

DOE Order 420.1, *Facility Safety,* U.S. Department of Energy, Washington, D.C.

DOE Order 458.1, *Radiation Protection of the Public and the Environment*, U.S. Department of Energy, Washington, D.C.

DOE-STD-3009-94, Change 3, *DOE Standard Preparation Guide for U.S. Department of Energy Nonreactor Nuclear Facility Documented Safety Analyses*, March 2006, U.S. Department of Energy, Washington, DC.

DOE/EA-1403, 2001, *Use of Existing Borrow Areas, Hanford Site, Richland, Washington*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EA-1454, 2003, *Reactivation and Use of Three Former Borrow Sites in the 100-F, 100-H, and 100-N Areas*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EA-1660F, 2009, *Combined Community Communications Facility and Infrastructure Cleanup on the Fitzner/Eberhardt Arid Lands Ecology Reserve, Hanford Site, Richland, Washington*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EA-1707D, 2011, *Closure of Nonradioactive Dangerous Waste Landfill (NRDWL) and Solid Waste Landfill (SWL) – Revised Draft*, Hanford Site, Richland, Washington, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EA-1728-F, 2012, *Integrated Vegetation Management on the Hanford Site, Richland, Washington*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EA-1915, 2012, *Notice of Intent to Prepare an Environmental Assessment for the Proposed Conveyance of Land at the Hanford Site and Notice of Potential Floodplain and Wetland Involvement*, September 2012, Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EA-1934, 2013, *Expansion of Borrow Areas on the Hanford Site*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EIS-0200-F, 1997, *Final Waste Management Programmatic Environmental Impact Statement for Managing Treatment, Storage, and Disposal of Radioactive and Hazardous Waste*, U.S. Department of Energy, Office of Environmental Management, Washington, D.C.

DOE/EIS-0222-F, 1999, *Hanford Comprehensive Land-use Plan Environmental Impact Statement*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EIS-0222-SA-01, 2008, *Hanford Comprehensive Land Use Plan Environmental Impact Statement Supplement Analysis*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EIS-0246, 1997, *Wildlife Mitigation Program Environmental Impact Statement*, Bonneville Power Administration, Portland, Oregon.

DOE/EIS-0259, 1996, *Final Environmental Impact Statement on the Disposal of Decommissioned, Defueled Cruiser, Ohio Class, and Los Angeles Class Naval Reactor Plants*, U.S. Department of the Navy, Washington, D.C.

DOE/EIS-0391, 2012, *Final Tank Closure and Waste Management Environmental Impact Statement for the Hanford Site, Richland, Washington,* U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/EIS-0467, 2012, *Notice of Intent to Prepare an Environmental Impact Statement for the Acquisition of a Natural Gas Pipeline and Natural Gas Utility Service at the Hanford Site and Notice of Floodplains and Wetlands Involvement*, January 2012, Department of Energy, Washington, DC. .

DOE/RL-91-50, *Hanford Site Environmental Monitoring Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-96-32, Revision 1, 2013, *Hanford Site Biological Resources Management Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-98-10, *Hanford Cultural Resources Management Plan*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2000-61, *Hanford Industrial Mineral Resource Management Plan*, 2001, Draft, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2001-41, *Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions*, Rev. 7, 2014, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2009-10, *Hanford Site Cleanup Completion Framework*, Rev. 1, 2013, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

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

DOE/RL-2010-35, *Hanford Long-Term Stewardship Program Plan,* Rev. 1, 2012, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2011-56, *Hanford Site Third CERCLA Five-Year Review Report*, Rev. 1, 2012, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2011-116, *Hanford Site Revegetation Manual*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2012-29, *Hanford Ten-Year Site Plan for Fiscal Period 2013 – 2022*, 2012, U.S. Department of Energy, Richland Operations Office and Office of River Protection, Richland, Washington.

DOE/RL-2013-02, *2014 Hanford Lifecycle Scope, Schedule and Cost Report*, Rev. 0, 2014, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

DOE/RL-2013-18, *Hanford Site Environmental Report for Calendar Year 2012*, U.S. Department of Energy, Richland Operations Office, Richland, Washington.

Final Environmental Assessment on the Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise (CVN 65), 2012, U.S. Department of the Navy, Washington, D.C.

Final Hanford Reach National Monument Comprehensive Conservation Plan and Environmental Impact Statement, 2008, U.S. Department of the Interior, Washington, D.C.

HNF-44238, *Infrastructure and Services Alignment Plan*, Rev. 5, 2014, Mission Support Alliance, LLC, Richland, Washington.

Manhattan Project Sites Special Resource Study / Environmental Assessment, September 2010

Manhattan Project National Historical Park Study Act, 2004, Public Law 108-340

MSC-PRO-46449, *Site Evaluation*, Rev. 3, Mission Support Alliance, LLC, Richland, Washington.

National Defense Authorization Act or 2015, Public Law 113-291.

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

National Historic Preservation Act of 1966, 16 USC 470, et seq.

Resource Conservation and Recovery Act of 1976, et seq.

SD-WM-ES-063, D. R. Myers, *Disposal Material Study*, May 1985, Rockwell Hanford Operations, Richland, Washington.

WAC 173-303, "Dangerous Waste Regulations," *Washington Administrative Code*, Olympia, Washington.

WAC 246-247, *Radiation Protection – Air Emissions,* Washington Administrative Code, Olympia, Washington.

WCH-561, *Mitigation Action Plan for DOE/EA-1934*, July 2013, Washington Closure Hanford, Richland, Washington.

Appendix A. NEPA, Resource Management, and Long-Range Planning Reviews Affecting Hanford Land Uses Since 2008 SA

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
NEPA REVIEWS				
Final Vegetation Management EA (DOE/EA-1728)	Manage vegetation at Hanford to reduce or eradicate invasive plants and noxious weeds; minimize biological uptake and transport of contaminants; reduce or eliminate wildfire hazards; restore and preserve native and other desirable plant communities and wildlife habitat; protect natural, cultural, and ecological resources using physical, chemical, and biological vegetation control methods, prescribed burning, and revegetation.	Final EA and FONSI signed on March 13, 2012.	Vegetation management on the Hanford Site occurs at various locations each requiring different management strategies. These locations include radioactive and chemical waste management areas, infrastructure areas, rangelands, and landscaped areas around buildings.	Includes waste management in 200 Areas (industrial-exclusive use); supports conservation and preservation of natural, cultural, and ecological resources by controlling invasive plants, noxious weeds, and wildfires. Consistent with and does not change CLUP map, designations, policies, or procedures.
Final Borrow Pit Expansion EA (DOE/EA-1934)	Meet DOE's need to secure raw aggregate sand and gravel material (approximately 10,714,000 bank cubic meters) to support ongoing environmental cleanup restoration projects (e.g., backfill of remediated waste sites), as well as construction and maintenance activities across the Hanford Site.	Final EA and FONSI signed on August 15, 2013.	Hanford is undergoing extensive efforts to clean up contamination resulting from past nuclear defense research and development activities. Cleanup activities can result in large excavated areas needing to be backfilled and revegetated. Eleven existing borrow pits will be expanded or continue to be used are proposed for expansion or continued use, including Pits F, H, N, 6, 9, 18, 21, 23, 24, 30, and 34.	Borrow pits proposed for expansion are located within Industrial, Conservation (Mining), Low-Intensity Recreation, or Preservation areas. The existing borrow pits are approved for use to support Hanford cleanup and are considered pre-existing, nonconforming land-uses. Pre-existing, nonconforming land-uses enables continued land uses established prior to land-use designation. All or portions of borrow pits F, H, N, and 24 lie within one-quarter mile of the Columbia River on Hanford Reach National Monument lands. Consistent with DOE's authority to manage lands within the Monument as necessary to carry out the environmental cleanup mission, use of the proposed borrow sites would be allowable under the June 9, 2000, Presidential Proclamation. Consistent with and does not change CLUP map, designations, policies, or procedures.

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
Final EA for Combined Community Communications Facility and Infrastructure Cleanup on the Arid Lands Ecology Reserve (DOE/EA-1660)	To meet long-term federal agency missions, DOE needs to reduce indirect costs and potential safety impacts, as well as protect cultural and ecological resources, by reducing the impact of people and infrastructure within the Fitzner/Eberhardt Arid Lands Ecology Reserve (ALE) at Hanford.	Final EA and FONSI signed on July 20, 2009.	Remove most facilities on ALE, except those needed by DOE and USFWS, and communications equipment used by local governments and other organizations. Consolidate existing communications capabilities into a single facility on Rattlesnake Mountain consisting of an equipment building and two towers to support multiple antennas and radio repeaters. In addition, remove miscellaneous debris located across ALE from past activities and repair the ALE boundary fence as necessary.	Land within the construction site as well as the ridgeline and base areas where existing facilities and debris were removed are designated for Preservation. The USFWS Hanford Reach National Monument Conservation Plan and EIS also provided for conservation of natural, cultural, and ecological resources within ALE and other Monument lands. Removal of unneeded facilities and debris, reclaiming previously disturbed areas, and reducing the infrastructure footprint with ALE is consistent with and does not change CLUP map, designations, policies, or procedures.
Final EA on the Disposal of Decommissioned, Defueled Naval Reactor Plants from USS Enterprise (CVN 65)	U.S. Navy to remove the reactor compartments of USS ENTERPRISE (CVN 65) at Puget Sound Naval Shipyard & Intermediate Maintenance Facility, prepare the reactor compartments for disposal as reactor compartment packages, recycle the remnant hull sections, and transport reactor compartment packages to Trench 94 for disposal at Hanford.	Final EA and FONSI signed on August 23, 2012.	Reactor compartments from ENTERPRISE would be transported to Trench 94 at Hanford, which has received reactor compartments from the 114 nuclear powered ships that have been processed under the Navy's ongoing program since 1986. The disposal project is expected to take six to eight years to complete.	Land use consistent with 200 Area industrial-exclusive designation and continued waste management operations. Disposal of reactor compartments in Trench 94 is consistent with and does not change CLUP map, designations, policies, or procedures.
Final Tank Closure and Waste Management EIS (DOE/EIS-0391)	Safely retrieve and treat radioactive, hazardous, and mixed tank waste; close the SST system; and store and/or dispose of the waste generated from these activities at Hanford. Treat the waste and close the SST system. Decommission Fast Flux Test Facility and its support facilities at Hanford, manage waste associated with decommissioning the facilities, and manage disposition of the radioactively contaminated bulk sodium inventory at Hanford.	ROD published in the Federal Register on December 13, 2013.	This is the first in a series of RODs that DOE intends to issue. DOE has decided to implement Tank Closure Alternative 2B, "Expanded WTP Vitrification and Landfill Closure," without supplemental treatment at WTP and without technetium-99 removal in the WTP Pretreatment facility. Additionally, DOE is not deciding on treatment of the cesium and strontium capsules in this ROD; when DOE is ready to make a decision, it will conduct an appropriate NEPA review. DOE has decided to implement FFTF Alternative 2	Land use consistent with 200 Area industrial-exclusive designation and continued waste management operations. Decisions made in the ROD are consistent with and does not change CLUP map, designations, policies, or procedures.

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	Expand or upgrade existing waste treatment, storage, and disposal capacity at Hanford to support ongoing and planned waste management activities for onsite and offsite waste.		Entombment. DOE has decided to implement Waste Management Alternative 2, which includes disposal of LLW and MLLW at IDF-East from tank treatment operations, waste generated from WTP and ETF operations, on-site non-CERCLA sources, FFTF decommissioning waste and on-site waste management waste. Refer to the ROD for additional details.	
Final Hanford Reach National Monument Comprehensive Conservation Plan and EIS (USFWS)	Consistent with the Presidential Proclamation establishing the Hanford Reach National Monument, a final comprehensive conservation plan was needed to protect and restore biological, cultural, geological and paleontological resources; identify compatible activities and uses, with emphasis on wildlife-dependent public uses; identify overall need for, and distribution of, visitor facilities, including public access and transportation routes; identify areas of the Monument open to the public, areas open by permit, and areas closed to protect natural, cultural, and ecological resources; protect eligibility of the Hanford Reach as a national wild and scenic river; provide a basis for budget requests to support needs for Monument staffing, operations, maintenance and capital improvements; provide a set of decisions that outline management direction and create a framework for future planning, decision-making, and coordination with other affected stakeholders.	USFWS ROD issued in Federal Register on November 28, 2008.	The USFWS CCP-EIS and ROD provides management guidance for conserving resources and providing public use activities on Hanford Reach National Monument lands. The decision includes adoption of stipulations and mitigation measures identified in Alternative C–1 and Appendix I in the Final CCP/EIS. Implementation of the CCP-EIS will occur over 15 years, depending on future staffing levels and funding. Alternative C-1 strikes a balance between resource protection and the level of public use and access the public expects.	Lands comprising the Hanford Reach National Monument are designated for preservation of archaeological, cultural, ecological, and natural resources. No new consumptive uses (i.e., mining or extraction of non-renewable resources) are allowed. Limited public access is consistent with resource preservation. Decisions made in the USFWS ROD are consistent with and do not change CLUP map, designations, policies, or procedures.

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
Notice of Intent to Prepare an EA for the Proposed Conveyance of Land at the Hanford Site (DOE/EA-1915)	Tri-City Development Council (TRIDEC), the recognized CRO for the Hanford Site, has requested transfer of 1,641 acres of Hanford lands for economic development. Consistent with the Hanford CLUP which designates the subject lands for industrial use, and the HCP–EIS which recognized the potential for future conveyance of industrial-designated lands to the local community for economic development, DOE will consider the TRIDEC request for the transfer of 1,641 acres of Hanford lands to support local economic development.	Notice of intent to prepare EA issued in the Federal Register on September 19, 2012.	DOE anticipates that there may be continuing mission needs, such as security and safety buffer zones on some of the requested lands, making them less suitable for conveyance. Therefore, the lands that will be addressed in the EA analysis will include the acreage requested by TRIDEC and approximately 2,772 additional acres adjacent to the requested lands. TRIDEC's proposal states its intent to work with the City of Richland, the Port of Benton, and Benton County to establish the property as an Industrial Development and Energy Park. The proposal states that TRIDEC may subsequently transfer ownership either to a private user or to one of its public agency partners, such as the City of Richland.	The acreage being considered in the EA analysis is part of approximately 59 square miles of Hanford Site lands previously designated by DOE for industrial uses under the CLUP as analyzed in the HCP-EIS. Conveyance of the land could include title transfer, lease, easement, license, or a combination of these realty actions.
Notice of Intent to Prepare an EIS for the Acquisition of a Natural Gas Pipeline and Natural Gas Utility Service at the Hanford Site (DOE/EIS-0467)	DOE needs to comply with Federal policy and legal responsibilities to reduce costs, GHGs, and dependence on foreign fuel sources, in accordance with the goals and objectives of the Energy Policy Act of 2005 (EPAct), Executive Order (EO) 13423, and EO 13514. The EPAct provides a long-term strategy to confront the energy challenges posed by increasing prices and growing dependence on foreign oil in a comprehensive, economic, and environmentally sensitive way. The EPAct establishes important national energy policy goals and directs DOE to increase energy security through diversification of energy sources, increased energy	Notice of intent to prepare EIS issued in the Federal Register on January 23, 2012.	The 242-A Evaporator currently uses steam from boilers fueled by diesel, and the WTP is expected to use steam from boilers fueled by diesel. DOE has identified potential advantages, including substantial cost savings, of replacing the use of diesel fuel with natural gas, supplementing with diesel fuel as necessary. DOE proposes to make natural gas available to facilities located on the Central Plateau of Hanford to help meet objectives to reduce fuel costs, greenhouse gas (GHG) emissions, and dependence on foreign fuel sources. Because natural gas is not currently available on the Central Plateau, this action would involve entering into a contract with a licensed natural gas utility supplier to construct, operate, and	Natural gas pipeline routes would pass through land designated by the CLUP for either industrial use or conservation (mining). Potential impacts of natural gas pipeline on CLUP map, designations, policies, and procedures to be analyzed in the EIS. Construction of the proposed natural gas pipeline would originate at a new tap on the existing Williams Northwest Pipe transmission line in Franklin County, north of the Pasco, Washington, airport. The pipeline would run westerly across non-DOE lands and under the Columbia River onto the Hanford Site 300 Area, before turning northwest and paralleling Route 4S, terminating at facilities in the 200 East Area of the Central Plateau. The total length of the proposed pipeline is estimated at about 30 miles.

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	efficiency, and conservation.		maintain a natural gas pipeline and deliver natural gas utility service to DOE. DOE proposes to enter into a contract with a licensed natural gas utility supplier to provide natural gas to support WTP and the 242-A Evaporator operations in the 200 East Area of Hanford.	
Revised Draft EA for Nonradioactive Dangerous Waste Landfill (NRDWL) and Solid Waste Landfill (SWL) Closure (DOE/EA-1707) (EA is on hold)	The DOE needs to close the non-operating NRDWL; this facility has not received waste since 1988 (i.e., a non-operating facility). NRDWL would be closed according to *Resource Conservation and Recovery Act of 1976* (RCRA) requirements as implemented through the *Hazardous Waste Management Act* and *Washington State Dangerous Waste Regulations* (WAC 173-303). To achieve maximum efficiency, the adjacent SWL also would be closed concurrently; the SWL has been inoperative since 1996.	Draft EA issued in May 2010; revised draft EA issued in August 2011.	The proposed action provides enhanced protection of human health and the environment through the closure of non-operating landfills at Hanford. Impacts from past and future potential releases of contaminants to the groundwater would be mitigated.	An evapotranspiration (ET) barrier is proposed over both NRDWL and SWL. The ET barrier would consist of fine-grained, low permeability soil and a top layer of the same soil modified for erosion resistance and revegetation. The analysis of barrier construction considers use of Borrow Area C, consistent with the land use designation [conservation (Mining)] established in the HCP-EIS ROD. After consideration of Tribal concerns, This future NEPA document will be completed before using any fine-grained soil for barrier construction at NRDWL/SWL.
RESOURCE AND AREA MANAGEMENT PLANS				
Hanford Cultural Resources Management Plan (DOE/RL-98-10)	DOE is responsible for managing the Hanford Site's cultural and historic resources. The DOE, Richland Operations Office, maintains the Hanford Cultural and Historic Resources Program. The program ensures that cultural resources entrusted to DOE are managed with vision, leadership, and responsibility.	Issued on April 15, 2003; has not been reissued since; updated only when necessary.	Program activities include performing cultural resource reviews for all federal undertakings conducted at Hanford in accordance with the National Historic Preservation Act, Section 106; monitoring Hanford conditions to ensure that important cultural resources are protected; maintaining a database of Hanford records, project records, and regional ethnohistory; maintaining archaeological and historical collections; and any other activities necessary to meet the minimum cultural resource-related requirements.	DOE adopted a CLUP based on analysis in the HCP-EIS. The CLUP establishes lands designated for conservation and preservation (including traditional cultural properties) to be consistent with the protection of archaeological, cultural, ecological, and natural resources. Cultural resource reviews are required prior to any federal undertaking on Hanford lands. The Cultural Resources Management Plan was issued as one of the resource management plans to implement the Hanford CLUP.
Hanford Biological Resources Management	BRMP establishes DOE's objectives, strategies,	Reissued in July 2013; the BRMP revision	All contractors and subcontractors, or any	BRMP is one of the implementation

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
Plan (DOE/RL-96-32) (BRMP)	actions, and general directives for managing biological resources at Hanford. BRMP provides a consistent approach to protect and manage biological resources at Hanford. Essential aspects of Hanford biological resource management include resource monitoring, impact assessment, mitigation, and restoration. Goals include fostering preservation of biological resources, allowing site development with minimal adverse impacts to biological resources, and balancing site cleanup mission with biological resource stewardship.	incorporates two subtier implementation documents, the Ecological Compliance Assessment Management Plan (ECAMP) and the Hanford Site Biological Resources Mitigation Strategy (BRMiS). These documents will cease to be published separately.	other entity performing work on Hanford lands managed by DOE will conduct work in accordance with the policies and guidance provided in the BRMP. Each contractor is responsible for incorporating biological resource protection measures into project planning, requesting ecological compliance reviews for its activities, and implementing mitigation actions, if needed, for any project for which it is responsible. Unless otherwise controlled by legal or contractual requirements, BRMP also applies to lands under lease, permit, or easement.	procedures and controls of the Hanford CLUP. The policies outlined in the HCP-EIS are applied to implement and address DOE's *Land- and Facility-Use Policy* (DOE P 430.1, now covered by DOE Order 430.1B). This policy protects and sustains native species and their habitats at Hanford and maintains capabilities to support site-specific missions and objectives. When evaluating land-use requests through established CLUP implementing procedures and controls, the BRMP provides important information to ensure appropriate protectiveness of biological and habitat resources consistent with the CLUP map, designations, policies, and procedures.
Draft Hanford Industrial Mineral Resources Management Plan (DOE/RL-2000-61, Draft)	Several mineral resources are located at Hanford. Historically, mineral resources extracted at Hanford have been used to make concrete, construct roads, cover waste sites, and general construction. Large volumes of these resources still are needed to support ongoing and future Hanford activities, such as constructing waste treatment facilities and waste site remediation. The objective is to meet Hanford projects needs for borrow materials and manage borrow areas through methods that reduce impacts to the environment, while considering project operations and mitigation costs.	Draft issued in June 2001; never finalized, but continues to be referenced in subsequent mineral resource studies and plans.	This management plan helps DOE fulfill its responsibilities to ensure appropriate use of Hanford's mineral resources and environmental mitigation when using the resources. This plan provides a framework for the operation of existing borrow pits, recommends closure of others that are not being used or may be incompatible with Hanford missions, and provides direction for borrow pits and quarries that might be developed in the future. New borrow pits or quarries may be required and closed borrow pits or quarries may reopen in the future.	The Hanford Industrial Mineral Resources Management Plan was developed as one of the implementing plans identified in the Hanford CLUP. It is consistent with other resource management plans developed to implement the CLUP including the Biological Resources Management Plan and the Cultural Resources Management Plan. The CLUP prohibits extraction of mineral resources in lands designated for Preservation except remediation activities taking place in the Columbia River corridor that are considered a preexisting, nonconforming use. Extraction of mineral resources is permissible in areas designated for Industrial-Exclusive, Industrial, Research and Development land-use; and by Special Use Permit

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
				in areas within the Conservation (Mining) land-use consistent with the CLUP map, designations, policies, and procedures.
STRATEGIC/LONG-RANGE PLANNING DOCUMENTS				
Sitewide Institutional Controls Plan for Hanford CERCLA Response Actions and RCRA Corrective Actions (DOE/RL-2001-41)	Federal laws, Executive Orders, and regulations influence the use of institutional controls (IC) at DOE sites. Some regulatory drivers directly authorize or require ICs, while others do not. DOE also uses ICs when no specific statutory requirement exists to supplement active remediation, pollution control, public and resource protection, and physical security; or to bolster the integrity of engineered remedies. This IC Plan describes how ICs are implemented and maintained; and serves as a reference for selecting ICs in the future.	Issued on May 7, 2014.	Hanford includes waste sites cleaned up under CERCLA response actions; RCRA corrective actions; and treatment, storage, and disposal (TSD) units closed under RCRA. The CERCLA and/or RCRA decision documents identify required ICs. ICs prevent inappropriate uses of land, facilities, and environmental media and prevent unacceptable human health and environmental exposure to residual contaminants that could pose risks above levels deemed protective. ICs generally include non-engineered restrictions on activities and access to land, groundwater, surface water, waste sites, waste disposal areas, and other areas or media that may contain hazardous substances to minimize the potential for human exposure to the substances. Common ICs include procedural restrictions for access, fencing, warning notices, permits, easements, deed notifications, leases and contracts, and land-use controls.	DOE restricts the use of land on waste sites and prohibits activities that would interfere with the remedial activity in accordance with the IC requirements of the CERCLA decision documents and as described in applicable work plans. ICs include land-use and real property controls, which are used to ensure that the use of land is in accordance with Hanford CLUP and CERCLA decision documents. Site evaluations are required prior to any major land disturbance or land-use activity. Excavation permits are required to prevent unplanned disturbance or infiltration as prohibited by CERCLA decision documents. The review process for site-specific land use and land-use requests is defined in the Hanford CLUP. To ensure consistency with the Hanford CLUP map, designations, policies, and procedures; proposed changes in land use are submitted to the DOE Real Estate Office for review and approval.
Hanford Site Cleanup Completion Framework (DOE/RL 2009-10)	This document provides a comprehensive overview of Hanford cleanup and describes possible activities once cleanup is complete. Cleanup requires many dozens of individual decisions. This document shows how single decisions lead to completion of cleanup for the site as a whole. It describes the challenges facing cleanup, the approaches for making decisions for the three	Issued January 2013.	This framework document defines the main components of cleanup. The River Corridor and Central Plateau represent the two main geographic areas of cleanup work. The River Corridor includes the former fuel fabrication area (300 Area), reactor operations areas (100 Areas) and land area not directly affected by past production operations. This region is adjacent to	Active cleanup footprint reduction may occur with completion of primary cleanup activities needed to meet cleanup requirements and conditions consistent with anticipated future land use established by the CLUP. Cleanup decisions that are protective of human health and the environment and that support anticipated future land use established by the CLUP are being made consistent with the land-

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	major components of cleanup, and the actions needed to move from cleanup to post-cleanup activities.		the Columbia River and cleanup must deal with the threats to that valuable resource. The Central Plateau includes the former fuel processing facilities and numerous waste disposal facilities. Included within the Central Plateau is tank waste cleanup. Emergency planning zones will be maintained to ensure public safety as long as waste management operations are occurring on the Central Plateau.	use map, designations, policies, and procedures. Much of Hanford's 586 square miles is designated for conservation and preservation and is consistent with National Monument uses. However, more than 60 square miles close to the City of Richland is set aside for industrial uses.
Hanford Ten Year Site Plan for Fiscal Period 2013 - 2022 (DOE/RL 2012-29)	DOE is responsible for preparing the Hanford Ten-Year Site Plan for the EM cleanup mission in accordance with DOE Order 430.1B, "Real Property Asset Management." A key objective of Hanford cleanup is shrinking the footprint of the active cleanup area to protect the Columbia River, reduce cost, and make land available for other uses. Active cleanup footprint reduction consists of completing surface waste site cleanup, including removing excess facilities, and implementing groundwater remediation systems. Groundwater remediation will continue after facilities have been demolished and waste sites have been remediated.	Issued June 5, 2012.	As cleanup continues to progress, the footprint of active cleanup continues to decrease. As a result, DOE can anticipate receiving requests from outside entities for ownership transfer or lease of land parcels such as the request received in 2011 from the Tri-City Development Council. DOE will consider these requests for "asset revitalization" as they are received. Reducing the footprint of active cleanup does not mean that DOE intends to physically reduce the Hanford boundaries or excess the land. Footprint reduction would, however, result in making some areas available for DOE's reuse consistent with the Hanford CLUP. DOE may consider land transfers in industrial areas in the future to support local economic development and job creation aimed at diversifying the area away from dependence on Hanford cleanup funding.	The 300 Area is designated for industrial purposes, as identified in the Hanford CLUP. Its proximity to the City of Richland, the PNNL, and existing infrastructure make the 300 Area valuable for future industrial development. Following completion of cleanup requirements, DOE will continue to manage Hanford in accordance with the Hanford CLUP map, designations, policies, and procedures; Tri-Party Agreement; Hanford Reach National Monument Proclamation; and institutional controls listed in CERCLA RODs and the RCRA permit.
2014 Hanford Lifecycle Scope, Schedule, and Cost Report (LCR) (DOE/RL-2013-02)	The LCR describes the scope, schedule, and cost estimates for Hanford cleanup. It reflects all cleanup work that is to be completed by DOE and Hanford Contractors. On October 25, 2010,	Issued in January 2014.	The LCR serves as an agreed upon foundation for budget requests and for informational briefings to affected Tribal Nations, the State of Oregon, and Hanford stakeholders. The LCR	Hanford cleanup goals are established to support anticipated future land use as established by the Hanford CLUP. Hanford cleanup focuses on two broad geographic areas: the River Corridor and the

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	DOE, EPA, and Ecology (Tri-Party Agencies) agreed to modify the TPA to incorporate a new milestone, M-036-01, requiring annual submittal of a LCR. The LCR reflects actions necessary for DOE to meet applicable environmental obligations.		supports continued discussions with EPA and Ecology on how and when DOE will complete cleanup, and how milestone changes and adjustments will affect lifecycle scope, schedule and cost.	Central Plateau. Tank Waste Cleanup is a separate cleanup component located in the Central Plateau. River Corridor cleanup levels will be achieved that support the anticipated land uses of conservation and preservation for most of this area and industrial use for the 300 Area. Central Plateau cleanup levels will support continued use for waste management activities under an Industrial-Exclusive land use designation in the "inner area" and Conservation (Mining) in the "outer area" consistent with the Hanford CLUP map, designations, policies, and procedures.
Hanford Long-Term Stewardship (LTS) Program Plan (DOE/RL 2010-35)	The LTS Program Plan describes the DOE long-term stewardship program for managing post-cleanup obligations at Hanford in a safe and cost-effective manner. The Hanford LTS Program manages the geographic areas for which active cleanup has been completed. This management is performed in accordance with the post-cleanup requirements specified in the associated cleanup decision documents.	Issued in April 2012.	Remediated geographic areas of land will transition into the Hanford LTS Program when their required cleanup activities are completed. DOE-RL will manage the Hanford LTS Program until all DOE Office of Environmental Management (EM) missions at Hanford are complete. When continuing missions and cleanup are complete, the management of Hanford is currently expected to transition 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, DOE-RL will manage the Hanford LTS Program in a manner consistent with LM goals, policies, and procedures.	In addition to managing the post-cleanup completion obligations, the Hanford LTS Program manages natural and cultural resources through the framework of the CLUP and in accordance with federal laws, executive orders, Tribal Nations' treaties, DOE directives, and Hanford procedures. The Hanford LTS Program Plan serves as one of the implementing procedures and controls for land use consistent with the CLUP map, designations, policies, and procedures. When evaluating land-use requests through the CLUP implementing procedures and controls, the Hanford LTS Program provides important information to ensure protectiveness of the remedies and the environment.
Infrastructure and Services Alignment Plan (ISAP) (HNF-44238)	ISAP is a strategic-level planning document, supported by planning information, reflecting programs and projects linked to mission needs for the DOE and Hanford	Issued in July 2014.	The ISAP is a collaborative structured planning document that includes current envisioned end states aligned with mission needs, planning information for achieving	Integrated Land Management (ILM) is responsible for evaluating future use of Hanford lands. The program incorporate the best of local government practices

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	Contractors. The ISAP integrates DOE planning parameters and vision implementation documents, including area-wide plans, master plans, and project plans.		those end states, and summaries of current system attributes. The ISAP is a planning document focused on documenting strategic decisions for Hanford infrastructure systems. While these decisions are informed by the various Hanford planning documents, forecasted mission needs are also solicited from infrastructure system owners and other Hanford Contractors as part of the annual update to ensure the most current information is captured.	into the land management activities at Hanford in accordance with the CLUP. The ILM program provides a streamlined planning process that engages project managers and project sponsors who are considering future uses of land early in the decision process along with tools such as a zoning map and development standards to assist in land development. In December 2010, Congress directed DOE to study the feasibility of establishing "energy parks" at sites including Hanford where large tracts of land could be suitable for use in producing energy from alternative sources. DOE is currently partnering with the community on several land-use initiatives consistent with the CLUP (e.g., conveyance of lands designated for industrial use for economic development). The ISAP is prepared consistent with the CLUP map, designations, policies, and procedures.
Central Plateau Cleanup Completion Strategy (DOE/RL-2009-81)	DOE is committed to aggressively move forward to complete the cleanup of Hanford and to shrink the size of the final footprint of the Central Plateau that will require long-term management of wastes and residual contamination. This commitment is an extension of DOE's on-going actions to protect the Columbia River and cleanup activities underway along the River Corridor. The DOE, EPA, and Ecology (Tri-Parties) have agreed that a Central Plateau cleanup strategy is needed. In response to that need, this document presents DOE's Central Plateau Cleanup Completion	Issued September 28, 2009.	The Central Plateau has been utilized to support cleanup of the rest of the Hanford Site as contaminated soils and debris have been brought to the Environmental Restoration Disposal Facility (ERDF) for final disposal. There has also been substantial characterization and investigation of Central Plateau soil waste sites, underlying groundwater, and deep vadose zone contamination. Interim actions to contain and remediate contaminated groundwater have also been implemented.	DOE has exercised its responsibility to determine reasonably anticipated land use as input to the CERCLA process. The Hanford CLUP provides the basis for DOE's determination of future anticipated land use for CERCLA decision making. In accordance with CERCLA requirements, cleanup levels are established commensurate with potential future land uses to ensure protection of those uses consistent with the CLUP map, designations, policies, and procedures. The Central Plateau is comprised of an "inner" and "outer" area. The outer area will be cleaned up to levels consistent with its Conservation (Mining)

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	Strategy. The strategy describes DOE's vision for completion of Central Plateau cleanup, the technical and regulatory path forward, and the decisions needed to achieve the vision. Goals include protecting groundwater, workers, public, and environment; shrinking portions of the Central Plateau requiring continued management; and complying with applicable regulations that govern cleanup.			land use designation per the Hanford CLUP. The inner area will be maintained for Industrial-Exclusive land use and continued waste management operations consistent with the Hanford CLUP.
Hanford Site Active Cleanup Footprint Reduction (DOE/RL-2010-18)	A key objective of Hanford Cleanup is shrinking the footprint of active cleanup to protect the Columbia River, reduce cost, make lands available for asset revitalization (e.g., Energy Parks), and show overall cleanup progress. DOE is committed to protecting human health and the environment while meeting its cleanup and post-cleanup obligations in a safe and cost-effective manner. Reducing the footprint of active cleanup operations is a tangible sign of meeting these obligations. The purpose of this document is to describe what DOE means when referring to shrinking the footprint of active cleanup.	Issued March 17, 2011.	DOE's objective is to significantly reduce the footprint of Hanford active cleanup operations by 49% (roughly 290 square miles) and 90% (roughly 530 square miles) in 2011 and 2015, respectively. Remaining footprint reductions would occur after 2015. Active cleanup footprint reduction consists of completing surface waste site cleanup, including removal of excess facilities, and implementation of groundwater remediation systems. Groundwater remediation will continue after facilities have been demolished and waste sites have been remediated. Site cleanup is normally performed with CERCLA Interim Records of Decision (RODs), Final RODs, or other regulatory documents.	Reducing the footprint of active cleanup does not necessarily mean DOE intends to physically reduce the site boundaries or excess the land. It would result in some areas being available for DOE's reuse consistent with the existing Hanford CLUP map, designations, policies, and procedures. DOE anticipates that the vast majority of Hanford land will remain under Federal management and control for the foreseeable future.
Hanford Site Third CERCLA Five-Year Review Report (DOE/RL-2011-56)	Hanford has made significant progress cleaning up waste sites. For waste sites where hazardous substances, pollutants, or contaminants remain above levels that allow unlimited use and unrestricted exposure, CERCLA requires a review every five years to evaluate the implementation and performance of a	Issued February 28, 2012.	This report presents the five-year review of response actions at Hanford implemented under the CERCLA and TPA. The purpose of this review is to evaluate implementation and performance of remedies at Hanford to determine whether they are—or will be—protective of human health and the environment. Remedies that are not performing	Most of the interim CERCLA RODs were issued prior to issuance of the Hanford CLUP. For these interim RODs, the land use for the 100 Area Operable Units was based on unrestricted use; the 200 Area and 300 Area Operable Units were based on industrial land use. Final cleanup levels are expected to be based on future anticipated land use designated in the

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
	remedy in order to determine if the remedy is or will be protective of human health and the environment. The five-year review requirement applies to all remedial actions selected under CERCLA §121. The methods, findings, and conclusions of the five-year reviews are documented in the five-year review report.		in an acceptable manner are subject to replacement in accordance with CERCLA protocols, policies, and procedures. In cases where a decision is made, based on an evaluation of balancing factors and public input, to leave contamination in place above levels allowing for unrestricted land use, ongoing institutional controls are required to ensure protection of human health and the environment.	Hanford CLUP. The final ROD for the 300 Area specified a residential cleanup level. This is more restrictive than, and consistent with, the Hanford CLUP. The land use designation for the 300 Area remains industrial in accordance with the Hanford CLUP map, designations, policies, and procedures. The 200 Areas (i.e., Central Plateau) has an inner area designated by the Hanford CLUP as Industrial-Exclusive and an outer area for Conservation (Mining). The land-use designations within the River Corridor include high-intensity recreation, low-intensity recreation, conservation (mining), preservation, and industrialization. The Hanford Reach CCP-EIS is consistent with the Hanford CLUP and will ensure that designated areas are free of facility development within the Hanford Reach National Monument. This will serve conservation, restoration, protection, and recreation purposes. Under the Hanford Reach CCP-EIS, limited public use or development of the designated monument area would be allowed consistent with the Hanford CLUP map, designations, policies, and procedures.
Manhattan Project Sites Special Resource Study / Environmental Assessment (National Park Service, U.S. Department of Interior)	The purpose of this study is to comply with the Manhattan Project National Historical Park Study Act (Public Law 108-340), passed in 2004, which directed the Secretary of the Interior to conduct a study on the preservation and interpretation of historic sites of the Manhattan Project for potential inclusion in the National Park System.	Issued in September 2010 and adopted by DOE in March 2011.	In August 2008, the B Reactor was designated a National Historic Landmark. T-Plant is identified as a "signature facility" of the Manhattan Project. T Plant ceased chemical separation in 1956, but it continues to be used for treating and storing wastes. The building is located in a secure area of Hanford and is not accessible to the public. The National Defense Authorization	Detailed information on the current uses of resources in each of the Manhattan Project sites is included in Appendix D of the study. No local planning and zoning concerns have been identified. No changes to surrounding land uses are anticipated that would affect designation of the areas as a National Park Service unit. The Hanford CLUP permits controlled public visits to B Reactor.

Document Type/Document	Purpose/Need	Status	Potential Mission Effect on Hanford	Relationship to Land-Use (Map, Designations, Policies, Procedures)
			Act was passed into law on December 19, 2014, which included a provision to establish the Manhattan Project National Historical Park. DOE and the NPS will establish an agreement to govern their respective roles in administering the facilities, lands, or interest in land under DOE jurisdiction. The agreement will provide that DOE "protects public safety, national security, and other aspects of the ongoing mission of DOE."	The interior of the B Reactor building and the face of the reactor are currently accessible to the public on a limited basis.

This page intentionally left blank.

Appendix B. Cultural Resource Review Summary Table

CULTURAL RESOURCES REVIEW SUMMARY FOR CALENDAR YEARS 2008 THROUGH 2013						
Calendar Year	**Review Requests**	**No Potential to Cause Effects[1]**	**Full Review Required[2]**	**Acreage**	**New Sites or Isolated Finds[3]**	**Results[4]**
2008	114	103	11	425	15	Of the 11 full reviews, no effects or no adverse effects to historic properties at 9 sites; adverse effects at 2 sites; however, adverse effects were mitigated. An addendum was completed to the *Mooli Mooli* National Register determination of eligibility adding another contributing area to the traditional cultural property documentation. *Mooli Mooli* is located near 100-N Area and 100-D/DR Area. It is culturally significant to the Wanapum Tribe and means "Little Stacked Hills." *Source: Hanford Site Environmental Report for Calendar Year 2008 (PNNL-18427)*
2009	167	154	13	3,660	10	Of the 13 full reviews, no effects or no adverse effects to historic properties at 10 sites; adverse effects at 3 sites; however, adverse effects were mitigated. *Source: Hanford Site Environmental Report for Calendar Year 2009 (PNNL-19455)*
2010	273	239	34	6,130	35	Of the 34 full reviews, no effects or no adverse effects to historic properties at 32 sites; adverse effects at 2 sites; however, adverse effects were mitigated. *Source: Hanford Site Environmental Report for Calendar Year 2010 (PNNL-20548)*
2011	186	95	91	1,689	51	Of the 91 full reviews, no effects or no adverse effects to historic properties at 88 sites; adverse effects at 3 sites; however, adverse effects were mitigated. *Source: Hanford Site Environmental Report for Calendar Year 2011 (DOE/RL-2011-119)*
2012	133	75	58	1,090	21	Of the 58 full reviews, no effects or no adverse effects to historic properties at 56 sites; adverse effects at 2 sites; however, adverse effects were mitigated. *Source: Hanford Site Environmental Report for Calendar Year 2012 (DOE/RL-2013-18)*
2013	137	97	40	6,085	13	Of the 40 full reviews, no effects or no adverse effects to historic properties at all 40 sites. *Source: Hanford Site Environmental Report for Calendar Year 2013 (DOE/RL-2013-47)*
TOTALS	1,010	763	247	19,079	145	

NOTES:
(1) "No Potential to Cause Effects" because proposed action in previously disturbed areas of Hanford's 100 Area, 200 East Area, 200 West Area, 300 Area, 400 Area, and 600 Area; exempt from full review.
(2) "Full Review Required" because proposed action involved undisturbed ground, areas that had not been surveyed in the past, or locations in proximity to known cultural resources. Full reviews involved efforts to identify cultural resources that might be affected by the proposed action, assess potential impacts, and develop mitigation measures, as necessary, before proceeding with the proposed action.
(3) Activities to ensure protection of Hanford Site cultural resources are conducted to comply with Sections 106 and 110 of the *National Historic Preservation Act of 1966*, the *Native American Graves Protection and Repatriation Act of 1990*, and the *Archaeological Resources Protection Act of 1979*. New sites and isolated finds did not change CLUP map, designations, policies, or procedures. Protection of new sites and isolated finds is consistent with the conservation and preservation of archaeological, cultural, ecological, and natural resources in accordance with the CLUP.
(4) "No effect" means no archaeological sites were present; "no adverse effects" means archaeological sites were present, but they were not eligible for listing on the National Register. If archaeological sites are listed or eligible for listing on the National Register, then potentially adverse effects are mitigated before proceeding with proposed actions (i.e., MOA developed, effect avoided, followed treatment plan guidelines, and/or archaeological monitoring was conducted).