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Development of Quality of Life Performance Standards

Quality of life performance standards were developed as required by the ROD. In the ROD, the USEPA identified performance standards to address air and noise emissions from the dredging operations and the sediment processing/transfer facilities. With respect to air emissions, the ROD requires the dredging and facility operations to comply with applicable or relevant and appropriate requirements (ARARs) that deal with such emissions. For noise, the ROD preliminarily adopted the Federal Highway Administration's noise ambient criteria (NAC) as the performance standard for the facility operations and the New York State Department of Transportation's (NYSDOT's) construction noise impact guidance for temporary construction noise for the dredging. The ROD further indicated that the performance standards for noise would be finalized after getting public input on those standards and that other quality of life performance standards (e.g., PCB air emissions, odor, lighting, navigation) would be developed during design with input from the public and in consultation with the state and federal Natural Resources Trustees. The performance standards set forth in the ROD are included in this document.

Developing quality of life performance standards differs from developing engineering performance standards. Engineering standards are project-specific standards that were developed for dredging resuspension, residuals, and production rates. In contrast, quality of life performance standards are primarily based on ARARs and/or other well-established environmental and scientific criteria. However, one performance standard (odor) is based on the sense of smell, which is subjective in nature and therefore can be difficult to measure and assess. For example, an odor that is objectionable to one individual may not be objectionable—or even detectable—to another individual. In those cases, information collected from those who note odors can assist with determining community impact. In general, however, quality of life performance standards were developed in a manner that resulted in a measurable requirement. In addition, they were developed to be practicable and achievable while being protective of human health and the environment.

The performance standards presented in Section 6 were developed based on the potential impacts (as discussed in Section 4) associated with the anticipated remedial activities (described in Section 2).

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5.1 Technical Approach to Standards Development

The following steps were completed first to define the technical approach to establishing quality of life performance standards:

- **Research/Data Gathering.** Information from other environmental dredging projects was reviewed for potential applicability. However, it should be noted that only limited quality of life data for these projects were available. Use of information from other projects is noted in this document as appropriate.
- **Regulatory Review.** Development of performance standards included a review of regulatory standards, guidelines, and other requirements. Government documents and academic and other organization studies (including industry standards) were reviewed for appropriateness for this project.
- **Contingencies and Mitigation Review.** Performance standards also account for the measures required if a performance standard is not met or is exceeded. Mitigation of exceedances may include a modification in operation or activities, the use of engineering controls, and/or other mitigation methods. Engineering controls and other mitigation measures aimed at reducing quality of life-related impacts were reviewed for applicability to the remedial activities.
- **Rationale.** The performance standards development process included establishing a rationale to select and establish each of the performance standards. The rationale and reasoning for each standard are discussed below.
- **Impact Assessment.** Short-term and long-term impacts associated with pre-, during, and post-remedial activities were considered in developing the performance standards.
- **Consideration of Variability of the Locations of Remedial Activities.**

Dredging operations are expected to extend through the three river sections and to vary based on the target dredge areas. Thus, location and mobility of both sources and receptors were considered.

 - **Land-based Facilities.** Potential impacts from the facilities on surroundings areas will be dictated by various factors, including facility design and layout. Although it is expected that these facilities will be land-based, the ROD requires that the use of water-based facilities be evaluated (see *Water-based Facilities Evaluation*, USEPA April 2004).

Dredging Near Sensitive Areas. Some of the dredging work will occur near structures such as bridge abutments, dams, locks, and wing walls as well as areas near utilities. Remedial activities in those areas may require specialty dredging equipment.

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- **Transportation of Contaminated Sediment.** Once the sediments are processed/stabilized they will be transferred to rail or barge for transport to an approved landfill for disposal or to another facility for beneficial use. Potential quality of life concerns associated with transportation activities also were considered. Remedial activities such as transportation, transfer, and loading at facilities outside the project area were not considered.

- **Demonstration of Compliance.** The RD Team shall develop monitoring plans that address the requirements of the performance standards. These plans are expected to include, at a minimum, an Environmental Monitoring Plan and an RA CHASP. The plans will identify specific procedures, equipment, and responsible personnel in order to protect the residents and workers and to educate and inform the public on project progress. The specific plans (relative to the quality of life performance standards) that are required and the minimum requirements for these plans are described in Table 5-1 and are presented in Section 6.

Table 5-1 Plans to be Developed by the Remedial Design Team

Plan	Elements
Environmental Monitoring Plan	<ul style="list-style-type: none"> ■ Air Monitoring ■ Noise Monitoring ■ Lighting Monitoring ■ Odor Monitoring
Remedial Action Community Health and Safety Plan and Worker Health and Safety Plan for the Remedial Action	<ul style="list-style-type: none"> ■ Worker Education and Monitoring ■ Air Monitoring ■ Contingency Plan ■ Complaint Management Program ■ Site Health and Safety Personnel Contact Information

5.2 Quality of Life Performance Standards Development Process

The quality of life performance standards development process included the following general steps:

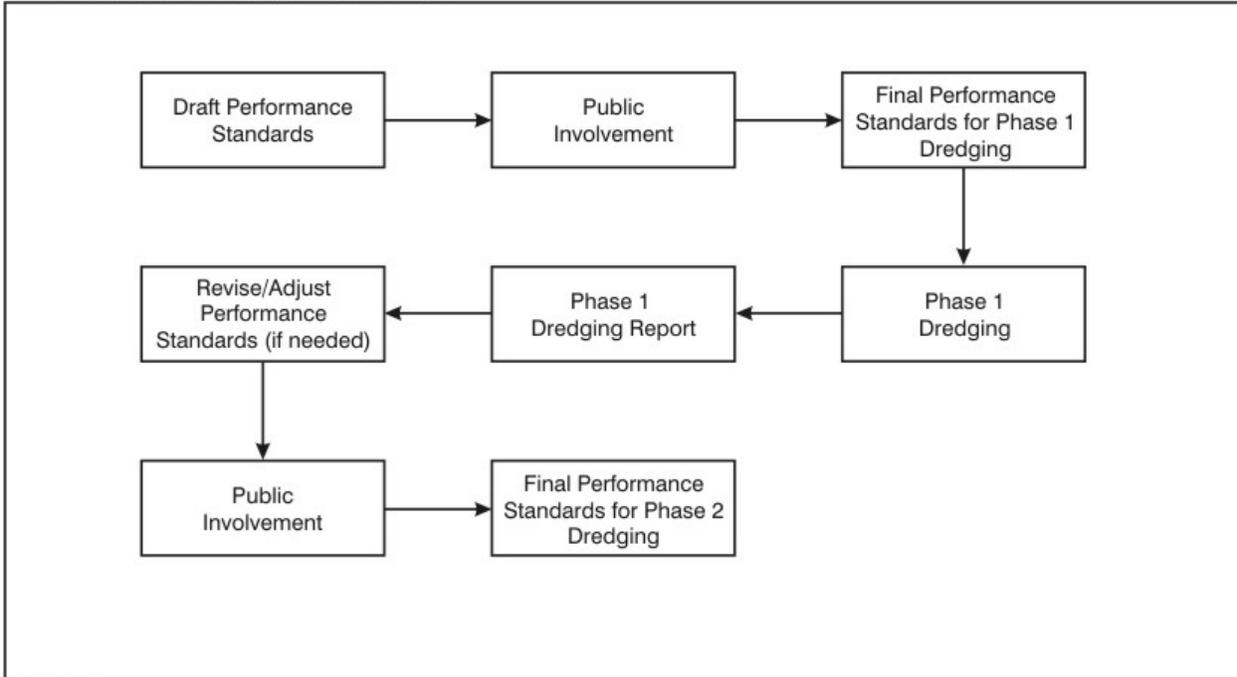
- Definition of the technical approach to standards development;
- Development of draft performance standards;
- Development of the Final Phase 1 performance standards, including monitoring and demonstration of compliance requirements; and
- Revision of Standards after Phase 1 dredging has been completed (as needed).

Additional information on possible revision and adjustment of standards and development of the final Phase 2 dredging standards is included in Section 7. The

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quality of life performance standards development process, including expected points of public involvement, is shown on Figure 5-1.

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Figure 5-1 Hudson River PCBs Superfund Site, Quality of Life Performance Standards Development