- **Section 2.0 – HSW EIS Waste Streams and Waste Management Facilities**: Describes Hanford waste management operations, waste types, waste streams, existing facilities, and proposed facilities related to the proposed action and alternatives.

- **Section 3.0 – Description and Comparison of Alternatives**: Describes alternative actions that could be taken at Hanford to manage solid radioactive and mixed waste (waste that contains both radioactive and hazardous constituents), including alternative management strategies for each waste type, and the No Action Alternative. This section also provides a comparison of environmental impacts among the alternatives.

- **Section 4.0 – Affected Environment**: Discusses the human and physical environment that might be affected by radioactive and mixed waste management operations at Hanford.

- **Section 5.0 – Environmental Consequences**: Identifies the potential impacts on the human and physical environment that might result from implementation of the alternatives for waste management at Hanford. This section also addresses environmental justice, cumulative impacts, irreversible and irretrievable commitment of resources, the relationship between short-term uses of the environment and the maintenance or enhancement of long-term productivity, and potential mitigation measures.

- **Section 6.0 – Regulatory Framework**: Identifies regulations and permits that apply to radioactive and mixed waste management operations at Hanford.

- **Section 7.0 – List of Preparers and Contributors**: Identifies key persons who contributed to the preparation of the HSW EIS.

- **Index –** Provides an alphabetized list of key names, terms, and subjects in this EIS and the sections in which each item is mentioned.

- **Vol. II Appendixes –** Provide additional information regarding specific sections of the EIS and discusses key issues identified during the scoping process for the ILAW SEIS.

- **Vol. III Comment-Response Document –** explains DOE's role in the cleanup process at Hanford; discusses key issues raised during the public comment process and responses to those key issues, including changes incorporated into this revised draft HSW EIS; and presents over 3800 comments from federal agencies; State, local, and tribal governments; public and private organizations; and individuals; and DOE's response to each comment.

## 1.2 Purpose and Need and Proposed Action

DOE needs to provide capabilities to continue, or modify, the way it treats, stores, and/or disposes of existing and anticipated quantities of solid LLW, MLLW, TRU waste, and ILAW at the Hanford Site in order to protect human health and the environment; facilitate cleanup at Hanford and other DOE facilities; take actions consistent with decisions reached by DOE under the WM PEIS; comply with local, State, and

federal laws and regulations; and meet other obligations such as the Hanford Federal Facility Agreement and Consent Order (also referred to as the Tri-Party Agreement, or TPA) (Ecology et al. 1989).

To address anticipated needs for waste management capabilities, DOE proposes to do the following:

- continue to operate existing treatment, storage, and disposal facilities for LLW and MLLW, and treatment and storage facilities for TRU waste
- construct additional disposal capacity for LLW
- develop capabilities to treat MLLW
- construct additional disposal capacity for MLLW
- construct disposal capacity for ILAW and WTP melters
- close onsite disposal facilities and provide for post-closure stewardship of disposal sites
- develop additional capabilities to certify TRU waste for disposal at WIPP.

Alternatives proposed to accomplish the purpose and need are described in Section 3. The No Action Alternative is also evaluated as required by NEPA. For purposes of analysis in this HSW EIS, the No Action Alternative is defined as continuing ongoing activities, or as implementing previous NEPA decisions where those activities have not commenced.

## 1.3 Overview of Hanford Site Operations and DOE Waste Management Activities

The Hanford Site occupies approximately 1517 $km^2$ (586 $mi^2$), principally in Benton and Franklin counties of south-central Washington state (Figure 1.1). The Columbia River flows through the northern and eastern parts of the site, which extends about 46 km (25 mi) north from Richland, Washington.

DOE and its predecessors, the Manhattan Project, the U.S. Atomic Energy Commission (AEC), and the U.S. Energy Research and Development Administration (ERDA), have operated the Hanford Site since the 1940s. From the beginning through the 1980s, the primary mission at Hanford was to produce nuclear materials in support of United States defense, research, and biomedical programs. Operations associated with those programs used facilities for fabrication of nuclear reactor fuel, reactors for nuclear materials production, chemical separation plants, nuclear material processing facilities, research laboratories, and waste management facilities. Plutonium production at Hanford has ceased, and DOE activities at the site currently include research, environmental restoration, and waste management. Additional historical information regarding the Hanford Site is available on the Internet at http://www.hanford.gov.

In addition to the DOE activities at Hanford, there are several facilities operated by other agencies at the site. The Laser Interferometer Gravitational Wave Observatory (LIGO) is an advanced scientific observatory for measuring gravity waves at extremely low levels. The project involves the California Institute of Technology, the Massachusetts Institute of Technology, and the National Science Foundation. The Hanford Site was selected for the LIGO because of its available space and seismic stability. A