Focus Puget Sound

DEPARTMENT OF ECOLOGY
State of Washington

Summary Response to Public Comment on:

Interim Remedial Action: Draft Cleanup Action Plan (CAP) and Engineering Design Report (EDR) for Phase II

Draft SEPA Checklist and Mitigated Determination of Non-Significance for this action for Phase II

Custom Plywood Mill Site

Anacortes, WA

Puget Sound Initiative:
Reaching the goal of a healthy, Sustainable Puget Sound now and forever

February 2013

Focus
Puget Sound

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Puget Sound Initiative

Protecting and Restoring Puget Sound

The Puget Sound Initiative, established by Governor Gregoire and the Legislature, is a collaborative effort - among local, tribal, state and federal governments; business, agricultural and environmental interests; and the public - to restore and protect the Sound.

A leading source of pollution to the Sound is contaminated sites around its shorelines. Ecology has accelerated its efforts to clean and restore these contaminated sites within identified priority bays. Within these bays, Ecology is cleaning up 50 - 60 sites within one-half mile of the Sound. Cleanup actions will help to reduce pollution and restore habitat and shorelines in Puget Sound, resulting in larger areas of usable shoreline habitat for fish, wildlife, and people.

Puget Sound Initiative priority bays

Anacortes Baywide Cleanup - *Fidalgo & Padilla Bays*

Ecology is taking a baywide rather than site-specific approach to cleaning up numerous sites within a geographic area. In Anacortes, local, state and federal agencies; local Native American tribes; businesses; and property owners are working to restore the waterfront – cleaning up several old industrial sites and restoring waterfront areas for fish, animals, and people. This unique, baywide collaboration means more cleanups and restoration are happening faster. Important waterfront uses – shipbuilding, parks, recreation, housing, fishing, cultural uses, and others – can thrive in a revitalized and healthy waterfront environment.

Sites in the Anacortes area include (see map on page 32):

- **Cap Sante Marine**
- **Causeway Project**
- **Custom Plywood Mill**
- **Dakota Creek**
- **Former Shell Oil Tank Farm**
- **March Point Landfill**
- **MJB Properties**
- **Port's Pier 2 Log Haul Out**
- **Scott Paper Mill**
- **MJB South Hydro Fill**

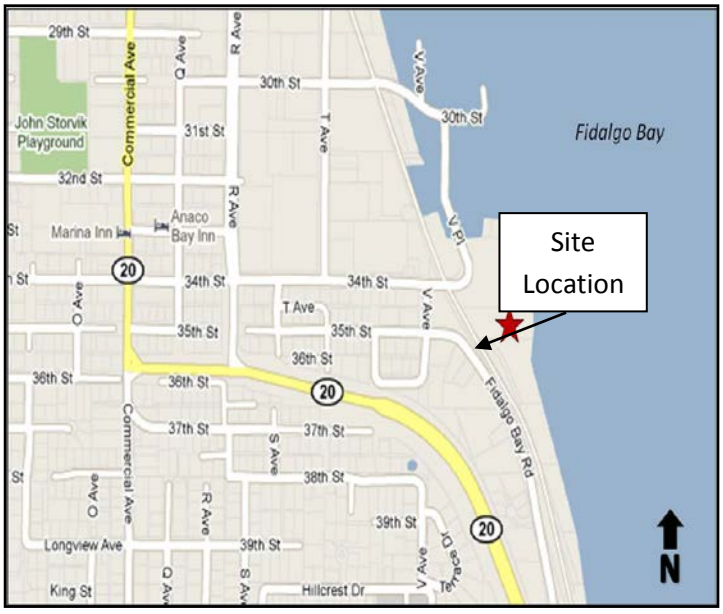
For more information on these sites visit:
http://www.ecy.wa.gov/programs/tcp/sites_brochure/psi/anacortes/psi_anacortes_bay.html

Custom Plywood Mill Site

Site Background

The Custom Plywood Mill Site is being cleaned up under the Puget Sound Initiative. It is located on the west shore of Fidalgo Bay, near 35th Street in Anacortes, and can be seen from the water and the Tommy Thompson hiking trail (see map below). The northern part of the Site is currently used for temporary boat storage, and the rest of the property is vacant except for abandoned building remnants/pilings and debris. Wetlands are present on the site. The property has historically been a sawmill and wood box factory, then a plywood mill. Mill features included:

- Hog-fuel boiler (which burned wood scraps to produce energy).
- Drum and tank storage area.
- Above-ground storage tanks containing fuel oil, gasoline, diesel, and propane.
- Phenol formaldehyde resin and caustic storage tanks (for making plywood glue).
- Machine shop and metal shop.
- Area for spraying paint and oil.
- Transformer yard.



Soils and contaminated material in the upland portion of the site were removed and disposed of off-site, and a 12,000- square-foot wetland mitigation area and vegetated buffer zone were constructed in the upland area in 2011. The remaining upland portion of the Site was graded and hydroseeded with grasses, and a stormwater bio-swale was built along the southern section of the uplands.

Groundwater beneath the Site does not meet drinking water standards due to the proximity of saltwater, and also has elevated concentrations of arsenic, copper, and nickel.

Marine sediments are contaminated with dioxins and wood waste/debris.

Status and Proposed Cleanup

Site Status

March 2008: Ecology and the Potentially Liable Persons (PLPs), GBH Investments LCC, entered into an Agreed Order for Site cleanup.

February 2009: The Remedial Investigation and Feasibility Study (RI/FS) Work Plan was finalized and approved.

July 2008 - December 2010: RI data (soil, groundwater, and marine sediment samples) were gathered.

February 15 – March 17, 2011: Public comment period was held for the draft RI/FS Report including the Phase I Interim Action Work Plan, and for documents supporting the proposed upland Interim Action: the draft Cleanup Action Plan (CAP) and draft Engineering Design Report (EDR), and for the State Environmental Protection Act (SEPA) Mitigated Determination of Non-significance (DNS) for Phase I.

September 2011: The Remedial Investigation and Feasibility Study (RI/FS) and Cleanup Action Plan (CAP) and Engineering Design Report (EDR) for Upland Phase I construction for Interim Action Work Plan were finalized with draft summary response to Public Comment on Interim Action.

July - November 2011: A Phase I Interim upland remedial action was conducted in the upland area in the summer/fall of 2011. Contaminated material was removed and disposed of off-site. A 12,000-square-foot wetland mitigation area was newly created at the southern corner of the upland area.

August 29 - October 1, 2012: Public comment period was held for the draft Cleanup Action Plan (CAP) and Engineering Design Report (EDR) and State Environmental Policy Act (SEPA) Checklist and SEPA Mitigated Determination of Non-Significance (DNS) for Phase II Interim in-water work.

What's next?

A **final preferred alternative** for the in-water portion of the Site was selected after public comments on the Draft CAP-EDR and Draft SEPA Checklist for Phase II interim in-water work were compiled and evaluated. Phase II interim in-water cleanup is expected to begin in July 2013.

Proposed Cleanup

Phase II interim Action Work Plan, including the Draft RI/FS, Draft CAP, and Engineering Design Report for inter-tidal and near-shore sub-tidal area, describes the cleanup in detail. In summary, the proposed Phase II interim in-water cleanup is identified as follows:

Interim In-Water Cleanup *(Cleanup begins summer 2013)*

- Demolish and remove marine pilings and other concrete structures/debris, where needed, to prevent navigation hazard and allow excavation.
- Excavate and dredge contaminated sediment up to 6 feet below sediment-water interface in the near-shore and intertidal areas, and up to 2 feet below sediment-water interface in shallow offshore areas.
- Dispose of contaminated sediment off-site.
- Construct protective in-water features (aquatic spit and jetty extension) for the protection of shoreline and further erosion, and habitat enhancements.
- Connect the consolidated wetland mitigation area to Fidalgo Bay.

Involving the Community in Cleanup

A significant milestone was reached recently with the issuance of the following Interim Action documents for the Custom Plywood Mill Site:

- **Draft Interim Remedial Action (Phase II): Cleanup Action Plan (CAP) and Engineering Design Report (EDR) for Phase II interim in-water remedial action.**
- **Draft State Environmental Policy Act (SEPA) Checklist and Mitigated Determination of Non-Significance for Phase II interim in-water remedial action.**

These draft documents were issued for public comment on August 29, 2012, and the public comment period ran through October 1, 2012. During the public comment period, Ecology provided the following public involvement materials and opportunities:

1. Distributed a fact sheet describing the Site and the documents through a mailing to addresses in the area and other interested parties.
2. Published a paid display ad in *The Anacortes American, The Skagit Valley Herald, and the Clamdigger*.
3. Published a notice in the Toxics Cleanup Program Site Register.
4. Published a notice in the Ecology Public Involvement Calendar.
5. Posted draft documents on the Ecology website.
6. Provided copies of the documents through information repositories at Ecology's Headquarters Office and the Anacortes Public Library.
7. Issued a press release on September 2, 2012.

This Summary Response to Public Comment provides information about the Custom Plywood Mill Site and responds to public comments received during the public comment period. Ecology has reviewed all comments received on the draft documents and the SEPA determination. After careful consideration of comments received, Ecology determined that no changes to the draft documents issued for public review were needed.

Comments and Responses

The comments received were reviewed and evaluated by the Ecology cleanup team. Comments were then categorized into 10 areas for response. Many comments touched on aspects of more than one comment category, and the comment summaries are coded to individual commenters. The comment categories include:

1. **Selection of preferred alternative.**
2. **Sediment capping by the installation of the spit.**
3. **Cleanup areas and dioxins cleanup/remediation levels.**
4. **Cleanup construction cost issues.**
5. **Habitat improvement.**
6. **Human health risk due to fish consumption.**
7. **General support for the project cleanup and the Puget Sound Initiative.**
8. **Mitigation.**
9. **Monitoring during and after the Phase II in-water cleanup construction.**
10. **Schedule, implementation, and process issues.**

A total of 10 persons provided comments through letters and e-mail messages regarding the draft documents. In the comment table, each commenter is referenced by an assigned comment number.

List of Commenters:

- Charles Turner, local resident, Comment 1
- Dan Pentilla, local environmental professional, Comment 2
- Betty Carteret, local resident, Comment 3
- Wendy Steffensen, RE Sources, Comment 4
- Christine Wood, local resident, Comment 5
- Rick Boge, local resident, Comment 6
- Diane Jahn, local resident, Comment 7
- Erica Pickett, WSU beach watcher, Comment 8
- Matt and Bonnie Kerschbaum, local residents, Comment 9
- Timothy Manns, local resident, Comment 10

1. *Selection of preferred alternative*

Responses included in this category relate to comments about the process of evaluating environmental impacts, evaluating cleanup options, and selecting a cleanup alternative.

Comment	Ecology's Response
1.1 The phase 2 in-water remediation now consists of smaller footprint than previously shown in the RI/FS. Initially, under option A3, nearshore intertidal areas were to be dredged to 6' and subtidal areas where dioxin > 25ppt regardless of eelgrass presence or where dioxin >10ppt and there was no eelgrass were to be dredged to 2'. Currently, it appears that nearshore areas will be dredged, but that only a portion of the subtidal areas will be dredged. The change in this scenario has been doubtless due to funding constraints, with some of the work being put off until an undetermined time for Phase 3 cleanup. While segmenting the cleanup may be necessary, we find that leaving dioxin-in-place at concentrations greater than 25 ppt will result in unacceptable risks. In accordance with Alternative A3, please reinstate the removal of all dioxin-contaminated sediment that exceeds 25 ppt, regardless of eelgrass presence. (See Figure 5-1, CAP) As shown in the human health risk assessment, removal of the most highly contaminated spots have the greatest potential to reduce health risks to the community. [Comment 4]	As presented in the RI/FS (dated September 2011) for Interim Action, option A3 consists of upland excavation and backfill, intertidal excavation and backfill, subtidal dredging and backfill, removal of derelict structures in the upland and intertidal/subtidal elevations, and subtidal enhanced natural recover through implementation of a Thin Layer Cap (TLC). Phase II as presented in the current CAP/EDR represents a subset of Option A3 addressing intertidal excavation, subtidal dredging (where practicable), and removal of derelict structures in the intertidal and subtidal along with installation of protective in-water features and habitat enhancements. Phasing of option A3 (i.e., Phase II and Phase III) was due largely to permitting constraints where uncertainties in remediation approach and/or significant impacts to sensitive habitats (e.g., eelgrass habitat) prevented the issuance of a permit to proceed. As a consequence, Phase II was developed during a mid-permitting effort to consist of everything that could be clearly evaluated for effects on natural resources and ESA- (the Endangered Species Acts of 1973) listed species. Currently, Phase III includes the TLC and remediating a small portion of eelgrass where dioxin concentrations are greater than 25 ppt. Much of the uncertainties with Phase III permitting will be addressed with the implementation of the TLC pilot study. The results of the study will help refine the design of the TLC (thickness, amendments, implementation) to the point where federal and state agencies can evaluate this phase for various permits. Ecology expects that the TLC pilot study results will indicate that no dredging of the existing eelgrass bed is necessary.

Comment	Ecology's Response
1.2 The State is pushing to reduce hard armoring on shorelines due to the severe degradation of aquatic habitat that results. Conversely, this plan includes several significant areas of increased hard armoring. Ironically, one of the planned interpretive signs to be placed on the Tommy Thompson trail, which passes the site, as part of the Ecology funded Trail Tales program is one explaining the detrimental impact of hard armoring and efforts to replace this approach with options more suitable as wildlife habitat. The plan should minimize the use of hard armoring and include the feasibility of utilizing alternative bank stabilization approaches. I have included some excerpts below from a coastal zone management report related to this concern. *Washington State Coastal Zone Management Program Section 309 Assessment and Strategy, Fourth Round, Washington Department of Ecology, August 2006:* "… Shoreline armoring extends over 30% of the Sound's shoreline… Shoreline armoring results in a wide range of environmental impacts. These include degradation of shoreline habitat, beach loss, fragmentation of riparian vegetation, and modified erosion patterns. Concern about nearshore habitat losses, particularly as they affect threatened and endangered salmon stocks, has greatly elevated public attention on armoring during the last several years and made it the focus of many regulatory and restoration based planning efforts. Emphasis is now being placed on avoiding development that will require erosion control structures, as vegetative bank stabilization and beach nourishment." [Comment 5]	During the initial development of remediation alternatives for the Custom Plywood site, Ecology was faced with the competing concerns of remediating Site conditions after 80^{+} years of industrial use, protecting remediated shorelines, and enhancing habitat function while utilizing the smallest in-water footprint possible (i.e., least amount of fill). The current design represents a compromise of all three, providing the best alternative possible for meeting remediation goals. The amount of hard armoring is minimized and localized to the jetty extension and a very small section of the bulkhead retrofit. We investigated softening the extension, but coastal modeling showed that softer material (i.e., sand and gravel) would not be stable and would require constant re-nourishment. Moreover, this material would likely migrate south into existing eelgrass. The jetty extension is necessary and is the most desirable choice to protect the shoreline where soft armoring is possible. This creates opportunity for habitat enhancement (or soft-shore armoring) of approximately 1200 feet where currently it is covered by brick rubble and sawdust. Approximately 510 cubic yards of habitat mix material will be placed over 1.25 acres along the shoreline. Soft armor material will be spread to form a shallow slope beach face extending from OHW to approximately –2.0 feet MLLW or the extent of the shoreline excavation area (approximately 50 feet waterward of OHW) across the Site. Soft armoring will include a minimum of 6 inches of material placed between approximately +4 and +9 feet MLLW to provide substrate for forage fish spawning, and will be graded to naturally taper to the toe of the shoreline remediation area. Soft armor will provide a sufficiently flat slope for wave attenuation (i.e., slope of greater than about 9H:1V) and habitat mix at the between 0 to +10 feet MLLW elevation for habitat use. Material will be

Comment	Ecology's Response
	placed to the extent possible from the shoreline using long-reach, land-based heavy construction equipment. Material placement that cannot be done from land will be completed using barge-based equipment. Following remediation activities, dunegrass will be planted along the OHW line of the property shoreline.
1.3 To ensure the Plywood Mill cleanup complements the biological health of the Bay and all organisms that interact with it as much as possible, I urge a more precautionary approach that includes the following: 1. Greatly increase the number of sediment sample sites in order to reduce the uncertainty and lack of confidence raised in the Draft CAP/EDR over removal of dioxin-impacted sediment (1st paragraph of 3.3 on page 3-7 and 2nd paragraph of 3.3.2 on page 3-8). 2. Treat contaminated sediment under the area of the spit the same as other contam-inated sediment on site before capping that area with the spit. (Spits typically move around over time, which would expose these contaminated sediments to wave action.) 3. A preferred alternative that dredges all dioxin-affected areas > 10 ppt and dredges up to 6' below grade where wood waste > 1 foot thick. 4. A preferred alternative with an increased biologically active zone-point of compliance in sediments, for example 50 cm, as there are many organisms in our region living in marine mud well below the proposed 10 cm point of compliance. (I suggest you consult with the Ecology scientists at Padilla Bay for a reasonable depth to use for Fidalgo Bay.) 5. Strengthen the section on the Compliance Monitoring Plan with language such as: clearly articulated and strict trigger points, performance	Comments noted. Please refer to Ecology's response to specific comments and each comment below: 1. To date, we have collected 51 surface, subsurface, and eelgrass samples throughout the 19-acre area. See "Draft Field Investigation 2012 Sediment Dioxin and Wood Waste," available in Appendix A of Phase II CAP/EDR for more details. We believe we have the degree of certainty needed to proceed and have designed remediation activities to be overly conservative given the information we have at present. Further sampling to reduce uncertainty would provide diminishing returns and would be very expensive. 2. The aquatic spit will be constructed so that contaminated sediment is covered similar to an engineered cap where contaminated sediment would be covered with several feet of sediment. This is also the approach to the intertidal excavation where potential contaminated sediment would be covered with several feet of sediment. Furthermore, areas with contaminated sediment greater than 25 ppt would be located under spit core material (e.g., reclaimed quarry spall or other similar large rock) which would ensure adequate protection from exposure to potentially contaminated sediment and would also be biologically unavailable. Based on waves' hydro-dynamic analysis, as sea level rises, the proposed cap

Comment	Ecology's Response
requirements & contingency response actions, as well as more frequent and comprehensive conformational monitoring, if necessary to ensure the proposed cleanup actions are effective. [Comment 6]	(aquatic spit) will be less susceptible to wave energy and scour; thus, the current design is interpreted as being conservative. Details of cap performance criteria are being developed in a remediation performance plan. Cap performance will need to be maintained for the remediation action to be a success. 3. The current alternative takes into account a large amount of eelgrass habitat that has concentrations of dioxin between 10 to 25 ppt. Dredging this level of contamination would remove approximately 14 acres of eelgrass which is viewed as highly productive habitat on a regional scale and is regularly used by juvenile salmonids, herring, and Dungeness crab. Applying a TLC to these areas will reduce exposure pathways and the overall risk through bioaccumulation and consumption (see Human Health Risk Addendum for the Custom Plywood Interim Action Work Plan – CAP and EDR). Based on our analysis, dredging these areas will not reduce exposure pathways beyond applying TLC but will reduce overall habitat quantity and quality for Fidalgo Bay and will result in a net impact to shellfish and salmonids. 4. During this current phase of work, sediment will be dredged a minimum of 2 feet, which exceeds the suggested 50 cm point of compliance. The point of compliance for capping as part of the Phase III scope may be adjusted based on the results of the Thin Layer Cap (TLC) pilot study where the degree of bioturbation within the project site is being investigated. 5. We are currently developing a remediation compliance monitoring plan with remediation requirements that will be in agreement with newly developed cleanup standards.

2. *Sediment capping by the installation of the spit*

Responses included in this category relate to comments about design and function of in-water spit as a cap.

Comment	Ecology's Response
2.1 The spit, originally visioned as a measure for shoreline protection and habitat enhancement, is now also being called a cap. This was not visioned in the RI/FS and therefore cannot be said to have been vetted by the public. Contamination under the spit feature should be dredged to appropriate depth, as originally outlined. Natural spits are dynamic features and not appropriate to cap contaminated materials. While both shoreline protection features and caps are engineered systems; it cannot be said that they are interchangeable. It appears that the spit feature was modeled for protection of the wetland feature and erosion control of the upland, not for containment of the underlying sediment. We do not believe the spit should be used as a cap. We believe that contaminated sediment should be removed to the greatest extent possible. If the spit must be used as a cap, its containment potential should be analyzed.	The aquatic spit will be constructed so that sediment is covered similar to an engineered cap and similar to intertidal excavation where potential contaminated sediment would be covered with several feet of sediment. Furthermore, areas with contaminated sediment greater than 25 ppt would be located under spit core material (e.g. reclaimed quarry spall or other similar large rock) which would ensure adequate protection from exposure of potentially contaminated sediment and would also be biologically unavailable. Ecology concurs that natural spits are dynamic in nature, but this is clearly not a natural spit and is designed to be dynamic where allowable and static where needed for remediation success.
4) The design of a spit and/or cap in a high energy and biologically rich area needs to take into account multiple interacting factors, including tidal elevation, substrate composition, and the wind/ wave regime. These interacting factors will thus affect the biological assemblages therein. Conversations with several professionals in the area elicited some cautions that deserve attention. a. Wind/ wave models should be reviewed by a third party because they are complex. The complexity of these is underscored by the paper, "Measuring and Understanding Coastal Processes for Engineering Purposes" (Committee on Coastal Engineering Measurement Systems Marine	4) Initial analysis was reviewed by an independent geomorphologist who generally agreed with model outputs. Sea level rise was taken into account during the design phase, and the protective features will still guard against shoreline erosion well past 2100. Analysis of wind/wave revealed that as sea level rises, there is point at which the shoreline and spit become submerged[1] on average. Therefore, at that point erosional forces are much reduced.

[1] The subject site area was previously submerged before the Mill was built around 1900. The site was created by placement of wood waste fill on top of former shallow tidelands that slope very gradually beyond the MLLW line.

Comment	Ecology's Response
Board Commission on Engineering and Technical Systems, National Research Council, National Academy Press, 1989). b. Sea level rise should be taken into account and modeled through the year 2100, per standard protocol. (I did not see that the modeling accounted for sea level rise at all) 5) A cap in this area may be vulnerable to potential scour in and around the cap from wave action (similar to that seen around a bulkhead) or to recreational activity from beach-goers and clam-diggers. We have not seen any mention of how the integrity of the cap will be maintained. [Comment 4]	5) Details of cap performance criteria are being developed in a remediation performance plan. Cap performance must be maintained for the remediation action to be a success. Based on current wave analysis, as sea level rises, the proposed cap will be less susceptible to wave energy and scour; thus, the current design is interpreted as being conservative.

3. *Cleanup areas and dioxins cleanup/remediation levels*

Responses included in this category relate to comments about the dioxins sediment cleanup area and, dioxins levels required for cleanup.

Comment	Ecology's Response
3.1 The plan is linked to a cleanup criteria based on dioxin TEQ's. Are there any hot spots of other contaminants or of dioxin TEQ outside of the prescribed remediation area that will be left behind with such an approach? If so, the plan must address those hot spots using other cleanup criteria. [Comment 5]	Yes, this is correct. Remediation criteria were based on and driven by dioxin TEC (Total Equivalent Concentration). Based on several years of background sampling, there does not appear to be any additional hot spots near the Site that could be attributed to development and operation of the Custom Plywood Mill Site. We are currently remediating outside the property boundaries of the Custom Plywood Mill Site, where operational activities over the last 80 years (e.g., capping and dredging activities near existing jetty, capping north of the jetty) have contaminated the sediment with wood waste and dioxin/furans.
3.2 The scientific literature is full of studies and reports on PCBs, dioxins and a host of additional chemical compounds suspect of being harmful to biological systems, including human biological systems.	We are remediating marine sediment with intermediate levels of dioxins contamination, between 10 and 25 ppt, through enhanced natural recover by implementing a Thin Layer

Comment	Ecology's Response
Many studies and reports, funded by those not profiting from the manufacturing and sale of such compounds, are increasingly calling for a more cautionary regulatory approach for the use of these types of persistent chemical compounds that even in very small exposures are cause for concern. However, implementing a more cautionary approach has been problematic, largely due to the 1976 federal Toxic Substances Act. That Act presumes industrial chemicals are safe unless proven otherwise, in stark contrast with Europe where, beginning in 2006, industrial chemicals are presumed dangerous unless proven safe. Today, of the 84,000 industrial chemicals registered for use in the United States only about 200 have been evaluated for human safety by the Environmental Protection Agency. (September 6, 2012 article by Dashka Slater titled "How Dangerous is Your Couch?) Vast amounts of PCBs were used in the United States until proven harmful and banned in 1977. In 2012, biological systems of all kinds in our country continue to be impacted by this persistent chemical pollutant-experiment, even though it was banned 35 years ago! The same legacy is unfolding for dioxin, which is why this cleanup action needs to remove more dioxin-contaminated sediments than just those >25 ppt. [Comment 6]	Cap (TLC). Through the TLC pilot study, we are investigating the effectiveness of an amended cap approach in reducing the contamination threat of dioxin/furans on the Site. By the addition of activated carbon we will remove dioxin from the bioavailable pool to prevent its accumulation in organisms such as shellfish that extensively use the Site and ultimately humans who consume the shellfish. Should the TLC study show this amendment to be effective, the application of the TLC should be functionally as effective as dredging while greatly reducing the impact to existing productive eelgrass habitats.

4. *Cleanup construction cost issues*

Responses included in this category relate to comments about cost estimates for the alternatives.

Comment	Ecology's Response
4.1 I strongly support the work that Ecology is doing in Fidalgo Bay and hope the work will be fully funded to complete the cleanup. [Comment 3]	Ecology acknowledges and appreciates your feedback.
4.2 To save costs, the plan includes the use of quarry	Ecology concurs and will be implementing best management practices (BMPs) during

Comment	Ecology's Response
spall from temporary access roads and the crane pad as backfill in dreaded areas. This would only be appropriate if these areas have not been contaminated with oil leaked from construction equipment and from contaminated sediments left from construction equipment tires. [Comment 5]	construction to reduce or eliminate the potential contamination mentioned. Please see the CMMP for further discussion on BMPs. Reclaimed quarry spall will be inspected for effectiveness of these BMPs, and only clean reclaimed spalls will be used in remediation components

5. *Habitat improvement*

The response included in this category relates to comments about impacts on fish and wildlife habitat related to the site.

Comment	Ecology's Response
5.1 I have reviewed the Custom Plywood Phase II document made available at the Anacortes Public Library, and have the following page-specific comments: P 2.3: In the "Summary of existing conditions…" section, a statement is made that surf smelt spawn survival is "questionable" on the project site, with no documentation nor citation supporting such a contention. My observations of consistent heavy spawning usage of the project site annually for a number of years suggests that the site has high reproductive value for surf smelt. Granted, surf smelt spawn survival at the fixed sample site is reduced by the fact that overhanging shade from tree canopies 3 is totally absent at the site. Yet the spawning fish continue to use the site despite this. Ideally, the Phase II project plan should include the establishment of a shading marine riparian forest corridor just above the EHW line at all sites where the establishment of surf smelt spawning habitat is contemplated. Providing the spawning substrate zone with afternoon shade in summer would assuredly increase smelt egg survival. [Comment 2]	Ecology does not dispute the use of the Site for spawning surf smelt. But Ecology does question the viability of the eggs due to contamination, Site conditions, and lack of shading, which could synergistically decrease hatching success. We appreciate your bringing up this point and will revisit areas of design for forage fish spawning enhancement to determine if overhanging vegetation can be incorporated into the design. The habitat enhancement concepts have been very fluid since the original concepts were conceived. Thoughtful input such as this only helps to ensure these enhancements perform to the greatest degree possible.
5.2	See above answer for a detailed response.

Comment	Ecology's Response
For local examples of attempts to restore surf smelt spawning habitats on degraded shores, there are two examples in Fidalgo Bay. First, the SRSC/WDNR project on eastern Fidalgo Bay north of the trestle has been in place for two years and is performing well. Here a thick deposit of very suitable fine-grained material was positioned at the toe of armoring and has been used frequently and densely by the spawning surf smelt during both summers after placement. The Samish Nation's smelt habitat restoration project on the northwest shore of Weaverling Spit has, in my opinion, used material too coarse to be suitable in the absence of fine-grained material to fill the interstices between the medium gravel pebbles dominating the beach surface in the spawning zone. Their on-going second-phase project should be more effective. Their project also has the added feature of a sector of tree-shaded shoreline (about the last in Fidalgo Bay), which clearly demonstrates the value of shade for summer smelt spawn survival. [Comment 2]	
5.3 SEPA checklist: P 12-13: The project site is likely to be within an annual migratory pathway for spawning herring and surf smelt. P. 15-h: The project site's surf smelt and herring spawning areas should be considered "environmentally sensitive", given their no-net-loss regulatory protections. [Comment 2]	Ecology concurs that the project site is within an annual migratory pathway for surf smelt and herring as documented by Washington Department of Fish and Wildlife. The net result of the project will be more and improved spawning areas for forage fish after the completion of the Phase II interim action.
5.4 1) The jetty extension will cover some subtidal habitat. While it is important that this is large enough to perform its function, it should not be over-sized, covering more habitat area than is necessary. Several commenters on the RI also asked whether another fish passage could be constructed in the existing jetty closer to the nearshore. Ecology stated that design would be considered in the CAP phase. There was no apparent mention of jetty reconfiguration in the CAP. Please address.	1) The concept that another fish passage could be constructed in the existing jetty closer to the near-shore was considered in the 60% design phase, but would compromise the integrity of the existing jetty and was no longer considered in the design process. 2) Ecology concurs with your comment. In fact, Ecology has tried to minimize the size of the footprint of the spit as much as we could while maximizing the protectiveness of the cleanup through design of capping material at the core of the spit. The footprint of the spit

Comment	Ecology's Response
2) The size of the spit should also be minimized to provide shoreline protection while at the same time preserving as much habitat as possible. If the spit must also be a cap, then there are additional considerations. (see #4 Contamination) 3) Some eelgrass will be impacted as part of the cleanup, yet there appears to be no mention of mitigation for lost eelgrass. Comparing the spit drawings to Figure 6 of the RI, shows that there is eelgrass in the proposed spit location. As well, if removal of dioxin levels above 25 ppt are all removed, eelgrass will be impacted just south of the spit. Eelgrass must be remediated such that there is no net loss of eelgrass; this mitigation should take place prior to eelgrass destruction. 4) Some forage fish area will be impacted as part of cleanup. Surf smelt eggs have been found on the southern beach at the site. (Fig 15, RI). It is important that no net loss of surf smelt occur, as well. While there has been mention of placing a fish mix type of gravel at the shore-facing side 100112 RE Sources comments on Cleanup Action Plan for Custom Plywood, Anacortes, WA Page 3 of 3 of the jetty and spit, there is no assurance that this fish-mix is appropriately sized, nor whether it will stay and not be eroded. 5) Beach restoration is planned as part of the cleanup and habitat restoration. While beach habitat will be aesthetically pleasing, it's important that it functions as appropriate habitat, especially for forage fish. In comments on the RI, Coastal Geologic Services, mentioned that it might be necessary to use a combination of sills and beach nourishment in order to ensure that the correct size of sand and gravels for forage fish remain at the site. In the response to comments, Ecology said that this would be considered in the design phase. Was this considered and what were the thoughts on beach design and forage fish habitat? 6) In terms of the overall gains and losses of habitat	was reduced to the smallest size while still maintaining the purpose of the design which was for permanence of the cap. 3) Yes, Ecology concurs that there should be no net loss. The eelgrass noted in the spit location will be verified and quantified before construction begins. Any eelgrass impacted during Phase II construction will be mitigated as outlined in the CMMP[2] through advanced plantings which will also serve as a seed population for newly remediated areas. Remediation of eelgrass habitat in areas where dioxin is greater than 25 ppt has been deferred to Phase III in hopes of finding a viable alternative to dredging (e.g., amended cap) where loss of this habitat can be avoided. 4) Ecology is targeting areas along the south side of existing jetty and adjacent beach for shoreline softening with particle size consistent with forage fish use. This should result in a net increase in available spawning habitat. Performance criteria and spawning documentation are outlined in the CMMP as a part of JARPA permit application. 5) This was considered during the 60% design phase for remediation effort. Additional fine-scale wave modeling dictated that areas protected by jetty extension and the spit would support particle sizes consistent with forage fish spawning needs with minimal nourishment and replenishment. Further, the proposed softening along the existing jetty will receive enough wave energy to sort into sand and gravel lenses which more closely emulates natural forage fish spawning habitat. Particles (less than 2 inches) would be dynamically stable on the order of inches to feet. In order to meet the requirement of well-sorted and low organics, the nourished beaches along south side of jetty and adjacent beach were targeted specifically for forage

[2] Final CMMP will be posted in the Ecology's site link: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=4533

Comment	Ecology's Response
features, there does not appear to be an overall assessment. There should be an accounting that shows how many acres of intertidal, subtidal, eelgrass, and forage fish spawning area are lost and gained. In this way, the reader can assess whether these gains and losses are beneficial from the perspective of habitat type. [Comment 4]	fish spawning enhancement. This results in a net increase of viable forage fish spawning habitat after Phase II is completed. 6) This will be addressed through monitoring for habitat performance enhancement as outlined in the CMMP. The as-built report and each subsequent mitigation performance report will provide the requested accounting and ensure no net loss of habitat, and more likely a gain of habitat.
5.5 The plan identifies several areas, which when completed, are intended to provide habitat for forage fish spawning including: parts of the existing jetty, areas on the jetty extension, shoreward face of the protective spit and areas of the main shoreline. This is especially important given that surf smelt are currently using the shoreline from just south of the site (down through the Fidalgo Bay Resort) based on monitoring I was involved with this summer. The size of gravel and percentage mix with sand, along with location placement, is very important in determining whether the resulting beach will be suitable for forage fish spawning. The plan describes the substrate to be used variously as habitat friendly or as sandy substrate or as graded sand and gravel 2-3" and smaller. They also describe a fish mix to be used. The plan should follow strict gravel/sand size and placement recommendations from experts in the field of forage fish habitat. [Comment 5]	Ecology concurs. A possible fish mix gradation is outlined in the Technical Memorandum by Coast and Harbor Engineering available in Appendix D of Phase II CAP/EDR. Ecology anticipates engaging several forage fish and geo-morphological experts in discussions about appropriate grain size before a final gradation is settled upon. Once a gradation is agreed upon, strict adherence to the gradation through spot sieve sampling will be required of the contractor that sources the material.
5.6 The surf smelt spawn data for this site has been available to the public since 2007 within the WDFW "Salmonscape" database (accessible through the WDFW web-site) within the "Intertidal forage fish spawning habitat" menu. To summarize very briefly, prior to the 1991 oil spill, The Custom Plywood site had not be documented as smelt spawning habitat for lack of a prior comprehensive sampling program. At the inception of our monthly sampling program, we were informed by local	Ecology concurs, but questions the viability of eggs due to the degradation of near-shore habitat from wood waste, construction debris, and in particular, contamination. Our overall goal is to increase forage fish spawning success through increased available area and increased quality of spawning habitat. Please see the Conservation Measures and Monitoring Plan (CMMP) for performance goals and monitoring criteria submitted to US Army Corps as a JARPA.

Comment	Ecology's Response
Anacortes residents that the local surf smelt not only spawned in fall-winter as historical records showed, but also in great densities around the Custom Plywood Mill and other sites during the summer months, a fact never before brought to the attention of resource agencies. This was soon confirmed in the spring of 1993. Over our several years of sampling, the Custom Plywood site was indeed found to be heavily-used by spawning smelt in the summer months. Relatively few eggs were then found through the fall and winter months. During the course of sampling, I would occasionally search north from the fixed site, and often found deposits of surf smelt eggs at other pockets of fine-grained upper intertidal beach within the project site. I think it likely that where-ever fine-grained beach at or near the high tide line occurs 2 amidst the industrial debris on the Custom Plywood Mill site, it is likely used by spawning surf smelt, especially during the summer months. [Comment 2]	
5.7 While the Custom Plywood Phase II plan may outwardly appear to accommodate significant forage fish spawning habitat considerations, I am concerned that these plans are mere window-dressing, and will ultimately be given little attention in the final product. My fears of a possible reduction of local forage fish spawning habitat from this project arise from the behavior of both local government, WDOE, and the project consultant during the course of the supposed "shoreline habitat restoration" project at Seafarer's Park, further north on the eastern Anacortes waterfront, over the past several years. In that instance, the conservation of existing well-documented surf smelt spawning habitat, monitored with the same intensity during the same period as the Custom Plywood site, initially a feature of the restoration plan, has instead resulted in the destruction of several hundred feet of surf smelt spawning habitat. After four consecutive summer spawning seasons, there has still been no visible	Through the MTCA process we are required to meet the substantive requirements of state and federal regulations concerning no net loss. Please see the Conservation Measures and Monitoring Plan (CMMP) for overall habitat enhancement goals and performance criteria. Forage fish spawning habitat has been a consideration from the beginning of remediation design. Rest assured that a large amount of effort was invested in remediating/restoring what was likely a historically important site for forage fish spawning in Fidalgo Bay. In addition to this, it is the intent of Ecology to learn from successive remediation efforts and make each one better than the last project.

Comment	Ecology's Response
attempt to restore the remaining impacted beaches back to a suitable grain-size from the cobble layer that now dominates the typical spawning zone, or to mitigate for the southern sector of spawning habitat that was utterly destroyed during the course of hard-armoring in the pursuit of other project objectives. Even more disturbing, these habitat-maintenance shortcomings at Seafarer's Park have been brought to the attention of WDOE staff and the consultants several times over the past few years, and still nothing has been done. As of this writing, the Seafarer's site has been degraded for four consecutive summer spawning seasons. Given the short-lived nature of surf smelt , with the population dominated by 2-year-olds and few if any fish older than 4 years, it is now likely that there are no surf smelt left in the local ecosystem that were hatched at Seafarer's Park. If smelt home back to their beaches of hatching, it may well be that the genetic diversity of Fidalgo smelt has been reduced thereby. I don't wish to see another reach of surf smelt spawning habitat in Fidalgo Bay suffer the same fate. [Comment 2]	
5.8 Regarding the subject of surf smelt spawning ecology, either in Fidalgo Bay or in Puget Sound in general, there is nothing in the Phase II document that indicates that anyone did a proper review of the species' habitat needs, even though published reports and a great deal of gray literature on the subject has been available for many years. [Comment 2]	There is no dispute against the use of the Site as spawning habitat for surf smelt. The Conservation Measures and Monitoring Plan (CMMP) includes a more detailed discussion on spawning habitat needs.
5.9 P. 17, point 12: The southern end of the project site is used by recreational fishermen to dip-net spawning surf smelt for sport harvest during summer high tides. It is likely that if additional spawning sites are established by the project's actions, the public will seek-out those additional sites along the project's shoreline in which to harvest smelt. The construction plan indicates that their most popular spawning/fishing site at the	You are correct. This phase of work will include developing additional habitat opportunities for forage fish. With this increase of viable spawning habitat, there will be more areas along the Site for recreational fishing. The southern portion of the Site will include soft armoring as part of the bank stabilization, which still allows for recreational dip-net fishing at that portion of the site.

Comment	Ecology's Response
southern end of the project will be destroyed by new armoring. Figure 2: Project resource maps should have depicted the extent of both herring spawning habitat, and the extents of documented and potential surf smelt spawning habitats in and around the site in its existing condition. I consider that the treatment of forage fish spawning habitats and their conservation measures in the Phase II document to be quite superficial, given the large body of information available for the forage fishes and the shorelines of Fidalgo Bay. Given that WDFW habitat managers had access to this information during permitting, I cannot account for the lack of detail. During the course of the last 2-3 years, the information included in this comment letter has been summarized verbally to project sponsors on a number of occasions. In fact, HDR staff suggested that I be included in agency discussions of Phase II, given my areas of expertise, but no formal invitation to do so was ever forwarded to me. [Comment 2]	Forage fish resources have been taken into account since the beginning of this project. But Ecology concurs that this CMMP did not completely address all aspects of existing forage fish resource protection. Specific to surf smelt, Ecology will survey for forage fish spawning activity prior to any in-water work construction. Should no spawning activity be detected, in-water work will be allowed to commence for one or more weeks as allowed by the Corps' permit condition. Should more time be needed, subsequent surveys will need to be performed. If necessary, Ecology will investigate the need for additional expertise on this matter during the design phase leading to the development of bid documents.
5.10 Similarly, no review whatever is present in the Phase II document regarding the wealth of available information on herring spawning activity on and near the project site, arising from WDF/ WDFW herring spawn surveys undertaken annually in Fidalgo Bay since 1977. The site's subtidal waters appear to lie partly within documented herring spawning habitat. Within Fidalgo Bay, spawning herring would use not only the native eelgrass, *Zostera marina* , but also the sugar kelp, *Laminaria (= Saccharina)*, the sea lettuce, *Ulva,* and the red-alga *Gracilariopsis.* It is likely that herring spawn deposition might occur anywhere on the project site where these plants might occur, including the area proposed for dredging. Regarding unavoidable destruction of habitat during the course of dioxin remediation, there does not seen to be any indication in the Phase II document of a marine vegetation restoration plan where appropriate following dredging. [Comment	During the design process, surveys from WDFW were used to develop remediation alternatives and habitat opportunities for forage fish. Herring use seems limited to eelgrass habitat, while surf smelt and possibly sand lance utilize mid- to upper-beach elevations. Great effort was taken to design remediation alternatives that would not impact eelgrass habitat, including development of a TLC pilot study to further refine capping within the eelgrass habitat bed. Nearshore shallow habitat is so highly degraded that use by forage fish (e.g., surf smelt) would result in reduced egg fitness due to contamination, high organics, hydrogen sulfide, anoxic bacteria, and general anoxic conditions at the intertidal beach surface. Remediation and habitat enhancements proposed will greatly increase the available spawning area and spawning area quality. Please refer to the Conservation Measures and

Comment	Ecology's Response
2]	Monitoring Plan (CMMP) as a supporting document for JARPA submittal for relevant performance criteria and monitoring schedule.

6. *Human health risk due to fish consumption*

Responses included in this category relate to comments about the risk of eating fish harvested near the site.

Comment	Ecology's Response
6.1 The shoreline just south of the CPM site is heavily used on weekends by Asian families fishing or crabbing (I'm not sure exactly what they are catching). I've seen as many of 20+ individuals there with nets. It seems that harvesting restrictions need to be considered and appropriate signage on the shoreline about risks to the public from fish and shellfish harvest in the area during or after the cleanup. [Comment 3]	During phase II in-water cleanup construction (remediation), the Skagit County Public Health Department and Samish Tribe will be alerted and consulted regarding the potential need (time and area) for closure of nearby shellfish beds. Public access to the Site during construction activities will be limited for safety reasons. After the remediation has been completed, shellfish and fish resources on or near the Site will be improved significantly.
6.2 The proposal is to leave dioxin contamination below 10 ppt TEQ in place. This target cleanup criterion does not appear to be linked to any federal or state sediment cleanup standards and is not supported by a human health and wildlife risk assessment. Given that dioxins include one of the most potent human carcinogens, 2,3,7,8-Tetrachlorodibenzo-p-dioxin, that is highly bioaccumulative through the aquatic food chain, the proposed plan to leave significant dioxin contamination in place must include an assessment of the risk remaining for the Department of Ecology and the public to fully understand what they are accepting. A recent Washington Department of Health study	These risks are identified in the "Human Health Risk Assessment Addendum for the Custom Plywood Interim Action Work Plan[3]." As described in the Human Health Risk Assessment Addendum, the average existing dioxin concentration of 24.5 pg/g TEC is expected to decrease and approach background levels in Fidalgo Bay as a result of the remediation activities. Excess lifetime cancer risks at the Site are also predicted to be reduced by 93 percent at nearshore – within the interim action area. This represents a significant reduction in exposure to dioxin contamination. Further remediation of dioxin concentrations to less than 10 ppt would not significantly increase human health protection

[3] Department of Ecology, July 2012; https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=4533

Comment	Ecology's Response
found levels of dioxins and other contaminates present in commonly ingested shellfish from Fidalgo Bay above levels of concern and concluded "that eating seafood at tribal scenario rates is expected to harm children and adults' health. The Swinomish, Samish, Lummi and the Upper Skagit are tribes or nations that fish in this area or it is in their usual and accustomed fishing rights areas. If any of the tribes or nations are using Fidalgo Bay for harvesting and eating seafood at tribal scenario rates, this would represent a "public health hazard"" (*Health Consultation, Fidalgo Bay Anacortes. Skagit County, Washington*, February 25, 2010.) The cleanup plan for the Custom Plywood site needs to identify those current risks and demonstrate a significant reduction. [Comment 5]	in the nearshore area, but would greatly impact the ecology and productiveness of Fidalgo Bay.
6.3 A human health assessment was completed in July 2012, using corrected averaging times and updated information. In addition, risk reduction values were generated for the proposed cleanup. This additional information represents a great improvement to the previous body of work and we applaud you for conducting this additional bit of research in order to support the remediation proposal. [Comment 4]	Ecology acknowledges and appreciates your feedback.
6.4 My main comment is that preferred Alternative 3 falls far short in cleaning up dioxins and wood waste contamination of aquatic sediments, noting that the two are typically linked: "higher concentrations of dioxin have been found where the wood waste is deeper" (Draft Phase II CAP/EDR page 6-3 – Subtidal Dredging). Given the serious risk from dioxin to the environment and human health, and given this unique opportunity with the interim action to begin cleanup of the Plywood Mill site, leaving in place dioxin-contaminated aquatic sediment as high as 25 ppt is not acceptable. Cost wise, it makes sense now, with the logistical steps in place and equipment onsite, to remove more of this contamination. Alternative 4's treatment of	Dioxin-contaminated sediment greater than 25 ppt is limited to the area under the spit core material (e.g., reclaimed quarry spall or other similar large rock). This spit to be constructed will ensure adequate protection from exposure of potentially contaminated sediment. Please see the Response to Comment 6.2, above, for further discussion related to human health and the "Human Health Risk Addendum for the Custom Plywood Interim Action Work Plan."

Comment	Ecology's Response
dioxin and wood waste is much preferred. Even then, dioxin cleanup >10 ppt falls far short of the 1.4 ppt dioxin background level in Fidalgo Bay. [Comment 6]	

7. *General support for the project cleanup and the Puget Sound Initiative*

Responses to these comments relate to public support for the Custom Plywood Site cleanup or Ecology's Puget Sound Initiatives in general.

Comment	Ecology's response
7. 1 I don't have specific comments to offer on Phase II of the cleanup at the Custom Plywood Mill site in Anacortes, but I do want express my interest in and support for the work that Washington Department of Ecology is doing to restore the shore and near-shore of Fidalgo Bay. These are important projects contributing to the preservation and restoration of Puget Sound. I appreciate the work that you and the rest of the DOE staff are doing on behalf of the citizens of Washington. [Comment 10]	Ecology acknowledges and appreciates your supporting comment.
7.2 I fully support this project and am glad that this will be done. [Comment 7]	Ecology acknowledges and appreciates your supporting comment.
7.3 Thanks to you and your department for all your efforts to clean up the site of the old Custom Plywood plant. Cleaning up the tidelands is a very complex undertaking and I am delighted that the plan is to begin by July. Many people in town have been asking me, literally for years, when we are going to get this area cleaned up. Our city would not be able to tackle the clean up, nor could we do much to push the owners, so we are grateful for the help Ecology is bringing. [Comment 8]	Comment noted and appreciated.
7.4 Just a note of thanks to staff of the Washington Department of Ecology for your efforts in the	Comment noted and appreciated.

Comment	Ecology's response
project to clean pollutants and toxicants from the shoreline and sediments of Fidalgo Bay. The natural resources, especially those in the marine environment are so precious. Of course when they become befouled from human activities, it is always a difficult task to return them to their original state in so far as it is possible. We commend you and others who work with you as you strive to clean up Fidalgo Bay. [Comment 9]	
7.5 When completed, the Plywood Mill cleanup can offer significant protection from the industrial chemical-pollution of the past to those organisms who live in the Bay and those who consume its bounty, especially Native Americans in the area who do, non-commercially, harvest shellfish from the Bay. [Comment 6]	Comment noted and appreciated.
7.6 The area around the old Scott mill now supports all kinds of life that wasn't there before the clean-up. We look forward to improved habitat in the bay for crabs and forage fish as well as for the fisherfolk of town. [Comment 8]	Ecology acknowledges and appreciates your supporting comment.
7.7 Nearly 40 years ago while in college pursuing a BS Degree in Environmental Science I spent time doing research on PCBs and wrote a senior paper on how life, including human life, was basically being used as a grand biological experiment. Our bodies, which did not evolve with biological mechanisms to cope with harmful chemical compounds such as PCBs, were being suddenly exposed to their impacts, including increasing amounts due to bioaccumulation in fatty tissues. To me at the time, and the main point of my paper was that, this seemed like a very risky experiment. Today, that risk has manifested into serious health concerns, including endocrine disruption, a term I was unfamiliar with at that time. I provide this background because today I see the same serious risk from dioxins; hence my comment is to be more diligent than Alternative 3. This cleanup effort must aim higher rather than lower to rid the Plywood Mill	Comment noted. As explained in Section 8.6.2 of Feasibility Study Report (2011), per WAC 173-340-360(3)(e), alternatives A-1, A-3, and A-4 provide permanent and effective measures to maximize wood waste and dioxin removal from the marine environment through deeper excavation and dredging. Of these alternatives, Ecology concludes that alternative A-3 represents the best cost-benefit ratio after conducting an extensive Disproportionate Cost Analysis.

Comment	Ecology's response
site of these dangerous substances as much as we possibly can. [comment 6]	
7.8 A landmark publication in 1996, Our Stolen Future, by Theo Colborn, Dianne Dumansoki and John Peterson Meyers, explored the scientific discovery of endocrine disruption. This is the process whereby hormone disrupting chemicals such as PCBs and dioxins "interfere with the natural messages and alter the course of development, with potential effects on virtually all aspects of bodily function". Among the books findings, "…the weight of the evidence says we have a problem. Human impacts beyond isolated cases are already demonstrable. They involve impairments to reproduction, alterations in behavior, diminishment of intellectual capacity, and erosion in the ability to resist disease." Our Stolen Future sparked a flurry of studies and research that continue to this day. Increasingly the results are alarming for the well being of the human biological system, especially for our children and future generations. A few researchers and their findings include: 1. Solomon, Gina M., and Schettler, Ted. 2000. Environment and Health: 6. Endocrine Disruption and Potential Human Health Implications. Canadian Medical Association Journal 163 (11). Found that low level exposures to endocrine-disrupting chemicals such as DDT, PCB and dioxins are ubiquitous in today's environment. Given this nature of exposure combined with the nontrivial potential health effects justifies preventive action to reduce human exposures to endocrine disruptors. 2. Warner, M, B Eskenazi, P Mocarelli, PM Gerthhoux, S Samuels and L Needham. 2002. Serum Dioxin Concentrations and Breast Cancer Risk in the Seveso Women's Health Study. Environmental Health Perspectives 110: 625-628. Found that immune system impacts of dioxin linger for decades. 3. Vreugdenhil, HJI. FME Slijper, PGH Mulder, and N Weisglas-Kuperus. 2002. Effects of Prenatal Exposure to PCBs and Dioxins on Play Behavior in Dutch Children at School Age. Environmental	Comment noted.

Comment	Ecology's response
Health Perspectives 110: A593-A598. Found that Dioxins and PCBs alter sex-specific behavior in children. 4. Rier, S and WG Foster. 2002. Environmental Dioxins and Endometriosis. Toxicological Sciences 70: 161-170. Found strong links in animal studies of dioxin's ability to disrupt normal immune and endocrine system function, resulting in endometriosis (the presence of uterine lining in other pelvic organs, especially the ovaries, characterized by cyst formation, adhesions, and menstrual pains). 5. Diamanti-Kandarakis E et al. 2009. Endocrine-Disrupting Chemicals: An Endocrine Society Scientific Statement. Endocrine Reviews 30(4): 293-342. Key points include: "The evidence for adverse reproductive outcomes (infertility, cancers, malformations) from exposure to endocrine disrupting chemicals is strong, and there is mounting evidence for effects on other endocrine systems, including thyroid, neuroendocrine, obesity and metabolism, and insulin and glucose homeostasis." "The Precautionary Principle is key to enhancing endocrine and reproductive health, and should be used to inform decisions about exposure to, and risk from, potential endocrine disruptors." [Comment 6]	

8. *Mitigation*

Responses included in this category relate to comments about mitigation for impacts on natural resources.

Comment	**Ecology's Response**
8.1 In Washington State, all documented forage fish spawning sites are afforded "no-net-loss" regulatory protections, from inclusions in the specific language of the GMA, SMA, Hydraulic Code Rules, and federal rules protecting "Essential Fish Habitat" for ESA-listed salmonids. Zeal to clean up dioxins should not absolve project sponsors from either conserving existing forage fish habitats in-place, or	This remediation alternative selected provides significant habitat enhancements that will improve existing spawning habitat quality. This alternative will establish additional spawning areas so that there will be a significant net increase of available spawning habitat. A concerted effort will be made to quantify the degree of use of the remediated and nourished shoreline by

Comment	Ecology's Response
mitigating for their unavoidable destruction, particularly if Fidalgo Bay is supposed to be something of a "showpiece" for environmental cleanup in Puget Sound. So far, I'm not impressed with how forage fish spawning habitats are being treated. [Comment 2]	forage fish after in-water cleanup construction along with habitat restorations are completed.
8.2 P. 5-10: It appears that the prospective 2013 construction schedule of Phase II is going to coincide with most of the summer surf smelt spawning season on and around the Custom Plywood site, which lasts from April through September. This is not acknowledged in the Phase II document, nor are any mitigation measures planned with which to ameliorate impacts to surf smelt spawning activity or spawn survival. [Comment 2]	In the Conservation Measures and Monitoring Plan (CMMP) there is discussion of the construction work window as it relates to forage fish spawning activities along the project area. But Ecology concurs that this CMMP did not completely address all aspects of existing forage fish resource protection. Specific to surf smelt, Ecology will survey for forage fish spawning activity prior to any in-water work. Should no spawning activity be detected, in-water work will be allowed to commence for one or more weeks as allowed under the Corps' permit conditions. Should more time be needed, subsequent surveys will need to be performed.
8.3 If the plan deems a larger particle size is necessary due to wave action and bank stabilization needs, then they should not falsely identify it as forage fish spawning habitat. If suitable forage fish habitat cannot be re-created in these areas, mitigation for loss to these beaches is necessary. [Comment 5]	Ecology concurs with comment. A possible fish mix gradation is outlined in the Technical Memorandum by Coast and Harbor Engineering available in Appendix D of Phase II CAP/EDR. Ecology has consulted with independent biologists, and this gradation seems conducive for forage fish spawning activity. We will continue to consult other forage fish biologists in order to fine-tune the gradation as we approach the final level of design. This remediation alternative was designed to result in a net increase of both spawning habitat area and the quality of that area.
8.4 Mitigation for habitat loss for burrowing organisms that would naturally be present in a clean mud substrate that presumably predated the contamination in some areas of the site is not addressed. The planned back fill capping materials	Yes. In fact, this temporary loss of habitat has been taken into account, but it is limited to the area within the footprint of the spit. Use of backfill material may be employed within the nearshore excavation, but will be well below the biologically active zone of

Comment	Ecology's Response
of quarry spall will not be amenable to burrowing aquatic organisms. Mitigation of this loss of habitat to important Fidalgo species should be included in the remediation plan. [Comment 5]	burrowers for intertidal species (approximately 30 cm).

9. *Monitoring during and after the Phase II in-water cleanup construction*

Responses included in this category relate to comments about monitoring performance of the Phase II in-water cleanup construction over time.

Comment	Ecology's Response
9.1 P 4.8: Here and elsewhere in the Phase II document, there is reference to the usage of "fish-friendly substrates", "fish-mixes" , etc., to be used for the establishment of forage fish spawning habitats. Given the Seafarer's Park experience, I certainly hope more care is taken in the selection of materials to be used if there is an intent to establish surf smelt spawning habitats. The character of a typical Puget Sound surf smelt spawn substrate is well-known, with roughly 70% of the surface beach material being between 1 and 8 millimeters in diameter. I suspect that raw material dominated by medium gravel or larger will become, through wave sorting, armored at the surface by that size of material, precluding spawning usage. Adaptive management and monitoring measures should be in-place to replace poorly performing material and method-ologies if such a situation is found. [Comment 2]	Ecology concurs. The selection of surf smelt spawning substrate has been designed to meet the habitat requirements. Permitting Agencies including USFW, WDFW, and NOAA/NMFF are reviewing the proposed substrates under the JARPA submittal. A possible substrate fish mix is outlined in the Technical Memorandum by Coast and Harbor Engineering provided in Appendix D of CAP/EDR for Phase II Interim Action.
9.2 P. 7-2: Within the "confirmational monitoring" section, there is no mention of any program to monitor project beaches post-construction to determine the degree to which the "new" beaches are regrading into habitat being used by spawning surf smelt as planned. I should think this would be a vital piece of information, if the project professes to have forage fish habitat conservation goals. [Comment 2]	The Conservation Measures and Monitoring Plan (CMMP) had been submitted to U.S. Army Corps of Engineers along with the JARPA. This report outlines performance criteria and monitoring schedule for the site. These performance criteria must be met and maintained in order for the remediation actions to be deemed successful for habitat enhancement under the Corps' permit conditions.

10. *Schedule, implementation, and process issues*

Responses included in this category relate to comments about the cleanup process and opportunities to be involved.

Comment	Ecology's Response
10.1 I understand the next stage of the cleanup will consist of removal of old creosote dock pilings. I am curious if this portion of work will go out to bid and how? If it doesn't go out to bid, will it fall to an existing Ecology contract? [Comment 1]	This portion of field construction work will go out to bid for the public works, similar to Phase-I upland remediation work completed in the summer of 2011. Ecology is currently developing bid specifications and soliciting bid packages through an RFP March through April of 2013.
10.2 1) The performance criteria and corrective actions for contamination removal and habitat replacement (eelgrass, forage fish, other) should be developed and available for public review and input. Performance criteria developed for contaminants should be that dioxin levels should be at or below background levels in all intertidal and remediated areas, and that all areas should pass bioassay tests. Performance criteria for forage fish spawning beaches and eelgrass should replace the habitat at a 1:1 ratio, without any time lag, per the State of Washington no net loss policy. In the event of a time lag between destruction and replacement, the replacement ratio should be commensurately increased. 2) The timing of the project phasing is concerning. According to Figure 5-1, Phase III includes dredging of subtidal area containing dioxin > 25 ppt, within an eelgrass bed and adjacent to the newly installed spit. The phase III cleanup of the subtidal area would generate wave energy in the subtidal area (from the machinery used for cleanup/dredging) that has not been accounted for in this cleanup plan. Thus, the Phase III cleanup could, theoretically, cause harm to the newly installed spit, especially if the sediment/materials in the spit have not settled and are prone to movement in the waves. [Comment 4]	Response to each comment is below: 1) The Conservation Measures and Monitoring Plan (CMMP) provides performance criteria that ensures adherence to the no-net-loss-of-habitat requirement of Washington State. More habitats are being enhanced than are currently available on the Site and therefore should more than make up for loss of habitat during the interim function. The proposed remediation alternative will result in a net increase of spawning habitat. Ecology plans to avoid all dredging of eelgrass habitat through the use of amended cap material (Thin-Layer Capping technology) in Phase III. The effectiveness of this approach will be determined and quantified in the upcoming TLC pilot study that is scheduled to begin in May 2013. 2) Construction methods used in Phase III (i.e., three-point anchoring, use of shallow draft barges) would not significantly affect newly installed remediation components which include the newly installed spit.

Comment	Ecology's Response
10.3 The plan title identifies the proposed activities as an interim action. It is unclear what is meant by interim. If this is a short-term action plan that will be subsequently addressed with a final remedial action, the requirements for such a final action plan and a timeline should be required. Without such assurances, the proposed plan must be reviewed with the expectation that these are likely to be the final remedial actions taken at the site. If interim simply refers to the fact that additional sub-tidal work is planned, then the plan should be identified as a final action for the intertidal areas. [Comment 5]	Comment noted. It has been the goal of the proposed Phase II Interim Action to maximize overall Site cleanup to protect human health and the environment while providing as much shoreline stability and habitat improvement as possible within the given Site constraints. This is an interim action that will substantially reduce the risk of dioxins exposure, but it is not a final cleanup action. The proposed interim action for in-water cleanup focuses on substantially eliminating, reducing, and/or controlling risks to the environment to the extent feasible and practical, but is not intended to actively remediate the entire Site to natural background dioxin levels under the proposed action. The final cleanup actions have yet to be determined at the Site and will depend on new information generated during the Interim Action. The PLP is ultimately responsible for completing the overall cleanup of the Custom Plywood Mill Site; however, the Puget Sound Initiative has provided Ecology with the opportunity to conduct the Interim Action based on the constraints identified in the Feasibility Study effort. Ecology believes that the interim action work planned will accomplish a significant amount of cleanup, and continued monitoring of the Site will ensure that any remaining contamination will be identified and addressed prior to a final cleanup being completed. Ecology will include and use all of the information and data gathered during the interim action in the development of the Draft Cleanup Action Plan for the final cleanup at the Site.

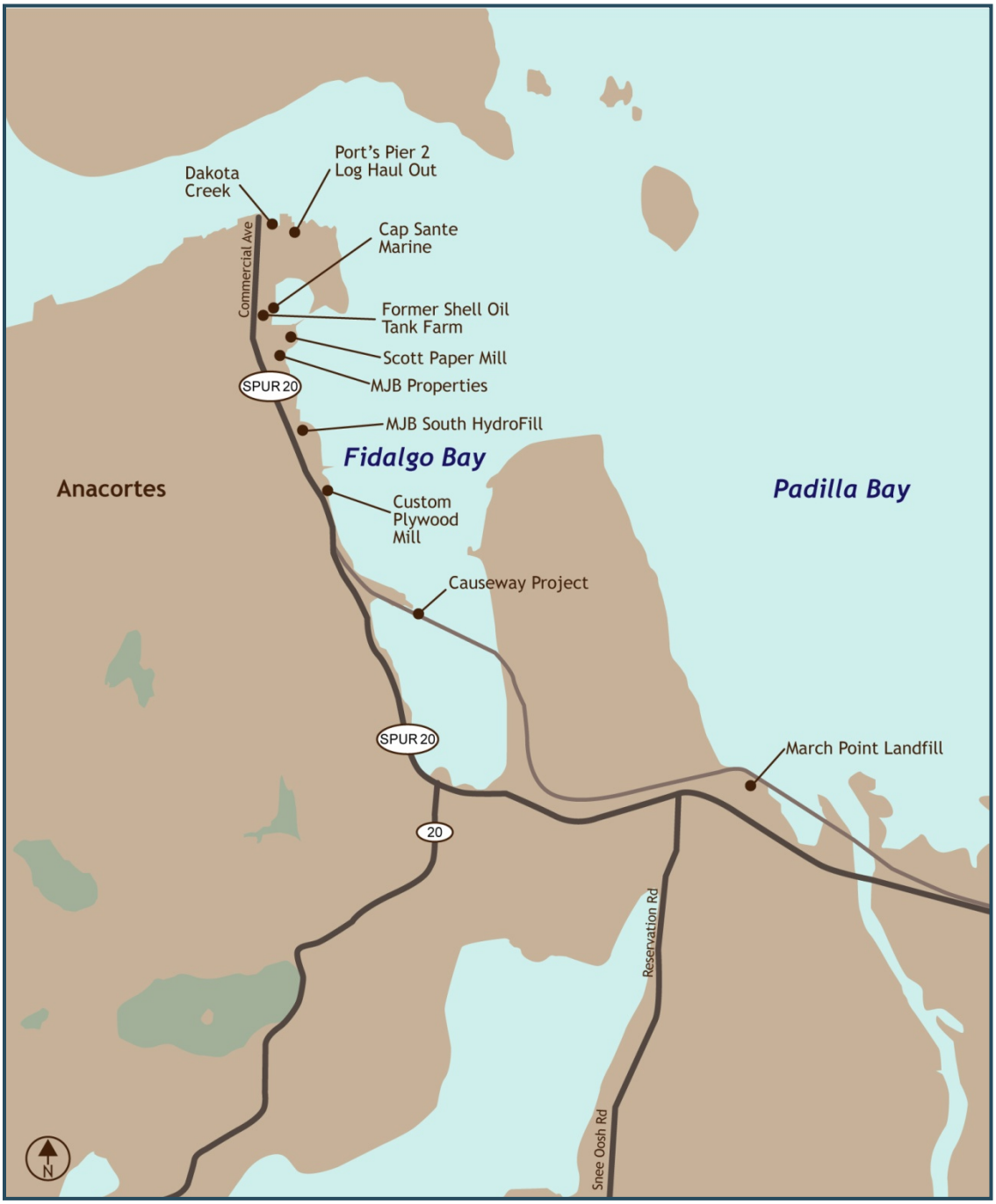


Figure 1 Fidalgo and Padilla baywide area cleanup sites under the Puget Sound Initiative.

Ecology Contact Information

For more information on the Custom Plywood Mill Site, contact:

Hun Seak Park - Site Manager
WA Department of Ecology
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600
Phone: (360) 407-7189
E-mail: hpar461@ecy.wa.gov

Sandra Caldwell - Baywide Project Coordinator
WA Department of Ecology
Toxics Cleanup Program
PO Box 47600
Olympia, WA 98504-7600
Phone: (360) 407-7209
E-mail: saca461@ecy.wa.gov

To review documents:

Anacortes Public Library
1220 10th Street
Anacortes, WA 98221
Phone: (360) 293-1910
Hours: Mon-Thurs 11am-8 pm
Fri. 11am-5pm, Sat-Sun noon-5pm

WA Department of Ecology Headquarters
300 Desmond Drive SE
Lacey, WA 98503
By appointment only:
Contact Carol Dorn, Carol.Dorn@ecy.wa.gov
or (360) 407-7224

Ecology's Website

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