William Derry

Comments to Ecology on The Draft Feasibility Study
The Public Review Draft Final Feasibility Study Report Addendum and the Disproportionate Cost Analysis does not comply with WAC 173.340 or Ecology guidance. It doesn't address future land uses, climate change, sea level rise, tribal or public concerns as required by WAC 173-340 and uses inappropriate evaluation of cost.
Consideration of Future Land Use
Consideration of future land use is required as stated in the following sections of WAC 173-340.
WAC 173-340-200 states:
""permanent solution" or "permanent cleanup action" means a clean-up action in which cleanup standards of Part 7 of this chapter can be met without further action being required at the site being cleaned up...""
Part 7, WAC 173-340-700(5) states:
"(5) Methods for setting cleanup levels. The first step in setting cleanup levels is to identify the nature of the contamination, the potentially contaminated media, the current and potential pathways of exposure, the current and potential receptors, and the current and potential land and resource uses."
WAC 173-340-360 (3) states:
(a) (iv) Prevent or minimize present and future releases and migration of hazardous substances in the environment..."
(vii) Not rely primarily on institutional controls and monitoring at a site, or portion thereof, if it is technically possible to implement a more permanent cleanup action;"
"(x) Use permanent solutions to the maximum extent practicable..."

WAC 173-340-708 states:
(3) "Reasonable maximum exposure.
(a) Cleanup levels and remediation levels shall be based on estimates of current and future resource uses and reasonable maximum exposures expected to occur under both current and potential future site use conditions, as specified further in this chapter.
(b) The reasonable maximum exposure is defined as the highest exposure that is reasonable expected to occur at a site under current and potential future site use."

The NOAA Coastal Resiliency grant for estuary restoration study, State Legislature (WSDOT budget note), WSDOT (budget note and MOU with Edmonds) and the City of Edmonds (resolution, budget, NOAA grant study, WSDOT MOU), the Port of Edmonds (letter of support for NOAA grant) and Tulalip Tribes (letter of support) have acknowledged that a potential future use of the site is for restoration of the estuary and marsh requiring excavation of the Unocal fill and contamination. Washington State RCO approved a grant to the City of Edmonds to build an estuary connection through Marina Beach Park to the marsh. Previous marsh studies reviewed by Chevron have shown a channel through the Unocal site to recreate an estuary connection between Puget Sound and the Edmonds Marsh.
Yet, the Chevron report makes no mention of the potential future use of the site as a return to an estuary in the text for the alternatives, the Disproportionate Cost Analysis or the Terrestrial Ecological Evaluation (TEE). The proposed Alternative 6 would transfer the cost of clean-up from Chevron to the future owner and would not meet the requirements of WAC 173-340. Alternative 4

is the clear choice when considering future land and resource uses, climate change, sea level rise or public concerns as required by WAC 173-340.

Disproportionate Cost Analysis (DCA)

The DCA that led to selection of Alternative 6 is not adequate and must be revised.

When considering future land and resource uses Alternative 6 is not protective, permanent or effective in the long-term. Therefore, the benefit scores for Alternative 6 should be adjusted to reflect this. The weightings for the criteria should also be adjusted to emphasize protectiveness and permanence over administrative concerns.

When considering future land and resource uses the DCA would be revised as shown in the revised Table 6-1 below. This changes the DCA and would lead to the selection of Alternative 4 as the preferred alternative and AKART.

It is also clear that public concerns or Tribal concerns were not addressed as required by WAC 340—380(5)(d)(ii) and WAC 340-620. There were roughly 100 people at the Ecology public meeting in Edmonds. All members of the public were in attendance to support restoration of the site as an estuary. The only mention of public concerns is an outdated reference to truck traffic and dust. Further, public concerns should be listed as a separate criterion in accordance with the WAC and Ecology guidance, not hidden in other criteria.

WAC 173.340 states that cost should be "proportionate" to environmental protections. Ecology interprets this as equal, but Websters Dictionary defines proportion as "The relationship of a part to a whole or to another part as to magnitude, quantity, or degree: ratio." Ecology is not correct in determining that cost is an equal consideration to the sum of all other criteria. Cost should be a ratio to other factors. If cost is proportionate to environmental protection, a weighting of 20% or 30% would be a more appropriate interpretation of the WAC. As interpreted by Ecology nearly all clean-up plans approve simply covering up the contamination and leaving it in place. This is not the intent of the MTCA

Updated Ecology Guidance

It is clear that the Draft Feasibility used outdated WAC and Ecology Guidance. The new Ecology guidance states:

"These criteria should be used for a detailed evaluation of the alternatives:

• Protectiveness. The degree to which risks to human health and the environment are reduced by the alternatives would generally be evaluated in the same manner as usual. However, assessing risk reduction should be done in the context of the potential for future releases from the cleanup site, or for climate change impacts (e.g., sea level rise, more severe storms, or severe flooding) to compromise the success and ultimate protectiveness of the remedy.

• Permanence. Remedies that are more vulnerable to climate change related events would be considered less permanent. The hierarchy of remedy permanence would be the same as identified in MTCA and SMS, but the risk and/or consequences of selecting a less permanent remedy may be greater for a cleanup site vulnerable to climate change impacts. The risk scenarios identified in Chapter 3, Section 3.4 can help evaluate this criterion.

• Cost. Cost estimates for the alternatives should consider any additional costs associated with increasing remedy resilience, such as additional slope or cap armoring; overdesign of stormwater management systems; backup systems for storm or flooding events; or additional monitoring requirements. In addition, maintenance and repair costs should be included if damage from a climate change-related impact is expected. Washington State Department of Ecology Chapter 5: Feasibility Study Sustainable Remediation: Climate Resiliency/Green Remediation Publication No. 17-09-052 Revised January 2023 Page 48 of 170

• Long-term effectiveness. This criterion addresses the level of certainty that the remedy will be

effective over the long-term, and any climate change related vulnerabilities that may increase uncertainty about the remedy's effectiveness over time must be considered. Uncertainties about future climate conditions should also be considered, such as the amount of sea level rise affecting shoreline cleanup sites. Consideration of climate change impacts will be more important for containment remedies or for those cleanup sites with long restoration timeframes.
• Management of short-term risks. This criterion would include the potential for climate change impacts to affect construction or implementation of the remedy. The longer the restoration timeframe, the more likely such impacts may affect the cleanup. The likelihood or frequency of such events should be considered.
• Technical and administrative implementability. This criterion includes any engineering, permitting, scheduling, logistics, or other challenges that climate change impacts could present, as well as the feasibility of successfully resolving these challenges.
• Consideration of public concerns. Any comments received from the public, tribes, or agencies should be considered under this criterion if the comments address possible climate change impacts on the remedial alternatives or cleanup site."

Protectiveness
The Draft FS does not consider future use, climate change or sea level rise and therefore is not compliant with Ecology guidance or WAC 173.340. The site floods under current conditions and this flooding will get worse in the future with sea level rise and more frequent and severe storms. Alternative 6 will leave contamination on the site that will be exposed to periodic saturation from high tides and storms. The remaining contamination may therefore migrate to surface waters.
Permanence
Under Alternative 6, the site will release contamination to the environment and is not a permanent solution.
Cost
The cost analysis for Alternative 6 does not consider future costs due to future land use or climate change and sea level rise and should be revised.
Long Term Effectiveness
The Draft Feasibility study does not consider climate change or sea level rise and is therefore not compliant with WAC 173.240 or Ecology guidance.
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It is clear that the DCA did not consider public concerns or comments and must be revised. Table 1 below provides a more appropriate DCA when considering WAC 173.340 and ecology guidance.

Alternative 4 Is the Appropriate Choice.
When considering the criteria in WAC 173.340, Alternative 4 is the appropriate choice. This does not mean that Chevron is expected to create an estuary, only that they remove their pollution.

Revised Table 6-1: Determining Whether a Cleanup Action Uses Permanent Solutions to the Maximum Extent Practicable
Step 1: Determine costs and benefits of each cleanup action alternative
Relative Benefit analysis alternative 4 Alternative 6
Criteria Weightings Revised weighting Score score w/revised weighting revised score revised score/original weighting revised score/new weighting Score score w/revised weighting revised score revised score/original weighting revised score/new weighting
Protectiveness 30% 40% 5 2 5 1.5 2 4 1.6 1 0.3 0.4
Permanence 20% 30% 5 1.5 5 1 1.5 4 1.2 1 0.2 0.3
Long-term effectiveness 20% 20% 5 1 5 1 1 3 0.6 1 0.2 0.2
Management of implementation risks 15% 5% 1 0.05 3 0.45 0.15 4 0.2 3 0.45 0.15
Technical/administrative implementability 15% 5% 3 0.15 3 0.45 0.15 4 0.2 4 0.6 0.2
Total weighted benefit score 4.7 4.4 4.8 3.7 3.8 1.75 1.25
DCA relative benefit ranking 1st 1st 1st 1st 2nd 2nd 3rd 3rd
Step 2: Rank by degree of permanence
1st 1st 1st 2nd 3rd 3rd
Step 3: Identify initial baseline alternative X

Table 1: Determining Whether a Cleanup Action Uses Permanent Solutions to the Maximum Extent Practicable
Revised using 2023 Ecology guidance and 2024 WAC
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Protectiveness 20% 5 1 1 0.2
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Management of implementation risks 5% 4 0.2 4 0.2
Technical/administrative implementability 5% 5 0.25 5 0.25
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Permanence

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[1] Page 47, 48:

***Sustainable Remediation: Climate Change Resiliency and Green Remediation**

A guide for Cleanup Project Managers to: Increase resiliency of cleanup remedies to climate change impacts -and-Increase benefits and reduce impacts from the MTCA Cleanup Process

Toxics Cleanup Program

Washington State Department of Ecology Olympia, Washington

Revised: January 2023

First published: November 2017

Publication 17-09-052

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Step 1: Determine costs and benefits of each cleanup action alternative

Relative Benefit analysis			**alternative 4**					**Alternative 6**				
Criteria	Weightings	Revised weighting	Score	score w/revised weighting	revised score	revised score/original weighting	revised score/new weighting	Score	score w/revised weighting	revised score	revised score/original weighting	revised score/new weighting
Protectiveness	30%	40%	5	2	5	1.5	2	4	1.6	1	0.3	0.4
Permanence	20%	30%	5	1.5	5	1	1.5	4	1.2	1	0.2	0.3
Long-term effectiveness	20%	20%	5	1	5	1	1	3	0.6	1	0.2	0.2
Management of implementation risks	15%	5%	1	0.05	3	0.45	0.15	4	0.2	3	0.45	0.15
Technical/administrative implementability	15%	5%	3	0.15	3	0.45	0.15	4	0.2	4	0.6	0.2
Total weighted benefit score				4.7		4.4	4.8	3.7	3.8		1.75	1.25
DCA relative benefit ranking			1st	1st		1st	1st	2nd	2nd		3rd	3rd
Step 2: Rank by degree of permanence												
				1st		1st	1st		2nd		3rd	3rd
Step 3: Identify initial baseline alternative							X					

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Step 1: Determine costs and benefits of each cleanup action alternative							
Relative Benefit analysis				**Alternative 4**		**Alternative 6**	
Criteria		Weightings		score	score*weighting	score	score*weighting
	Protectiveness	20%		5	1	1	0.2
	Permanence	20%		5	1	1	0.2
	Cost	20%		2	0.4	5	1
	Long-term effectiveness	15%		5	0.75	1	0.2
	Management of implementation risks	5%		4	0.2	4	0.2
	Technical/administrative implementability	5%		5	0.25	5	0.25
	Consideration of public concerns	15%		5	0.75	0	0
Total weighted benefit score					3.6		2
DCA relative benefit ranking			3rd		1st		last
Step 2: Rank by degree of permanence					1st		last
Step 3: Identify initial baseline alternative					x		