

# 100% Remedial Design Basis of Design Report

## Appendix B

### LDW Upper Reach Applicable or Relevant and Appropriate Requirements

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| Topic   | Standard or Requirement   | Regulatory Citation  |  | Project-Specific Comments   | Substantive Compliance Crosswalk   |
|---|---|--|--|---|--|
|   |   | Federal  | State  |   |  |
| Hazardous Substance Cleanup; Sediment Quality | Washington State Cleanup Standards; Marine Sediment Cleanup Standards; SCOs; CSLs |  | MTCA (RCW 70.105D; WAC 173-340); MTCA SMS (RCW 70.105D; WAC 173-204)                                   | Substantive MTCA requirements that are more stringent than CERCLA requirements are ARARs. A combination of sediment dredging, capping, ENR, MNR, and potentially in situ amendment as treatment, along with the minimally necessary use of fish and shellfish consumption advisories as ICs to reduce fish and shellfish consumption, will be employed to meet the substantive requirements of SCO compliance for the protection of human health, marine benthic invertebrates, and higher trophic level species, as set forth in WAC 173-204-560-562, 564 to the extent technically possible, or without a net adverse environmental impact, and at a minimum, the substantive requirements of CSL compliance. ICs will be required as set forth in WAC 173-340-440(4)(a). | BODR Section 3.1   |
| Surface Water Quality                         | Surface water quality standards. Federal recommended AWQC; NTR; State WQS         | AWQC per Clean Water Act Section 304(a), 33 USC § 1314(a) at <a href="http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm">http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm</a> ; NTR at 40 CFR 131.36(b)(1) as applied to Washington, 40 CFR 131.36(d)(14) | Water Pollution Control Act (RCW 90.48); WQS (WAC 173-201A); ALC numerical criteria (WAC 173-201A-240) | Sediment remediation described immediately above will improve surface water quality to an unknown degree in combination with source control implementation under state-led authority. Surface water concentrations shall be at least as stringent as all of the following: 1) all WQS in WAC 173-201A; 2) AWQC unless it can be demonstrated that such criteria are not relevant and appropriate for the LDW or for a specific hazardous substance; and 3) the NTR. See WAC 173-340-730(3)(b), consistent with Sections 121(d)(2)(A)(ii) and (B)(i) of CERCLA and 40 CFR 300.430(e).  | BODR Sections 3.2 and 11.1<br>Water Quality Monitoring Plan (Volume II, Part I, Appendix A)<br>Specification Sections 01 35 43 (Environmental Procedures), 02 41 00 (Demolition and Salvage), 31 25 00 (Erosion and Sedimentation Control), 31 62 10 (Steel Pipe Piling), 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation), and 35 37 10 (Material Placement) |
| Solid Waste Disposal                          | Requirements for solid waste handling management and disposal                     | Solid Waste Disposal Act (42 USC 6901-6992K; 40 CFR 257-258)   | Solid Waste Management (RCW 70.95; WAC 173-350)  | Substantive requirements will be complied with for non-dangerous or non-hazardous waste generated during remedial activities, unless wastes meet recycling or other exemptions.   | Phase II DER <sup>2</sup><br>Phase III Data Report (BODR Appendix A)<br>BODR Section 3.3<br>Specification Sections 32 91 00 (Planting Preparation) and 35 20 23 (Transloading, Upland Transportation, and Disposal)  |
| Waste Treatment, Storage, and Disposal        | Dangerous or Hazardous Waste Management   | Resource Conservation and Recovery Act, Hazardous Waste (42 USC §§ 6901-6992K, 40 CFR 260-279)   | Dangerous Waste Management (RCW 70.105; WAC 173-303)   | Dredged materials contain solid waste subject to solid waste handling requirements above. It would also be hazardous/dangerous waste if it contained a listed waste or displayed a hazardous waste characteristic (e.g., per Toxicity Characteristic Leaching Procedure). Based on the RI, hazardous/dangerous waste is not anticipated in LDW sediments. If it is encountered, 40 CFR Part 262 generator rules in Washington at WAC 173-303-17-202 would be complied with for accumulating or managing such waste on site for up to 90 days. Unanticipated circumstances could require compliance with other hazardous/dangerous waste requirements. State dangerous waste is defined more broadly than federal hazardous waste.   | Phase II DER <sup>2</sup><br>Phase III Data Report (BODR Appendix A)<br>Preliminary Waste Determination (Volume II, Part V)<br>BODR Section 3.3<br>Specification Section 35 20 23 (Transloading, Upland Transportation, and Disposal)  |

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|---|--|--|---|---|---|
|   |  | Federal  | State   |   |   |
| Land Disposal of Waste  | Management and disposal of materials containing PCBs   | Toxic Substances Control Act (15 USC § 2605; 40 CFR 761.61(c))   | Dangerous Waste Management (RCW 70.105; WAC 173-303-140, 141)                           | Based on the RI, dredged material with PCB remediation waste as defined in 40 CFR 761.3 is not anticipated. Any such dredged material will be subject to EPA-approved plans for all cleanup activities, including any sampling, as well as all on-site disposal-related activities. Risk-based disposal of PCB remediation wastes must not pose unreasonable risk of injury to health or the environment. Written EPA approval is required for any PCB remediation waste off-site disposal.   | Phase II DER <sup>2</sup><br>BODR Section 3.3   |
|   | Hazardous waste  | Resource Conservation and Recovery Act Land Disposal Restrictions (42 USC §§ 6901-6992K; 40 CFR 268)   |   |   | See Dangerous or Hazardous Waste Management project-specific comments above. Any dangerous or hazardous waste land disposal shall meet substantive land disposal requirements.  |
| Dredge/Fill and Other In-Water Construction Work <sup>1</sup> | Discharge of dredged/fill material into navigable waters or wetlands                             | Clean Water Act Sections 401, 404 (33 USC §§ 1341, 1344; 40 CFR 121.2 (content of 401 certifications), 230 (disposal sites/mitigation), 232 (definitions/exemptions); 33 CFR 320, 322-3, 328-30 (U.S. Army Corps of Engineers 404 Permitting)) | Hydraulic Code Rules (RCW 77.65; WAC 220-660) DMMP (RCW 79.105.500; WAC 332-30-166 (3)) | 401: EPA will issue the equivalent of state certification, assuring water quality standards will not be violated by remedial action discharges along with necessary conditions, including any mixing zone parameters consistent with WAC 173-201A-400, as developed in remedial design.<br><br>404: Substantive dredge or fill criteria and requirements for discharges will be met, along with substantive mitigation requirements for unavoidable loss of aquatic habitat; mitigation will be assessed and defined as necessary in remedial design. Hydraulic codes provide construction criteria, requirements, and limitations, including for dredging, piers, piles, docks, bulkheads and bank protection, specified technical provisions, and special concerns.<br><br>The use of an established open-water disposal site for dredged material for which there is no practical alternative upland disposal site or beneficial use as set forth in WAC 332-30-166(3) will be approved by the designated federal and state DMMP agencies. | Water Quality Monitoring Plan (Volume II, Part I, Appendix A)<br>BODR Section 3.4<br><br>404(b)(1) Compliance Memorandum (BODR Appendix C)<br><br>Biological Assessment (BODR Appendix E)<br><br>Specification Sections 01 35 43 (Environmental Procedures), 02 41 00 (Demolition and Salvage), 31 62 10 (Steel Pipe Piling), and 35 20 23 (Remedial Dredging, Barge Dewatering, and In-Water Transportation) |
|   | Navigation and commerce  | Rivers and Harbors Act Section 10 (33 USC § 403)   |   |   | Unauthorized obstruction or alteration of navigable waterways is prohibited. Dredging/capping residual elevations will be designed to preserve navigation and commerce. In-water disposal is not anticipated; any in-water disposal site will not obstruct or alter navigation upon completion.   |
| Endangered Species and Critical Habitat                       | Taking or jeopardy to endangered or threatened species; adverse modification of critical habitat | Endangered Species Act (16 USC §§ 1531-1544; 50 CFR 17 (listings, prohibitions), 402 (interagency consultations), 222-224 (endangered and threatened marine species), 226.212 (critical habitat for Northwest salmon and steelhead))           |   | It is unlawful to take (or possess, deliver, carry, transport, or ship) any endangered species, or violate any regulation (promulgated pursuant to Section 4) regarding endangered or threatened species. EPA, in consultation with the Services, shall ensure any authorized action is not likely to jeopardize endangered or threatened species or adversely modify critical habitat, absent an exemption. EPA shall submit a Biological Assessment for formal consultation with the Services, which will produce a Biological Opinion including any reasonable and prudent alternatives or measures to be taken, which will guide remedy implementation, including within specified time periods ("fish windows") for specified activities.  | Biological Assessment (BODR Appendix E, including Attachment E.6 [Habitat Evaluation])<br>BODR Section 3.5<br><br>Water Quality Monitoring Plan (Volume II, Part I, Appendix A)   |

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| Migratory Birds                         | Taking or adversely affecting migratory birds                  | Migratory Bird Treaty Act, (16 USC §§ 703-712; 50 CFR 10 and 21)  |   | Remedy will be carried out in a manner to avoid adversely affecting migratory bird species as defined in federal regulations, including individual birds and their nests.   | BODR Section 3.5<br>Biological Assessment (BODR Appendix E)<br><br>404(b)(1) Compliance Report (BODR Appendix C)  |
| Eagles                                  | Taking or harming eagles                                       | Bald and Golden Eagle Protection Act (16 USC § 668, 50 CFR 22)  | Bald Eagle Protection Rules (RCW 77.12.655; WAC 232-12-292)   | Taking or harming of eagles, their eggs, nests, or young is prohibited; substantive requirements for the protection of bald eagle habitat including nesting, perching, and roosting sites will be met.  | BODR Section 3.5<br>Biological Assessment (BODR Appendix E)   |
| Floodplain Protection                   | Adverse impacts; potential harm                                | Floodplain Management Procedures (40 CFR 6, Appendix A, Section 6, see also Executive Order 11988)  |   | The required evaluation of potential effects of authorized remedial action, to avoid adverse impacts and to minimize impacts for which no practicable alternative exists, followed as necessary by the development of avoidance and/or minimization plans, will be undertaken during remedial design.   | BODR Sections 3.6 and 10.8  |
| Shoreline Management                    | Construction and development                                   |   | Shoreline Management Act RCW 90.58; WAC 173-26; City of Seattle Shoreline Master Plan (Seattle Municipal Code 23.60); City of Tukwila Shoreline Master Plan (Tukwila Municipal Code 18.44); King County Shoreline Master Plan (King County Code 21A.25) | Master plans within their jurisdiction apply within 200 feet of the shoreline to the extent they impose or establish more stringent requirements. The project includes allowed uses within the shoreline environment and will avoid, minimize, or mitigate for potential adverse impacts to the shoreline environment. The project will result in no net loss to ecological function as demonstrated in the Biological Assessment.  | BODR Section 3.7<br>Biological Assessment (BODR Appendix E including Attachment E.6 [Habitat Evaluation])   |
| Air Emissions                           | Ambient air quality standards; fugitive emission/fugitive dust | Clean Air Act (42 USC §§ 7401-7671q; 40 CFR 50)   | Washington Clean Air Act (RCW 70.94; WAC 173-400)   | Any source of fugitive emissions or fugitive dust must take reasonable precautions to do the following: 1) prevent the release of air contaminants; 2) prevent fugitive dust from becoming airborne; and 3) maintain and operate the source to minimize emissions. See especially WAC 173-400-040(4) and (9).   | BODR Sections 3.8 and 11.3<br>Specification Sections<br>01 35 43 (Environmental Procedures) and 01 35 44 (Green Remediation Requirements)                                     |
| Native American Graves and Sacred Sites | Protections  | Native American Graves Protection and Repatriation Act (25 USC §§ 3001 et seq.); American Indian Religious Freedom Act (42 USC §§ 1196 et seq.) |   | Requirements for the protection of Native American remains, funerary objects, and associated cultural artifacts when burial sites are encountered; and protection of tribal exercise of traditional tribal religions, including traditional cultural properties, sites, and archeological resources. See also Executive Order 13007, which requires federal agencies to avoid physical damage to tribal sacred sites and interfering with access of tribes thereto. Compliance will be maintained throughout remedy implementation as may be necessary. | Archaeological Monitoring and Inadvertent Discovery Plan (Volume II, Part I, Appendix D)<br><br>BODR Section 3.9<br>Specification Section 01 35 43 (Environmental Procedures) |
| Noise                                   | Permissible noise levels                                       |   | Noise Control Act (RCW 70.107; WAC 173-60-040-050)  | Maximum levels at specified times for specified durations are in WAC 173-60-040, subject to exemptions in WAC 173-60-050, including 050(3)(a) (sounds originating from temporary construction sites as a result of construction activity) and (3)(f) (sounds created by emergency equipment and work necessary in the interests of law enforcement or for health, safety, or welfare of the community).   | BODR Sections 3.8 and 11.3<br>Specification Section 01 35 43 (Environmental Procedures)   |
| Historic Preservation                   |  | National Historic Preservation Act Section 106 (16 USC § 470; 36 CFR 800)   |   | The effect of any of remedial activity on any district, site, building, structure or object included or eligible for inclusion in the National Register of Historic Places will be evaluated in consultation with the State Historic Preservation Officer during remedial design.   | Archaeological Monitoring and Inadvertent Discovery Plan (Volume II, Part I, Appendix D)<br><br>BODR Section 3.9  |

Notes:

1. Section 408 is not included in the Record of Decision Table 26 and is therefore not listed in this table. A report demonstrating substantive compliance with Section 408 has been prepared as part of the design process and is included in BODR Appendix D.
2. The Phase II DER is not provided with the BODR as it was submitted as an earlier deliverable, but it is publicly available at [ldwg.org](http://ldwg.org).

ALC: Aquatic Life Criteria

ARAR: Applicable or Relevant and Appropriate Requirements

AWQC: ambient water quality criteria

BODR: *Basis of Design Report*

CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act

CFR: Code of Federal Regulations

CQAP: Construction Quality Assurance Plan

CSL: cleanup screening level

DER: Data Evaluation Report

DMMP: Dredged Material Management Program

ENR: enhanced natural recovery

EPA: U.S. Environmental Protection Agency

IC: institutional control

LDW: Lower Duwamish Waterway

MNR: monitored natural recovery

MTCA: Model Toxics Control Act

N/A: not applicable

NTR: National Toxics Rule

PCB: polychlorinated biphenyl

Phase III Data Report: *Pre-Design Investigation Phase III Data Report for the Lower Duwamish Waterway Upper Reach*

RCW: Revised Code of Washington

RI: remedial investigation

SCO: sediment cleanup objective

Services: National Marine Fisheries Service and U.S. Fish and Wildlife Service

SMS: Sediment Management Standards

USC: *United States Code*

WAC: Washington Administrative Code

WQS: Water Quality Standard