

### **3.0 REMEDIAL OBJECTIVES**

The primary remedial objective for the cleanup of the Bunker Hill sites is protection of human health and the environment. This RD Work Plan addresses the remedial design for the area identified as the Island Complex Floodplain and Banks, Depositional Areas (DAs) 5, 6, 7, and 8 in the OU3 ROD (EPA, 2002), as well as the Murray Road and Harvard Road North sites. Cleanup objectives for the Spokane River sites include limiting human exposure to soils and sediments containing elevated levels of lead and/or arsenic; stabilizing river banks to prevent re-distribution of contaminants; returning the rivers and tributaries to conditions that will fully support healthy fish and other aquatic receptors; and maintaining or enhancing the riparian, riverine, and upland habitats to conditions protective of aquatic species, waterfowl, migratory birds, and other plants and animals that live in these areas.

The remedy identified in the ROD consists of a combination of access controls, capping, and removals, as appropriate for each site. In general, the remedial design for the Island Complex site will include stabilization of portions of the downstream bank to minimize the re-distribution of contaminants in the river; enhancement and capping of trail sections and stable banks to prevent contact with contaminated soil; installation of signage, vegetation or physical barriers, such as boulders or fencing, to better define the trails; and enhancement (or avoidance of disturbance) to the uplands, riparian, and aquatic habitat. The remedial design for the Murray Road site will generally include a combination of capping of contaminated soil and sediment and revegetation to prevent human contact and reduce impacts to ecological receptors. At the Harvard Road North site, the remedial design will include a combination of removal and capping of contaminated soils to prevent human contact and reduce impacts to ecological receptors as appropriate; motor vehicle access controls and infrastructure improvements to focus boat launch activity and protect primary spawning habitat; and limited enhancement of upland plant communities.

#### **3.1 Design Criteria, Codes, and Standards**

In spring 2006, USACE, on behalf of EPA, prepared a preliminary engineering analysis, topographic survey and conceptual design drawings for the Island Complex site (USACE, 2006a). In July 2006, Inter-Fluve, Inc. (IF), on behalf of Ecology, prepared a technical

memorandum which described the hydrology and hydraulics in the vicinity of the Island Complex site, summarized design criteria, and presented design concepts for the bank stabilization portion of the project (IF, 2006). In May 2006, the U.S. Geological Survey (USGS) performed water velocity measurements at multiple locations at Island Complex and Harvard Road North and produced water velocity profiles at key locations for what is estimated to be the annual flood event. In July 2006, Ecology conducted soil sampling at the Murray Road site to determine the nature and extent of contamination. Ridolfi will consider these previously collected data and associated studies during development of the final remedial design for each site.

The design criteria identified for the Island Complex, Murray Road, and Harvard Road North sites include meeting the goals of the Shoreline Management Act comprehensive plan for the Spokane River, the substantive requirements of a state hydraulic permit as administered by the WDFW, any substantive requirements imposed by the appropriate approval by USACE, and the requirements applicable to cleanup actions performed under the Model Toxics Control Act (MTCA). Additional design criteria may be introduced by project stakeholders or through public outreach. The final remedy will satisfy design criteria related to engineering stability, contaminated soil and sediment control, fish and wildlife habitat, and recreation corridor aesthetics (IF, 2006).