

JELD-WEN Marine Engineering Design Report
Ecology Comment and Response Matrix

ID No.	Comment Document	Section Name/Topic	Section/Table/ Figure No.	Ecology Comment	JELD-WEN Response
1	July 3, 2025, email	General Comment – Shoreline Slopes	--	Proposed shoreline slope modifications presented within the EDR need to be clarified. The slope of the shorelines may be modified where currently too steep. Some detail sections are needed to show the difference between existing slopes and final slopes. In general, Ecology's concern is that the modification of shoreline slopes should not result in materials being move seaward where there is more potential for contaminated soils to enter the marine environment. For example, contamination in soil that is previously unsaturated may have more potential for contamination migration if they are pushed to a lower elevation where they become saturated, either part of the time, or all of the time. Such detail sections will help to assess how much soil will need to be moved. The next questions becomes where such soils will be moved to. Both South Shore and Logway detailed shoreline sections showing current and post armoring profiles would be appropriate.	Cross Section B on Figure 15 illustrates shoreline slope modifications where excessively steep slopes will be lessened to designed slopes (between 2H:V1 and 3H:V1). Minor regrading may be allowed in areas where slopes are near the design, but if anything more than surface regrading is necessary to lessen the slopes, clean fill material will be imported. No material on the shoreline slopes will be graded down slope or used to fill lower portions of the slope. Slope armoring is depicted on the cross sections and additional cross sections and details re: armoring on the slopes will be included in the 60% design. Contaminated soil that needs to be removed will be disposed of at the approved disposal facility.
2	July 3, 2025, email	General Comment – EMNR Thickness	--	The EDR specifies clean material placed for EMNR have a thickness of at least 6in. In a previous meeting, Ecology had expressed concern that the boundary between SMA3 and SMA 2 could have been characterized more and had proposed adding extra clean material at this boundary (12in minimum thickness). The EDR did not include that proposal. Ecology wants to ensure that the site meets both benthic and human health criteria for the COCs and cPAHs, keeping in mind that the post construction monitoring will be characterizing to the point of compliance (12 in below mudline).	The boundary for SMA 3 has been expanded beyond the SMA 3 interpolations provided in the CAP (see Figure 7, 8, and 9). The expanded extent of SMA 3 is based SMA 1 and SMA 2 bounding data. The proposed removal extents are delineated using a combination of interpolations, "nearest neighbor" evaluations, and previous engineering design experience to provide more conservative removal areas and expanded EMNR placement areas. With the expanded areas, 6 inches of EMNR material placement is adequate to mix and dilute the remaining contaminated sediment in SMA 2, even along the boundaries between SMA 2 and SMA 3. The interpolations from the CAP are provided on the figures with the removal and material placement extents for comparison.
3	July 3, 2025, email	Assumed Source Control Activities	Section 3.2.1	The EDR States: "The stormwater cleanup actions are being completed as part of the upland remediation project and details regarding that effort will be included in the upland EDR (to be provided by others). <i>We understand this work will be conducted by others.</i> Property owners and their leasees are responsible for obtaining permits and compliance with stormwater regulations associated with all upland industrial use areas at the Site." The highlighted sentence could be interpreted to indicate that stormwater line clean out work is the responsibilities of others (not Jeld Wen). Please revise to make this more clear.	Updated text to remove this statement and clarify this will be completed independently of the work described in the Marine EDR.
4	July 3, 2025, email	Construction Best Management Practices	Section 5	This section mentions BMPs in Appendix D. The Appendix with BMPs is Appendix E.	Revised text per comment.

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5	July 3, 2025, email	Net Environmental Effects	Section 6	Compensatory mitigation measures replace the unavoidable loss of habitat/aquatic resource function and area, including temporary losses. While this section identifies unavoidable impacts that will occur to implement the remedy, such as the (presumed temporary) loss of estuarine wetlands, it does not present measures to compensate for the impacts. Compensatory mitigation (e.g. rebuilding, maintaining, and monitoring) for unavoidable impacts to estuarine wetlands and other resources should be considered; additional consultation with applicable Tribes and regulatory entities is needed to determine the scope of compensatory mitigation. A compensatory mitigation plan for those resources may be required. For example, that plan would specify when nest excluders would be installed (e.g. before Feb. 2026, if work is expected to begin summer 2026) and/or where/how an alternative nesting site would be created if the nesting site is destroyed. Separately, Ecology suggests stating in Section 6 that measures to avoid and reduce impacts to target resources are identified in multiple sections of the document, such as Sections 9, 11, and 12 (i.e. work windows, sequencing, and methods).	Currently JELD-WEN has assumed that any compensatory mitigation requirements will be addressed by purchasing credits from Blue Heron Slough Mitigation Bank, which is pending certification for wetland credits. A draft agreement is currently being developed to reserve the necessary credits to offset estuarine impacts at Ecology’s ratio for Category II wetlands. Work is planned to occur in within the October 1 to February 15 work window, therefore no nest excluder or replacement nests will be needed. If the work cannot be completed in one season, permissions to begin work in June will may be requested as part of the permitting extension process. A site visit including the Tulalip Tribe, City of Everett, WDFW, Ecology, and Anchor QEA took place on September 25, 2025. A follow-up meeting is scheduled for late October or early November with this group to further discuss mitigation requirements. Once mitigation requirements are determined they will be incorporated into the design documents appropriately. Additional language added to Section 6.
6	July 3, 2025, email	Enhanced Monitored Natural Recovery	Section 8.4.4	The EDR states: “The EMNR layer consists of a nominal 6-inch-thick layer of clean silty sand/gravel cover that will tie into the backfill for excavated areas.” A more precise material specification (e.g. D50, min and max grain size) is needed in this section. Such specification should consider both stability and suitability for habitat. Ideally, the EMNR material specification should be satisfactory to various stakeholders interested in improving habitat conditions in the area. We recognize that specifications may need to be adjusted based on available materials, but should start with the specification for the ideal material.	EMNR gradation table and description have been added to the text. It should be noted that the EMNR material is not intended to be stable and will likely move around on the tide flat.
7	July 3, 2025, email	Shoreline Stabilization and Armoring	Section 8.5	Please include the approximate min and max diameter specifications in addition to the D50 values provided in this section. A table is anticipated to be helpful for this.	Gradation tables have been added to the text.
8	July 3, 2025, email	Shoreline Stabilization and Armoring	Section 8.5	A base material for the shoreline armoring of D50 3/8 inch is proposed for the Logway and D50 3 inches proposed for the South Shore. A D50 3 inch base is not anticipated to be sufficient to stop suspended solid transport within the armor pores. A 3/8 inch base layer would have significantly less potential for suspended solids migration, but a geofabric should stop all suspended solids migration. Please consider the addition of a geofabric for the prevention of suspended solids migration. Prevention of suspended solids migration is a critical element of erosion protection at the Site in addition to wave energy dissipation by the coarse rip rap rock. At the minimum, a base layer of D50 3/8 inches is needed beneath the D50 3 inch layer at the South Shoreline if no geofabric is used.	Gradation tables have been added to the text and a 3/8” filter layer has been added to the South Shoreline armoring layers. Filtration analyses were conducted to determine the compatibility of specified material gradation values. To minimize the potential for base material “wash out” or insufficient filtration, filter criteria equations developed by Terzaghi and USACE (Cedergren, 1989) were utilized to select sufficient gradation values for the cap and armoring layers along the Logway and South Shoreline. Geotextile fabric and/or other design considerations, such as rock mats, may be implemented in the upcoming phases of design if warranted.
9	July 3, 2025, email	Shoreline Stabilization and Armoring	Section 8.5	Ecology is concerned with the placement of a six inch thick base layer on a steeply sloped shoreline 3H:1V South Shore and 2H:1V Logway. Thickness of six inches may be difficult to maintain on a steeper slope. Please clarify how such thickness will be maintained, and if there are measures to prevent sloughing of placed materials prior to applying the top armoring layer.	Angular materials with a wide gradation range and including fines for cohesion will be specified. Experience on similar projects and model results suggest these materials will be stable in the short term (during construction) on the designed slopes. However, larger armor stone may be designed for the head of the logway in the 2:1 slope area and at the outlet of the outfall. The construction documents will specify that the armor layer needs to be placed over the filter and intermediate base layers before any sloughing occurs.
10	July 3, 2025, email	Shoreline Stabilization and Armoring	Section 8.5	Section 8.5 state, “Upland bank-area samples are being collected to support the decision for placing armor as a source control measure.” Does this refer to the previously provided dioxin/furans (DFs) in soil data that has been collected? If so, please update this discussion.	Discussion in the text has been updated accordingly based on sample results that have now been received.

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11	July 3, 2025, email	Compliance Monitoring	Section 9	This section states: "Requirements for compliance monitoring will be further established in the OMMP and the Construction Quality Assurance Project Plan to be submitted to Ecology with the 60% Construction Plans and Specifications as presented in the AO schedule of deliverables." Ecology notes that per schedule discussions we do not want to wait for the 90% design for receipt of these documents.	The OMMP and CQAP will be provided with the 60% design submittal, or soon after.
12	July 3, 2025, email	Ongoing Design Considerations	Section 12	The EDR stated: "Contaminate characterization of shoreline bank areas (in progress) to determine if additional shoreline armor will be required". Please clarify this bullet and update as appropriate.	Discussion in the text has been updated accordingly based on sample results that have now been received.
13	July 3, 2025, email	Logyard Placement Plan	Figure 12	The EMNR prism includes area outside the site boundary. Ecology doesn't have an issue with the placement outside the site boundary at this area if it improves constructability but wants to ensure this area isn't used in the calculation for the expected post remedy cPAH SWAC value of 19.97ppt. Additional area within the site boundary may need to be selected to reach the expected cPAH SWAC if that area was included in the calculation.	The EMNR prism was revised to remove the areas outside of the Site boundary and the post remedy cPAH SWAC has been recalculated at 20.1 ppt. See updated Figure 12 and Figure 16.
14	July 3, 2025, email	Construction Best Management Practices	Appendix E. Section 1.7	Appendix states: "Reasonable attempts will be made to completely remove the piling in its entirety; however, pile cut-off will be an acceptable alternative where vibratory extraction or pulling is not feasible, as described as follows. In addition, if a pile is broken or breaks during vibratory extraction, the contractor will employ the following methods: • A chain will be used, if practicable, to attempt to entirely remove the broken pile. • If a pile cannot be removed or breaks off at or near the mudline in SMA-1 or SMA-2, then the pile will be cut off using a chainsaw approximately 12 inches below the mudline. Areas where piles are cut off will be capped with 12 inches of organoclay-amended sand to contain any remaining contamination associated with the pile." Ecology's SCUM document states in section 16.3.2.1 that "In intertidal habitat, cut the piling at least 3 feet below the existing mudline or final grade. Cut it even lower if the area is subject to beach profile changes." Since all pilings are within the intertidal zone they should be cut 3 ft below mudline if full extraction isn't possible.	Appendix E text has been updated to reflect the language in the SCUM.

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15	September 10, 2025, letter	Section 12	Tulalip Tribes Comment #1	Tulalip Tribes Comment #1 Installation of new shoreline armoring requires an HPA and mitigation for impacts from the armoring. The determination that the failed road and asphalt falling into the tidelands was an armored shoreline is questionable. We would like to see a more natural beach without exposed riprap or spall. We suggest covering the capping material with substrate natural to the site and Puget Sound shorelines. Layers of progressively smaller material has proven to work in many scenarios with a final layer of beach fish mix. There are multiple benefits to a more environmentally appropriate shoreline type, and we believe some mitigation for the new shoreline armoring at the site is warranted. We suggest Ecology reach out to the WDFW Regional Habitat Biologist to discuss armoring mitigation requirements at this site. We are available to join in any discussion with WDFW and Ecology on this matter. At a minimum, we want to see any quarry spall covered with a layer of river or round rock which is more natural to the shorelines of the Puget Sound. We may also suggest some level of shoreline enhancement, which would likely include beach/intertidal plantings, and large wood. We anticipate being given the opportunity to discuss such specifics at the 60% design phase. Ecology Response: This comment has not been addressed by Ecology’s previous comments. Ecology also would like to see design features that enhance fish habitat, particularly in the logway. The logway is designated as “Aquatic Conservancy” under the City of Everett’s Shoreline Master Program. This designation is meant to protect high value natural resources, with a particular focus on salmon habitat. The logway scored highly for salmonid use in the 2001 Snohomish Estuary Wetland Integration Plan Salmon Overlay used to identify Aquatic Conservancy areas (City of Everett Shoreline Master Program, 2019). It is important that habitat is preserved and impacts from shoreline hardening are minimized, whenever possible. The energy in the logway is lower and smaller rock is more likely to remain through tidal forces and storms. Ecology requests that discussions regarding habitat-related comments be held between Jeld Wen, Ecology, the Tulalip Tribe, and pertinent regulatory stakeholders. Any habitat-related design change/additions must be incorporated within the 60% design submittal.	Shoreline armoring layers for habitat considerations of a more natural beach material for the top cover will be further discussed with Ecology, the Tulalip Tribe, and other stake holders. Modeling suggests smaller material may not remain in place long-term, but interstitial spaces may fill will smaller material and reduce the amount of exposed armor layer material. Noted in Section 12. Any habitat related design changes will be addressed in the 60% design submittal.

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16	September 10, 2025, letter	Section 2.1.5	Tulalip Tribes Comment #2	Tulalip Tribes Comment # 2 We disagree with the statement in the Draft Marine EDR Section 2.1.5 Biological Survey. It is stated on page 7 paragraph 2 that: “There are no federally listed endangered fish species identified in the project area.” The majority of juvenile salmon migrating out of the Snohomish River exit out of the Main Stem Channel. There is a serious deficit in natural estuary off-channel habitat in the lower mainstem / Port Gardner area. The logway channel is not too dissimilar from a blind tidal channel exhibiting reduced water velocities, where juvenile fish seek refuge during salmon outmigration, February – June. It is highly likely this area is utilized by out-migrating juvenile salmon, including ESA listed chinook salmon during this time. These juvenile salmonids also tend to migrate downstream along the edges of the river where there are reduced water velocities and fewer predators, and they would likely end up in the logway when it is inundated. No evidence is provided to demonstrate the lack of ESA listed salmon presence in this area, per our fish sampling results. The Tulalip Tribes have been conducting fish monitoring efforts across the estuary and Possession Sound for over two decades, and find the above statement claiming no federally listed endangered fish species in the project area, to be factually incorrect. We would like it removed from the Marine EDR. If Ecology would like, we can provide you with the various reports and journal publications we have produced as evidence that our qualification and knowledge on this topic exceed anything the contractors have provided. In the future we recommend the contractor not use this statement unless they have truly vetted the existing information, or conducted extensive multi-year sampling to justify this statement at the location they are reporting on. Ecology Response: This comment has not yet been addressed in Ecology’s comments. Per the Tulalip Tribes’ monitoring observations described in the above comment, and the ‘Snohomish River Basin Salmon Conservation Plan’, ESA listed fish species are present in the project area (Snohomish Basin Salmon Recovery Forum, 2005). Ecology requests revision of this section to reflect data collected by the Tulalip Tribes and other reliable sources.	Section 2.1.5 text has been updated to address the comment.
17	September 10, 2025, letter	--	Tulalip Tribes Comment #3	Tulalip Tribes Comment # 3 Any capping or armoring at the site needs to be designed so as not to compromise the current restoration efforts along the Maulsby mudflats. There is currently a pilot project effort for the beneficial use of dredge material to place material along the riprapped waterfront area along the mudflats. Any cleanup work should avoid causing complications to this effort. We are open to a meeting with the PLPs, their representatives, or contractors, to provide information about this effort and discuss how/if any clean up and capping operations will affect it. Ecology Response: Please work with the Tulalip Tribes and Port of Everett to maximize compatibility/minimize conflicts of cleanup plans with anticipated future site uses. Ecology requests that Jeld Wen discuss this comment within the EDR including how a later regional beneficial reuse of dredged sediments project could affect or be affected by the Jeld Wen marine cleanup work.	Jeld Wen will continue coordination with the Tulalip Tribes and City of Everett to maximize the compatibility of the Site cleanup with the Maulsby mudflats restoration efforts.

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18	September 10, 2025, letter	Section 9.1.3	Tulalip Tribes Comment #4	Tulalip Tribes Comment #4 You will need to contact our Cultural Resources staff personnel to review the potential impacts to cultural resources at the site. The site is located in the area of a large former village site. Simply providing information about the depth at which undisturbed soil was found, and stating that work will not take place at or below that depth is likely not sufficient to alleviate concerns about impacts to the Tribes’ cultural resources. This is of particular concern for areas in the intertidal area where excavation of contaminated sediment will occur. Please contact Richard Young, Tulalip Tribes Cultural Resource Manager, 360.716.2652, ryoung@tulaliptribes-nsn.gov. Ecology Response: The EDR mentions that the Tulalip Tribe was consulted with in cultural resources planning. The tribe does not feel this concern has been fully met and Ecology agrees that the cultural resource manager needs to be made aware of and agree to the plan in the EDR before we are completely satisfied that cultural resources have been appropriately reviewed. Ecology has forwarded the PRDI Archaeological Monitoring Report to the Tulalip Tribe’s Cultural Resources contact. In addition, Ecology Toxic Cleanup Program’s (TCP’s) Archaeologist will be reviewing cleanup plans prior to cleanup and may issue Cultural Resources compliance requirements. At this time, Ecology is not providing any comments on the Cultural Resources-related elements of the EDR but notes that revision may be required within the 60% or later design submittals.	Noting that no action is required at this time, but additional cultural resources consultations may be necessary as the design develops. Noted in Section 12.
19	September 10, 2025, letter	Section 6	Tulalip Tribes Comment #5	Tulalip Tribes Comment #5 If any Osprey nests are expected to be lost in association with proposed piling removal activities, an equal number of new nesting piles must be installed in a timely manner. Installation of osprey nesting pilings has been implemented across the Snohomish Estuary and Tulalip Reservation when creosote piling work has been conducted. We would like to maintain a no net loss of nesting sites for the osprey in the area. Ecology Response: This is something that other agencies are also concerned about and is also being discussed with US FWS and WDFW. Ecology understands that no Osprey nests are to be removed during the proposed cleanup work, but some nests may be sufficiently proximal such that potential impacts from noise during cleanup work should be considered. Ecology understands that pertinent regulatory agencies will provide requirements on this subject during permitting processes.	Coordination with the various vested agencies will continue and work windows will be adjusted as determined. Osprey nesting site requirements will be specified in the issued project permits and incorporated into the remedial design.

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20	September 10, 2025, letter	Section 3.5.3	Tulalip Tribes Comment #6	Tulalip Tribes Comment #6 More assessment may be warranted for the following potential issues: i. Carefully determine if 3/8" rock is adequate to prevent suspended solids migration on mudflat areas. Consider adding geofabric as necessary to ensure protection from contaminants. ii. Carefully assess the potential for lateral migration of contaminants from under uplands, or from under capped areas. Ecology Response: Comment #6i mirrors a similar comment Ecology provided within our July 3, 2025 comments. Ecology requests the following analysis to assist in addressing this comment: If no geofabric is to be used, a quantitative analysis should be performed, consistent with the methodology used to size a water well filter pack. This analysis includes taking grains size analysis data for native soils, and comparing them with the proposed base/filter media size (e.g. 3/8 inch rock). The results of the analysis should include the calculated percent passing and percent retained materials. Based on the dioxin/furans concern in shallow soils, Ecology must approve the sizing of base layer to ensure sufficient containment of such soils. With respect to the question of lateral migration from contaminants from under uplands or from under capped areas (Comment #6ii) Ecology requests an analysis of the soil-to-groundwater-to-surface water pathway for the contamination that is to remain at the Site following completion of cleanup work. This analysis can be provided as a standalone brief technical memorandum that should provide discussion and evidence on why this pathway will not result in recontamination of the marine environment following the sediments cleanup work. The analysis should include contaminant fate and transport analyses and discussion for site contaminants, and groundwater data that supports this assertion.	Comment #6 (i): Section 3.5.3 and Appendix B have been revised to address this comment. Comment #6(ii): See Attachment 1 to this comment and response matrix.

Notes:
TCP: Toxic Cleanup Program
AO: Agreed Order
CAP: Cleanup Action Plan
CQAP: Construction Quality Assurance Plan
EDR: Engineering Design Report
EMNR: enhanced monitored natural recovery
ESA: Endangered Species Act
HPA: Hydraulic Project Approval
OMMP: operations, monitoring, and maintenance plan
PRDI: Pre-Remedial Design Investigation
SCUM: Sediment Cleanup User's Manual
SMA: sediment management area
SWAC: surface-weighted average concentration
USACE: U.S. Army Corps of Engineers
WDFW: Washington Department of Fish and Wildlife

Attachment 1

SLR Memo

(Pending)