



Response to Comments

Revised Draft Feasibility Study and Updated Public Participation Plan

**Unocal Edmonds Bulk Fuel
Terminal 0178 Cleanup Site**
11720 Unoco Road, Edmonds, WA

Toxics Cleanup Program

Washington State Department of Ecology

Northwest Region Office

Shoreline, Washington

May 2026

Publication Information

This document is available on the Department of Ecology's [Unocal Edmonds Bulk Fuel Terminal 0178 cleanup site page](#).¹

Cover photo credit

- Image courtesy of Union Oil Company of California

Related Information

- Cleanup Site ID: 5180
- Facility Site ID: 2720

Contact Information

[Toxics Cleanup Program](#)²

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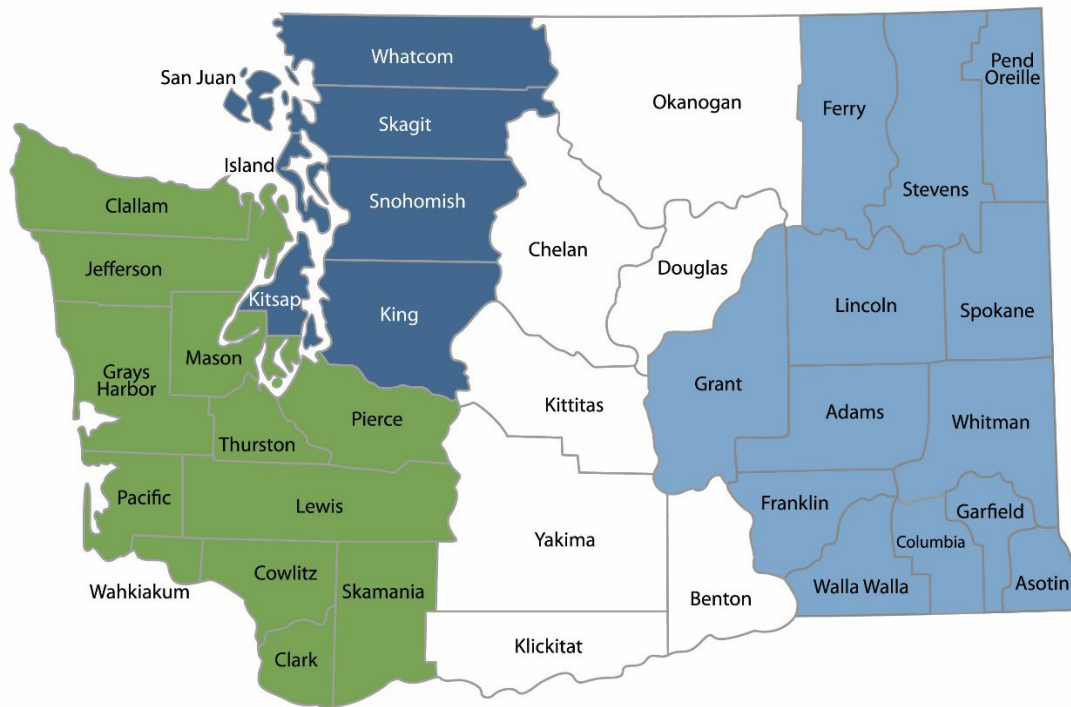
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¹ <https://apps.ecology.wa.gov/cleanupsearch/site/5180>

² <https://ecology.wa.gov/about-us/who-we-are/our-programs/toxics-cleanup>

Department of Ecology's Region Offices

Map of Counties Served



Southwest Region
360-407-6300

Northwest Region
206-594-0000

Central Region
509-575-2490

Eastern Region
509-329-3400

Region	Counties served	Mailing Address	Phone
Southwest	Clallam, Clark, Cowlitz, Grays Harbor, Jefferson, Mason, Lewis, Pacific, Pierce, Skamania, Thurston, Wahkiakum	PO Box 47775 Olympia, WA 98504	360-407-6300
Northwest	Island, King, Kitsap, San Juan, Skagit, Snohomish, Whatcom	PO Box 330316 Shoreline, WA 98133	206-594-0000
Central	Benton, Chelan, Douglas, Kittitas, Klickitat, Okanogan, Yakima	1250 W Alder St Union Gap, WA 98903	509-575-2490
Eastern	Adams, Asotin, Columbia, Ferry, Franklin, Garfield, Grant, Lincoln, Pend Oreille, Spokane, Stevens, Walla Walla, Whitman	4601 N Monroe Spokane, WA 99205	509-329-3400
Headquarters	Across Washington	PO Box 47600 Olympia, WA 98504	360-407-6000

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List of Acronyms and Abbreviations

The list of Acronyms & Abbreviations spells out short forms of words and phrases commonly used within this document.

AO	Agreed Order
CAP	Cleanup Action Plan
CD	Consent Decree
CULs	Cleanup Levels
DCA	Disproportionate Cost Analysis
DPE	Dual Phase Extraction
EC	Environmental Covenant
Ecology	Washington State Department of Ecology
FS	Feasibility Study
LNAPL	Light Non-Aqueous Phase Liquid
MTCA	Model Toxics Control Act
PLP	Potential Liable Person
TEE	Terrestrial Ecological Evaluation
Unocal	Union Oil Company of California
UW	University of Washington
WSDOT	Washington State Department of Transportation

Public Outreach Summary

The Unocal Edmonds Bulk Fuel Terminal cleanup site located in Edmonds, Washington is continuing Washington State's [formal cleanup process](#)³ as directed under the Model Toxics Control Act ([MTCA](#)⁴). Union Oil Company of California (Unocal) is the current owner of the Site (defined below) and a party to Agreed Order No. DE 4460 (a legal agreement) with the Washington Department of Ecology. Since 2005, Chevron Environmental Management Company (Chevron) has been managing the environmental cleanup of the Site on behalf of Unocal.

Initially, a 45-day comment period was held from September 9 to October 24, 2024. It was extended to November 24, 2024, for a total of 77 days. The Department of Ecology's public involvement activities for this Site included:

- **Fact Sheet:**
 - US mail distribution of a fact sheet providing information about the cleanup documents and the public comment period to over 4,725 addresses including neighboring businesses and other interested parties.
 - Email distribution of the fact sheet to over 200 people, including interested individuals, local/county/state/federal agencies, neighborhood associations, and interested community groups.
 - The fact sheet was available digitally through Ecology's [cleanup site webpage](#).⁵
- **Legal Notices:**
 - Publication of two paid print display ads in the *Seattle Times*, dated Friday, September 6, 2024, and Friday, October 25, 2024.
 - Publication of two paid print display ads in the *Everett Herald*, dated Saturday, September 7, 2024, and Saturday, October 26, 2024.
 - Publication of one paid print display ad in the *Edmonds Beacon*, dated Thursday, September 12, 2024, the *Mukilteo Beacon*, dated Wednesday, September 11, 2024, and the *Mill Creek Beacon*, dated Friday, September 13, 2024.
 - One digital ad featured on the EdmondsBeacon.com, MukilteoBacon.com, and MillCreekBeacon.com webpages from September 11 to September 18, 2024.
 - One digital ad featured on the MyEdmondsNews.com webpage from September 9 to October 10, 2024.
- **Contaminated Site Register newsletter:**
 - Publication of six notices in Ecology's Toxics Cleanup Program Contaminated Site Register:
 - Comment Period Notice:
 - September 5, 2024
 - September 19, 2024

³ <https://ecology.wa.gov/MTCA-process>

⁴ <https://ecology.wa.gov/mtca>

⁵ <https://apps.ecology.wa.gov/cleanupsearch/site/5180>

- October 3, 2024
 - October 17, 2024
 - October 31, 2024
 - November 14, 2024.
- Visit [Ecology's Contaminated Site Register website](#)⁶ to download PDFs.
- **Media Notification:**
 - Ecology sent a media notice on Thursday, September 5, 2024, and Friday, October 11, 2024, to the *Seattle Times*, *The Everett Herald*, *My Edmonds News*, *My Everett News*, and the *Everett Post*.
- **Social Media:**
 - Ecology posted a blog on Monday, September 9, 2024, summarizing the background, status, future cleanup work, and public comment period details for this Site.
 - Ecology's Northwest Region [posted](#)⁷ on X (formerly Twitter) on Monday, September 9, 2024, connecting readers to the cleanup site webpage and Ecology's blog about the Site.
- **Open House and Hybrid Public Meeting:**
 - Ecology hosted an in-person open house followed by a hybrid public meeting at the Edmonds City Hall on Monday, September 16, 2024. The open house for in-person attendees was held from 5:30 pm to 6:30 pm and the presentation was provided in-person and online (via the Zoom meeting application). Ecology staff and CEMC staff were available to discuss the project and answer questions.
- **Websites:**
 - Ecology announced the public comment period and associated event, posted the fact sheet, and made the review document available on Ecology's [Unocal Edmonds webpage](#)⁸ and [Ecology's Public Inputs & Events webpage](#).⁹
- **Document Repositories:**
 - Copies of the review documents and fact sheets were available for review at the Edmonds Public Library.
 - Outreach materials also directed the public to contact Kristen Forkeutis, Outreach Specialist, for document review assistance.

⁶<https://apps.ecology.wa.gov/publications/UIPages/PublicationList.aspx?IndexTypeName=Program&NameValue=Toxics+Cleanup&DocumentTypeName=Newsletter>

⁷ <https://x.com/ecyseattle/status/1833181068775629121>

⁸ <https://apps.ecology.wa.gov/cleanupsearch/site/5180>

⁹ <https://ecology.wa.gov/Events/Search/Listing>

Comment Period Summary

From September 9 to November 24, 2024, Ecology solicited comments on the documents listed below.

- **Revised Draft Feasibility Study:** An evaluation of ways to clean up the Site, and a recommended preferred cleanup alternative. This includes:
 - 2017 Draft Feasibility Study
 - 2024 Draft Feasibility Study Addendum
 - Site-Specific Terrestrial Ecological Evaluation
- **Updated Public Participation Plan:** A document explaining how people can participate in the cleanup process.

Ecology received one (1) comment from the Tribes.

Table 1: Tribal commenter

#	First Name	Last Name	Date submitted	Submitted By
1	Todd	Zackey	11.24.24	Tulalip Tribe

Ecology received 162 comments from the public during the 77-day comment period.

Table 2: Public commenters in order of date received

#	First Name	Last Name	Date submitted	Submitted By
1	John	Brock	09.11.24	Individual
2	Sofia	Castillo	09.15.24	Individual
3	Becca	Bailey	09.16.24	Individual
4	Clinton	Wright	09.16.24	Individual
5	Chris	Walton	09.17.24	Individual
6	Rachael	Kutz	09.17.24	Individual
7	Sally	Lider	09.17.24	Individual
8	Beth	Neely	09.17.24	Individual
9	Anonymous	Anonymous	09.19.24	Individual
10	Lisa	Weber	09.23.24	Individual
11	Jesse	Langdon	09.24.24	Individual
12	Matthew	Becke	09.25.24	Individual
13	Georgina	Armstrong	09.28.24	Individual
14	Mona	Fairbanks	09.29.24	Individual
15	Richard	Steele	10.02.24	Individual
16	Douglas	Resnick	10.02.24	Individual
17	Alyssa	Fairbanks	10.03.24	Individual
18	Lorraine	Monroe	10.04.24	Individual

19	Laurie	Sorensen	10.04.24	Individual
20	Don	Dillinger	10.05.24	Green Snohomish
21	Dianna	Maish	10.06.24	Individual
22	Todd	Tatum	10.07.24	City of Edmonds
23	Kathy	Johnson	10.07.24	Individual
24	Ann	Christiansen	10.11.24	Individual
25	Dave	Teitzel	10.11.24	Individual
26	Anne	Perkins	10.14.24	Individual
27	Deborah	Arthur	10.14.24	Individual
28	Nick	Maxwell	10.15.24	Individual
29	Mike	Shaw	10.17.24	Individual
30	Vivian	Olson	10.17.24	Individual
31	Thomas	Bannister	10.22.24	Individual
32	Bailey	Keeler	10.23.24	Individual
33	Mikayla	Monroe	10.26.24	Individual
34	Pam	Tauer	10.29.24	Individual
35	William	Derry	10.30.24	Individual
36	Greg	Ferguson	11.06.24	Individual
37	Jamie	Peltier	11.06.24	Individual
38	Cynthia	Jones	11.06.24	Individual
39	Diane	Buckshnis	11.07.24	Individual
40	Marjorie	Fields	11.07.24	Individual
41	David	Richman	11.08.24	Individual
42	Stephen	Lacy	11.09.24	Individual
43	Joan	Smith	11.09.24	Individual
44	Marlys	Chandler	11.09.24	Individual
45	Nancy	Johnson	11.09.24	Individual
46	Nick	Maxwell	11.09.24	Individual
47	Anonymous	Anonymous	11.09.24	Individual
48	Mike	Benoit	11.09.24	Individual
49	Brittany	Dean	11.09.24	Individual
50	Gayla	Shoemake	11.09.24	Individual
51	Robert	Maier	11.09.24	Individual
52	Neil	Gilham	11.10.24	Individual
53	Bernie	Busch	11.10.24	Individual
54	Sherry	Willis	11.12.24	Individual
55	Kate	Lunceford	11.12.24	Individual
56	Winona	Kim	11.12.24	Individual
57	Rachel	Maxwell	11.12.24	Individual
58	Alice	Owen	11.12.24	Individual
59	Tia	Scarce	11.12.24	Individual
60	Rita	Ireland	11.12.24	Individual

61	Marilyn	Boyd	11.12.24	Individual
62	Karen	Guzak	11.12.24	Individual
63	Aleksandar	Babic	11.13.24	Individual
64	Buck	Stewart	11.13.24	Individual
65	Jim	Skadan	11.13.24	Individual
66	Sarah	Boyd	11.13.24	Individual
67	Tobey	Nelson	11.13.24	Individual
68	Katrina	Riippa	11.13.24	Individual
69	Mona	Carter	11.14.24	Individual
70	Susan	Finley	11.14.24	Individual
71	Malcolm	Cumming	11.14.24	Individual
72	Cathleen	Dalmeida	11.14.24	Individual
73	Elaine	Martin	11.14.24	Individual
74	David	Jones	11.14.24	Individual
75	Julie	Navarro	11.15.24	Individual
76	Judy	Triggs	11.15.24	Individual
77	David	Matthews	11.15.24	Individual
78	Manya	Schilperoort	11.15.24	Individual
79	Suzanne	Cunliffe	11.15.24	Individual
80	Clara	Hsu	11.15.24	Individual
81	Jane	O'Dell	11.15.24	Individual
82	Joyce	Behncke	11.16.24	Individual
83	Tom	Mayer	11.16.24	Individual
84	Sarah	Boyd	11.16.24	Individual
85	Julia	Jordan	11.16.24	Individual
86	Diona	Jaslow	11.16.24	Individual
87	Julia	Winchell	11.16.24	Individual
88	Lesley	Boyland	11.17.24	Individual
89	Jerry	Capretta	11.17.24	Individual
90	Eric	Adman	11.17.24	Individual
91	Derek	Benedict	11.17.24	Individual
92	Linda	Wilson	11.17.24	Individual
93	Elena	Giorgi	11.18.24	Individual
94	Shirley	Oczkewicz	11.18.24	Individual
95	Maureen	Hayden	11.18.24	Individual
96	Michael	Mitchell	11.19.24	Point Edwards Owners Association
97	Tanya	DeMarsh-Dodson	11.19.24	Individual
98	Debora	Ashland	11.19.24	Individual
99	Mike	Shaw	11.19.24	Individual
100	Linda	Burley	11.19.24	Individual

101	Craig	Feyk	11.20.24	Individual
102	Alan	Maszk	11.20.24	Individual
103	Janet	Amberg	11.20.24	Individual
104	Julie	Martinson	11.20.24	Individual
105	Vera	Cannon	11.21.24	Individual
106	Glen	Fuerstneau	11.21.24	Individual
107	William	Alexander	11.21.24	Individual
108	Donald	Ricker	11.21.24	Individual
109	Suzanne and Jim	Kuhlemeier	11.21.24	Individual
110	Donald	Weaver	11.21.24	Individual
111	Chuck	Levine	11.21.24	Individual
112	Jennifer	Anttila	11.21.24	Individual
113	Brent	Butterworth	11.22.24	Individual
114	Ali	Monroe	11.22.24	Individual
115	Robert	Heumann	11.22.24	Individual
116	Mary	Huether	11.22.24	Individual
117	Kathy	Moran	11.22.24	Individual
118	Meagan	Baldwin	11.22.24	Individual
119	Bernie	Zavala	11.22.24	Individual
120	Belinda	Hughes	11.22.24	Individual
121	Keith	Gordon	11.22.24	Individual
122	Shannon	Ozog Somes	11.22.24	Individual
123	Katy	Levenhagen	11.23.24	Individual
124	Ellen	Blackstone	11.23.24	Individual
125	Anonymous		11.23.24	Individual
126	Wendy	Kliment	11.23.24	Individual
127	Mary Ellin	Block	11.23.24	Individual
128	Kathy	Jones	11.23.24	Individual
129	Joe	Scordino	11.23.24	Edmonds Environmental Council
130	Jane	Lommel	11.23.24	Individual
131	Greg	Goodman	11.23.24	Individual
132	Joe	Foos	11.23.24	Individual
133	Jennie	Berger	11.24.24	Individual
134	Candace	Jarrett	11.24.24	Individual
135	Paula	Mueller	11.24.24	Individual
136	Earl	Larson	11.24.24	Individual
137	Holly	Hess	11.24.24	Individual
138	Anonymous		11.24.24	Individual
139	Joan	Bloom	11.24.24	Individual
140	Diane	Buckshnis	11.24.24	Individual

141	Ronald	Eber	11.24.24	Individual
142	Jesse	Langdon	11.24.24	Individual
143	Al	Snapp	11.24.24	Individual
144	Glynis	Cady	11.24.24	Individual
145	Stephen	Wilhelm	11.24.24	Individual
146	Maureen	Traxler	11.24.24	Individual
147	Vanessa	Jamison	11.24.24	Individual
148	Kathleen	Sears	11.24.24	Individual
149	Chris	Altwegg	11.24.24	Individual
150	Lora	Petso	11.24.24	Individual
151	Alan	Mearns	11.24.24	Individual
152	Susan	Schlosser	11.24.24	Individual
153	Laura	Walls	11.24.24	Individual
154			11.24.24	Edmonds Marsh Estuary Advocates (EMEA)
155	Sierra	Rudnick	11.24.24	Individual
156	DC	Miller	11.24.24	Individual
157	Rick	Miller	11.24.24	Individual
158	Derek	Benedict	11.24.24	Individual
159	Don J	Miller	11.24.24	Individual
160	Ronald	Eber	11.24.24	Individual
161	Diane	Martin Rudnick	11.24.24	Individual
162	Neil	Gilham	11.24.24	Individual

Site Background

Unocal owned and operated a former asphalt plant (operating 1953 to late 1970s) and bulk fuel terminal (operating 1923 to 1991). The Washington Department of Ecology (Ecology) entered into an Agreed Order with Unocal to conduct remedial activities at the [Unocal Edmonds Bulk Fuel Terminal 0178 Site](#)¹⁰ (defined below) under the [Model Toxics Control Act \(MTCA\)](#).¹¹ Washington's environmental cleanup law. MTCA provides requirements for contaminated site cleanup and sets standards that protect human health and the environment. Ecology enacts MTCA and oversees cleanups. The [MTCA site cleanup process](#)¹² is completed in steps over a variable timeline.

The majority of the Site has been cleaned up through Interim Actions (early partial cleanups), including several excavations and a groundwater treatment system. Cleanup work at the Site continues as an Interim Action. Ecology is negotiating the final Cleanup Action Plan (CAP) and Consent Decree (settlement) with Unocal.

In 2005, the Washington State Department of Transportation (WSDOT) signed a Purchase and Sale Agreement to purchase property from Unocal, which includes part of the Site. As part of the Purchase and Sale Agreement, transfer of the property to the State cannot occur until certain remediation work has been completed. Ecology is not a party to this agreement and cannot enforce this agreement.

Although the property is zoned for mixed use/commercial, the City of Edmonds and community groups have expressed interest in using a portion of the Site for a marsh restoration project to daylight tidal connections between Edmonds Marsh (not part of the Site) and Puget Sound. By doing so the marsh would become accessible to migrating salmon, including the threatened juvenile Chinook. Ecology recognizes these potential future land use interests and therefore revised the [Terrestrial Ecological Evaluation \(TEE\)](#)¹³ for unrestricted land use. The resulting proposed cleanup levels (CULs) protect both people and ecological receptors (plants, soil biota, and wildlife). However, Ecology cannot dictate how the property is used by the owner – so long as that use does not impact the cleanup. Ecology can only mandate the CULs that must be met for potential future uses.

¹⁰ <https://apps.ecology.wa.gov/cleanupsearch/site/5180>

¹¹ <https://ecology.wa.gov/MTCA>

¹² <https://ecology.wa.gov/MTCA-process>

¹³ <https://ecology.wa.gov/Regulations-Permits/Guidance-technical-assistance/Terrestrial-ecological-evaluation>

Next Steps

Ecology has reviewed and considered the comments received on the Revised Draft Feasibility Study and updated Public Participation Plan. Based on Ecology's evaluation of the comments, the Revised Draft Feasibility Study, including the 2024 Draft Feasibility Study Addendum and Site-Specific Terrestrial Ecological Evaluation, will be updated.

It is too early to know with any certainty if the changes to these documents will result in another public comment period. Updated soil sampling data is being reviewed and will help determine the extent of changes to these documents. While there are situations where a change to a document following public comment is substantial enough to warrant a second comment period on the revised document (i.e. significant change to the cleanup alternatives considered), it is an infrequent occurrence.

While these documents are being revised, Ecology will proceed with the next steps in the cleanup process. This includes drafting the Cleanup Action Plan (CAP), which will consider the changes made to the Revised Draft Feasibility Study (based on updated soil sampling and comments received). The draft CAP will be available for public review and comment.

See the graphic below and visit Ecology's [cleanup process webpage](https://ecology.wa.gov/MTCA-process)¹⁴ to learn more about Washington's cleanup process.

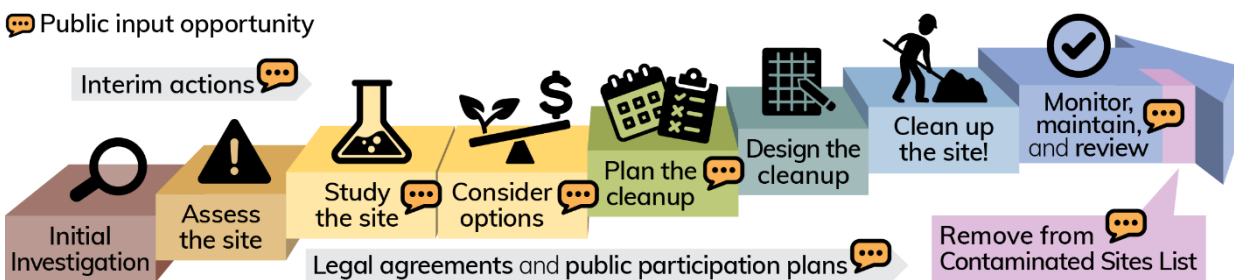


Figure 1: Washington's cleanup process

¹⁴ <https://ecology.wa.gov/MTCA-process>

Tribal comment received & response

See Appendix A to view the original comment, which was submitted as a PDF document.

Comment from: Todd Zackey, 11.24.24

November 24, 2024

Mr. Tanner Bushnell
Toxics Cleanup Program
Washington State Department of Ecology
Northwest Regional Office

Dear Mr. Tanner:

In 1855, representatives of the several tribes that are now known as the Tulalip Tribes were among the signers of the Treaty of Point Elliot made with the United States. As part of this treaty, Tribes ceded millions of acres of their land in exchange for the tribes retaining their fishing, hunting and gathering rights within their usual and accustomed areas. The federal court decision in *United States v. Washington* – known as the Boldt decision – affirmed the tribes’ treaty right to half of the harvestable fish and shellfish in the State, and established the tribes as co-managers of Washington fisheries. In Phase II of the case it was found that, “the State must also bear the burden to demonstrate that any environmental degradation of the fish habitat proximately caused by the State’s actions (including the authorization of third parties’ activities) will not impair the tribes’ ability to satisfy their moderate living needs.”

The current preferred alternative 6 as determined from the disproportionate cost analysis conducted by the Department of Ecology does not take into account the continued impact and the impediment to restoring the Tribes’ treaty right resources at the Edmonds Marsh, specifically daylighting and rerouting of the tidal channel to the Edmonds Marsh and its tributaries, Willow and Shellabarger Creeks. Alternative 6 purposefully leaves toxic contamination in areas that preclude the ability to restore a natural tidal channel to the Edmonds Marsh, which would provide both salmon rearing habitat and access to the Marsh’s tributaries.

The Department of Ecology’s preferred alternative 6 is an instance where Washington State’s actions allow for continued degradation of fish habitat and we strongly suggest that the Department of Ecology re-evaluate its disproportionate cost analysis to take into consideration impacts to the Tribes’ treaty resources. We’d recommend selecting alternative 4 as the preferred alternative or work directly with the Tulalip Tribes to design a clean-up alternative that allows for restoration of a natural tidal channel to Edmonds Marsh.

Sincerely,

Todd Zackey
Field Studies Program Manager
Tulalip Tribes Natural and Cultural Resources Dep

Response

Thank you for your comment. Ecology recognizes the Tribe's treaty rights to harvesting and co-managing fisheries, including that the State must show their actions do not impair the Tribe's ability to satisfy their needs. Several changes to the Feasibility Study (FS) will be made based on different factors, including comments from the Tulalip Tribe and the community as well as updated soil sampling at the Site. Ecology recognizes that Alternative 6, as presented in the FS, leaves a distribution of contaminated areas that would need to be moved and disposed of to accommodate potential future restoration activities.

Historical data was used to create the maps showing areas of contamination that need to be addressed, with some of the data being collected as early as 2001. Prior to finalizing the FS, updated soil sampling was conducted at the Site in November 2025 to identify areas in soil that currently exceed cleanup levels. The alternatives presented in the FS will be updated based on the new soil data. If the incremental costs of Alternative 4 remain disproportionate to the incremental degree of its benefits, Ecology will consult with the Tulalip Tribe in the design of an intermediate cleanup action alternative. The intermediate cleanup action will be more aggressive than Alternative 6 but not include excavation of all contaminants exceeding CULs as proposed in Alternative 4. Ecology will then conduct a new DCA that will consider the Tulalip Tribes' concerns over the FS Alternatives.

Ecology's Toxics Cleanup Program implements and enforces MTCA, which directs the cleanup of contaminated property to ensure established cleanup levels (CULs) are met. Ecology cannot direct restoration activities under MTCA, meaning that Ecology has no legal authority over the property's use after cleanup. However, when identifying cleanup goals for the Site, Ecology must consider future plans for the Site, including goals for habitat restoration. However, other parties would establish those habitat restoration plans/goals.

Public comments received & responses

See Appendix A to view the original comments related to the following submissions: 4, 22, 35, 36, 39, 41, 52, 65, 66, 84, 96, 97, 98, 108, 109, 119, 129, 135, 140, 148, 154, and 162.

1. Comment from: John Brock, 09.11.24

I live directly opposite the Unocal access road from Pine St. I would like to one day see salmon returning to the Edmonds marsh. To make this possible, the Unocal site must be cleaned up deep enough to allow the daylighting of Willow Creek to Puget Sound. Currently, there is a pipe that connects the tidal basin to the sound, but it's mouth is 8-feet deep in the Sound so acts as a barrier to returning adult salmon. Building a clean open channel to make this possible is only feasible if the contaminated soils are removed to a depth of 9-feet, not to the 8-inches being proposed.

Please require decontamination deep enough so a channel may be built and salmon can once again return to the marsh and our creeks to spawn.

Respectfully submitted,

John Brock

Response

Thank you for your comment. Please see Summarized [Topical Response G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

2. Comment from: Sofia Castillo, 09.15.24

I support Alternative 4 if it is the safest option

Response

Thank you for your comment. Please see Summarized Topical Response [J. Support of Alternative 4 and Opposition to Alternative 6](#).

3. Comment from: Becca Bailey, 09.16.24

It is of the utmost importance that we fully acknowledge and understand the damage done to the Edmonds Marsh, Willow Creek, and salmon that once called it home. The ramifications that followed are reversible IF the 68 years' worth of contaminated soils are removed by a minimum depth of 9-feet. We owe this level of clean-up to the people of time immemorial and the species we wrongfully cut off from the valuable resource the marsh once was. Like John Brock, and numerous others, I too would like to see salmon return home to spawn in the creeks of Edmonds. We must daylight Willow Creek. There are many that depend on it.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

4. Comment from: Clinton Wright, 09.16.24

See the original comment in Appendix A (PDF).

Alternative #6 is unacceptable and is not conducive for all possible future uses, especially marsh restoration! Alt. #4 should be demanded of Chevron before the state takes possession.

Response

Thank you for your comment. Please see Summarized Topical Responses [B. Model Toxics Control Act Cleanup Regulation](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

5. Comment from: Chris Walton, 09.17.24

Alternative #6 is not acceptable.

The cost analysis as presented at the Ecology meeting on Sept 17 (Edmonds, City Hall) does not account for future use.

The whole point of "Ecology" is to protect the environment. The citizens of Edmonds have made it clear that the intention for use of this land is to be a natural habitat. They plan to restore the 2 creeks that flow through this property. Solution #6 will potentially put the expense of cleanup on the taxpayers in our efforts to protect the marsh and more importantly use this land for a park and restore the streams.

All of the contaminated materials should be removed, not covered up.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

6. Comment from: Rachael Kutz, 09.17.24

Chevron must do their part to clean up what they've done and help the environment.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#).

7. Comment from: Sally Lider, 09.17.24

Having attended the informational meeting held in Edmonds City Hall on September 16, I would like to make a couple of comments. As a retired City of Edmonds employee (Environmental Education Coordinator) I have watched the progress of this cleanup for over 30 years. At times it has seemed like it was moving so slowly that it would never get to the point where we could say the cleanup is done. Now, it seems that we're getting close, but I'm worried that some things are going to be left undone permanently because they're just too expensive or inconvenient, and people are willing to say that since we don't know for sure who will end up owning the land and whether it will be ecologically restored, maybe we shouldn't require a complete cleanup of all the contamination.

Number three on the DOE Questions and Answers Sheet says that Ecology's role in the cleanup of the site is "to ensure the contamination released from operations at the property is not a risk to human health or the environment." It doesn't seem like that can be ensured, if some of the contamination is going to be left onsite, covered up to prevent movement, and somehow guarded with Environmental Covenants. Especially troubling is the contamination around the WSDOT storm water pipe that runs through the middle of the property. This pipe is over 50 years old, decaying by the minute, and there is no plan for replacing it? That seems incredibly shortsighted.

I can't imagine that ecological restoration of this site will be possible, unless all of the contamination is removed, not just covered up. This land was once a productive part of the Edmonds Marsh Estuary, before it was defiled by industrial activities. It has the potential to be estuarine habitat once again, supporting salmon and migratory birds and other wildlife, contributing to the richness and diversity of Puget Sound. Let's do our best to reach the final step in this process, and not have reason for future regrets that we didn't clean up the entire mess!

Response

Thank you for your comment. Please see Summarized Topical Responses [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), [H. Future Planning and Long-Term Risks](#), and [I. Washington State Department of Transportation Stormwater Pipe](#).

8. Comment from: Beth Neely, 09.17.24

First concern with the cleanup is the data that is being used. The data collected is old and not current, from 2011. If we want accurate results we need to have accurate and current data on the marsh. Second concern is how much will be restored. There can't be just a small amount restored if we want the wildlife to continue to flourish. We need a full restoration to ensure salmon can spawn back into willow creek. The pipe is causing contamination that needs to end. Chevron NEEDS to remove the pipe as it is harmful to species that call this area home.

Response

Thank you for your comment. Please see Summarized Topical Response [E. Updated Soil Sampling](#). Neither Chevron Corporation, nor Unocal, is responsible under MTCA to restore the marsh, and Unocal does not own the stormwater pipe. WSDOT owns and is required to maintain the stormwater pipe.

9. Comment from: Anonymous, 09.19.24

As a resident of Edmonds and concerned about the environment, I support Alternative 4 for the cleanup of Edmonds Marsh. I am not in favor of Alternative 6, which leaves contaminants on site.

Thank you

Response

Thank you for your comment. Please see Summarized Topical Response [Topic J: Opposition to Alternative 6 and Support for Alternative 4](#).

10. Comment from: Lisa Weber, 09.23.24

Hi, Alternative 6 is out of the question. Ecology should commit to fully restoring Edmonds Marsh, to function as an estuary in its original state. Paving over poison is not an alternative. Chevron has the deep pockets needed to carry out this work, and they should. The community will not stand for anything less. I'm a bird watcher with a long history of exploring and protecting the Marsh and I've participated for three years in community science projects headed by Puget Sound Bird Observatory. The Marsh is more than a gorgeous site. It's an important bulwark in this era of climate change and heavy weather. Do the right thing.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

11. Comment from: Jesse Langdon, 09.24.24

I am strongly in favor of alternative 4. We want a fully cleaned, non-contaminated substrate for future restoration efforts. While alternative 6 will cost Chevron significantly less money, that solution is essentially just "kicking the can" down the road to the public to eventually clean-up. Alternative 4 is more expensive, but it's really just a pittance for a multi-national corporation like Chevron. Please do the right thing for the Puget Sound and push alternative 4!

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

12. Comment from: Matthew Becker, 09.25.24

While members of the Edmonds community are grateful that Chevron did not abandon its Edmonds site and has pursued remediation of the harms affecting the site due to the Corporation's former activities on the site, I stand with the majority of community members in insisting that Chevron perform all steps necessary to return the site to the unpolluted condition in which the Corporation found it upon initial occupation of the land. The Corporation's currently favored path of remediation completion [Option 6] does not substantially address the 3-dimensional reality of Chevron's petrol-driven soil contamination on the site - as their contamination followed gravity's pull over many years of operation and has polluted the subsurface earth/wetlands well below the top 3 feet of subsoil that has recently been cleaned up. Simply "Capping" the site following this recent surface-soil remediation is not sufficient, and will allow Chevron's harms to continue (and spread) when the land is returned to its original functionality as a tidal wetlands. On the handful of locations at which Chevron's own maps/surveys indicate the presence of continuing subsoil pollutants, I am advocating that Chevron be required to perform full subsurface remediation as deeply as is required to clean the land - with no "capping" to be performed anywhere.

In all analysis of the site, the 2-dimensional nature of survey maps & site plans betrays the reality of the 3-dimensional actuality of the site's petrol contamination. To complete all remaining remediation on the site and track it transparently in a way that all interest groups can easily perceive, I recommend that all surveys going forward be represented in an axonometric/3-dimensional method which will track & illustrate the degrees to which Chevron's remediation has accomplished community goals within the subsurface depths of the site.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#). The extent of contamination and the extent of past excavations of contamination have been presented both in plan view and as vertical cross sections. The combination of plan view maps and cross sections present a 3-dimensional depiction of Site conditions, albeit on separate pages. Contaminated soil has been excavated up to 15 feet below the ground surface.

13. Comment from: Georgina Armstrong, 09.28.24

I understand that Washington state does not expect the clean-up of the Unocal site to extend to a new landowner's future restoration plans, but why shouldn't Chevron, as the parent company of Unocal, be held accountable for restoring the site to its original condition? Judging by the reaction of those who attended the Dept. of Ecology's September 16th presentation, that's exactly what the Edmonds community wants.

Is it really surprising to learn that the residents of Edmonds support Ecology requiring that all contaminants be removed, as opposed to leaving as many as 22 contaminated spots covered up and needing to be checked regularly in the future to ensure they remain harmless? Why would the state go easy on a company that has polluted the site, and while destroying the original estuary, no less; an estuary the community favors restoring? Chevron should be held accountable not just for a complete clean-up of the site, but also for estuarial restoration. They made the mess, all the while profiting from its operations, so they should clean it up and restore it to its original condition.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#).

14. Comment from: Mona Fairbanks, 09.29.24

Clean up the Edmonds Unocal site! Chevron made 196.91 billion last year. They don't need to find the solution that only 'Partially Cleans Up' the site for the least money. They need to FULLY clean the site to the best technical standards of today! Solution 4 still only cleans the site 95% at a depth of four feet but it seems to be the best answer given (who cares if it costs a measly 4 million!!!!). I think they can do better and they should give the community a HUGE gift- perhaps replacing the storm water pipe running under the site, replanting costs and even a straight up gift to the city for letting this contamination go on for so many year.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#).

15. Comment from: Richard Steele, 10.02.24

In recent discussions and meetings regarding the UNOCAL property and the Edmonds marsh/estuary, it has been mentioned that the WSDOT 104 storm drainpipe running through the area is over 50 years old and will need to be replaced in the foreseeable future. This drainpipe is an integral part of the area of highest contamination that would be protected by environmental covenants in Alternative 6, which is being proposed. Doesn't this create a near

certainty that the environmental covenant would be violated by WSDOT at some point in time? Doesn't this present a huge risk to both WSDOT and any future property owner (i.e. the City of Edmonds)? Is this being considered in the evaluation of Alternative 6?

Response

Thank you for your comment. Please see Summarized Topical Responses [I. Washington State Department of Transportation Stormwater Pipe](#).

16. Comment from: Douglas Resnick, 10.02.24

I encourage Ecology to select Alternative 4. According to the Revised Draft Feasibility Study for the Unocal Edmonds Bulk Fuel Terminal, the Recommended Remedial Alternative is Alternative 6, which relies on covering remaining contaminants. Alternative 4, in contrast, calls for excavating in order to remove the contaminants. As pointed out in the President's Report in the October 2024 issue of the Pilchuck Audubon Society's newsletter, selecting Alternative 6 would leave the contaminants to be cleaned up by the City of Edmonds in the currently planned future, in which the City would buy the site, then restore the Edmonds Marsh to its original condition. Please select Alternative 4. I thank you.

Response

Thank you for your comment. Please see Summarized Topical Response [H. Future Planning and Long-Term Risks](#).

17. Comment from: Alyssa Fairbanks, 10.03.24

Please go with feasibility study alternative 4 and do a complete excavation and removal of all contaminated soil from the Edmonds Marsh/Unocal Edmonds Bulk Fuel Terminal 0178. It is essential for the health of our environment and Edmonds community that we go with an option that focuses on permanence because the contamination would be completely removed.

Response

Thank you for your comment. Please see Summarized Topical Response [Topic J: Opposition to Alternative 6 and Support for Alternative 4](#).

18. Comment from: Lorraine Monroe, 10.04.24

Please fully clean up the Marsh site. Edmonds appreciates the gem the Marsh is for wildlife. I have volunteered with the Park Stewards and the DOT Highway clean up to help with cleaning the Marsh. You could allow us to continue to get the surface nightshade and invasives out of your way to properly restore this amazing location. Thank you for making this right.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#).

19. Comment from: Laurie Sorensen, 10.04.24

Unocal Edmonds Bulk Fuel Terminal 0178 public comment

I strongly recommend the highest level of cleanup possible, which is option #4 NOT #6. I believe that this multi million dollar oil company can afford to leave the natural resource the way they found it - as marsh area and unpolluted. Since capping materials will eventually break down, it is unfair to future generations to have to deal with Chevron's toxins.

Also, why is the removal or complete evacuation of contaminated soils not an option? They would be removing their own fill dirt. The holes could remain, as the land would be closer to the way the land was before they filled it. Has this been discussed or considered?

It is not clear to me that your DCA places enough value on preserving natural resources. This is a special situation involving the health of the Puget Sound and my community. Unocal (and Chevron) polluted this land and need to take full responsibility for its cleanup. These were historic Tribal hunting and gathering lands. They have been ruined and along with it the food chain for endangered species and humans.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#). WSDOT has purchased the property and will acquire it at a to-be determined time in the future. WSDOT does not want to acquire the property with open excavations.

20. Comment from: Green Snohomish (Don Dillinger), 10.05.24

Please add our organizational endorsement to the plan proposed by EMEA to thoroughly rehabilitate and restore the Edmonds Marsh to a condition of functional, genuine estuarial marsh, supporting all the wildlife, hydrologic and ecosystem roles it once had before it was taken over by industry. Much progress has been made already, let it continue on this path to become what it once was: a clean and bright part of the Puget Sound world we can all enjoy

and be proud of, sharing it in health with our avian, piscine, invertebrate and vegetative brothers and sisters.

-Don Dillinger and Bonny Headley, Co-Chairs, Green Snohomish

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

21. Comment from: Dianna Maish, 10.06.24

Rather than the preferred (#6) option of the Department of Ecology, I strongly support the Unocal property being cleaned sufficiently to allow an open salmon channel across the property to connect the Edmonds Marsh estuary to Puget Sound. This would include addressing the WSDOT stormwater pipe and Chevron cleaning the remaining "hotspots" or areas of excess toxins to a sustainable level for salmon viability. Dianna Maish

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

22. Comment from: City of Edmonds (Todd Tatum), 10.07.24

See the original comment in Appendix A (PDF).

Dear Mr. Bushnell,

RE: COMMENTS ON UNOCAL EDMONDS DRAFT FINAL FEASIBILITY STUDY REPORT

We are writing to provide comments on Chevron's Draft Final Feasibility Study Report Addendum. Our comments focus around two primary areas: the suitability of Alternative 6's reliance on the WSDOT stormwater pipe, and the broad use of environmental covenants (ECs).

Stormwater Pipe

WAC 173-340-360(5) outlines procedures to determine whether a cleanup action uses permanent solutions to the maximum extent practicable. Practicable means "capable of being designed, constructed, and implemented in a reliable and effective manner including consideration of cost."

We contend that Alternative 6 does not use a permanent solution to the maximum extent practicable. Its recommended action ensures a temporary solution which has a considerable

likelihood of failing in the near term due to the age of the pipe (approx. 50 years) and the type of pipe installed here. This is asphalt-lined corrugated metal pipe sitting in soils that are intermittently wetted each day, i.e., a corrosive environment. An almost identical pipe in identical soils, of the same age, also under tidal influences, is located less than 50 yards from the WSDOT pipe. That pipe has already failed structurally. The entire bottom of this comparable pipe has corroded to the extent that large sections have no bottom at all. Should that happen to the WSDOT pipe it would wash contaminated soils we already know are there into Puget Sound. Worse yet, in a big enough storm, the pipe could completely fail and destroy the expensive soil cap relied on to isolate remaining contamination in the marsh.

Step 4 in determining whether a cleanup action uses permanent solutions to the maximum extent practicable requires a "disproportionate cost analysis" (DCA) which includes a comparison of the costs and benefits of the baseline alternative with the next most permanent alternative.

We contend that the DCA did not adequately compare the costs and benefits of Alternative 6. It ignores the costs of a likely and foreseeable collapse of the WSDOT storm line and subsequent release of toxins into the environment.

WAC 173-340-360(5)(d) requires the following when assessing the long-term effectiveness of the alternative:

- The degree of certainty that the alternative will be successful;
- The reliability of the alternative during the period of time hazardous substances are expected to remain on-site at concentrations that exceed cleanup levels;
- The resilience of the alternative to climate change impacts;
- The magnitude of residual risk with the alternative in place.
- The effectiveness of controls required to manage treatment residues or remaining waste.

We contend that the proposed Alternative 6 is:

- *Not reliable given known weaknesses with similar infrastructure nearby;*
- *Not resilient to impacts of climate change, and disregards current conditions;*
- *Retains significant residual risk;*
- *The containment option (leaving the soil in place around an aged and over capacity storm pipe) is likely to fail in whole or in part.*

We'd also like to highlight that Chevron's own analysis indicates that WSDOT's stormwater pipe is fragile and likely to collapse if surrounding soil is disturbed. Surrounding soil will certainly be

disturbed during any breach in the pipe – foreseen or not – and dramatically increase the likelihood of the entire system failing.

Costs are also supposed to address design life in the analysis. In para 5.vi.B.I. "Design Life," there is a requirement to estimate the design life of cleanup action components, including engineered controls. If the period of time in which a component is needed exceeds the design life of the component, the cost of replacing or repairing the component in the cost estimate must be included.

The condition of WSDOT's stormwater pipe represents a critical risk in the design of Alternative 6. A failure of the stormwater pipe will likely result in a complete failure of the system. It is essential to account for the real conditions facing the stormwater infrastructure onsite. WSDOT has not assessed the condition of their pipe for over 14 years. Section 4 discusses a "contingency action(s) such as installation of a cast-in-place pipe (CIPP) liner within the stormwater line." We request this action be moved into alternative 6 as the baseline. If the stormwater pipe should fail due to age, intensity of storms, or any other reason, the result would be a catastrophic failure of the entire system. There is no reason to not implement this solution now.

Environmental Covenants

The Revised Draft Feasibility Study envisions Environmental Covenants (ECs) across the entire site despite the decades-long cleanup and the equally long intent of the City of Edmonds to restore the site to a functioning estuary. The Study refers to ECs being the preferred remedial alternative in section 1.2 and calls out the "entire site" as the location of the ECs (section 4.3.1). This disregards the local public and municipality's desires for the site for the sake of convenience of Chevron, pushes additional costs onto entities conducting future remediation, and limits the types of remediation and restoration that will be economically feasible in the future.

Additionally, as discussed in our comments regarding the WSDOT stormwater line's ability to serve as a long-term solution to containment of remaining toxins, we contend that ECs are far less effective than stated by Chevron when the likelihood of failure of this critical component is considered. ECs would be essentially useless when the pipe fails, would impede restoration of stormwater function, and impose additional costs on both WSDOT and any future landowners.

We request that environmental covenants be used sparingly on the site and only in areas where contaminants remain. As stated, we disagree with Chevron's Study's recommendation to leave the contaminants in place due to the age of the WSDOT stormwater pipe and the stresses placed upon it by climate change driven increases in storm surges.

Please feel free to reach out if you have additional questions. Emails or calls should be addressed to Todd Tatum at todd.tatum@edmondswa.gov and Phil Williams at phil.williams@edmondswa.gov.

Sincerely,

Todd Tatum

Director

Community | Culture | Economic Development

(425) 758-1908

Todd.tatum@edmondswa.gov

Response

Thank you for your comment. Please see Summarized Topical Responses [H. Future Planning & Long-Term Risks](#), and [I. Washington State Department of Transportation Stormwater Pipe](#). WSDOT has stated the inclusion of language about a CIPP liner in the FS will not be acceptable to WSDOT. WSDOT contends that the pipe is in good condition. WSDOT will not allow a third party to specify the installation of a CIPP liner in the WSDOT owned stormwater pipe. WSDOT does not have information indicating whether the stormwater pipe is or is not over capacity, but it does recognize that the stormwater pipe will need to be replaced in the future. Updated soil sampling has been completed around the WSDOT stormwater pipe. Results from the sampling will be used to refine the cleanup approach in that area as described in [Topical Response I](#).

Based on currently available data, the stormwater pipe is a barrier between contaminated soil and stormwater that flows to Puget Sound. If the selected remedy leaves contaminated soil adjacent to the stormwater pipe, then the stormwater pipe will be a part of the cleanup remedy and will need to be monitored and maintained.

Environmental Covenants generally cover the whole property and are attached to the property title. Specific area restrictions can be detailed in the Environmental Covenant.

23. Comment from: Kathy Johnson, 10.07.24

Please select Alternative 4 because that is the only protective and permanent solution. It will allow the future restoration of the historic marshlands here. Doing so would help protect against flooding and drought, provide habitat for important species, and preserve quality of life for local human residents and visitors.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

24. Comment from: Ann Christiansen, 10.11.24

I oppose option 6 as the preferred clean up choice for the Unocal site in Edmonds.

First, the cost analysis for option 6 doesn't include replacing the WSDOT storm water pipe running through the site. This pipe is nearing the end of its' useful/safe life. It will need to be replaced, whether planned or during an emergency failure. If this pipe fails, the contaminated soil around it will be disturbed and the covering of contaminants via option 6 fails! The full cost of pipe replacement should be added to the total cost of option 6 to consider it alongside the other options.

Secondly, the covering of hot spots in option 6 is inconsistent with the proposed use of the site. Capping contaminants from above in areas with water saturation from all directions, including below, seems at best unlikely. The DPE recommended states it: "Depresses the groundwater table by pumping out groundwater..." How could a marsh possibly be established with groundwater level continually be depressed? Additionally, the TEE address plants, soil, and wildlife that live (current tense) in the area. The TTE doesn't address future water dwelling plants and animals. How can a proposed solution that doesn't account for water in a revitalized marsh be considered: "the alternative that is permanent to the maximum extent practicable[?]"

Last, and possibly most importantly is an issue regarding the cost vs environmental benefits. In addition to the cost of option 6 excluding storm water pipe replacement (see above), I have little patience for Unocal's choosing a less costly clean up. Unocal ran a petroleum blending, storage, and distribution facility on this site for 68 years, followed by an asphalt plant in the same area for 22+ years. Obviously, the company was profitable during this 90+ year period because they kept operating and remained in such a good business position that they were purchased by Chevron in 2005 for \$17.9 billion. In 2022 Unocal/Chevron profits were \$26.3 billion while in 2023 they were \$21.3 billion - that's billion with a "b." There should be no shortage of money from Unocal/Chevron to pay for thorough and permanent clean up - OPTION 4! Unocal/Chevron used this site, left their contaminants behind, and now should pay remove their remaining mess and return the site to its' pre-Unocal condition. Appropriate clean up is a necessary cost of doing business and Unocal/Chevron should not be allowed to choose the least costly option and force the people of Edmonds to be responsible for an actual permanent clean up.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [I. Washington State Department of Transportation Stormwater Pipe](#). The surface capping is intended to prevent animals and insects from coming in contact with contaminated soil located below ground. Groundwater monitoring is and will continue to be

used to determine if contamination is impacting groundwater, surface water, and organisms living in surface water. The operating DPE system is a short-term cleanup approach and is expected to be shut down and removed within 4 years

25. Comment from: Dave Teitzel, 10.11.24

Please ensure the site is cleaned of contaminants to ensure marsh restoration can be accomplished to make the marsh a fully functioning salt water estuary that can accommodate salmon. This should include removal of all pockets of contaminated soil, including soil near the WSDOT stormwater pipe. As the contaminating party, Chevron should be required to fund this cleanup. We only have one chance to do this right; let's ensure it is done properly.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

26. Comment from: Anne Perkins, 10.14.24

It is untenable that the only two options at this point are to do the absolute least amount of remediation possible (of course, the option preferred by Unocal/Chevron as being least expensive) which will in essence burden future generations with dealing with the contamination if they ever want more than a parking lot, or the most expensive option of cleanup. Please evaluate a new scenario that treats different areas more individually (the WSDOT pipe versus the Chevron Hot Spots). A more thorough clean up of the latter would facilitate future uses of this waterfront property in more environmentally sensitive ways. Unocal/Chevron has benefitted from the use of this property, and should use the profits thereof to pay their fair share of remediation to restore part of a waterfront environment that is more than a parking lot.

Response

Thank you for your comment. Please see Summarized Topical Response [D. Feasibility Study Alternatives](#).

27. Comment from: Deborah Arthur, 10.14.24

DOE segregate the 22 hot spots that Chevron is responsible for as if it is bundled with the WSDOT pipe.

Requesting a new scenario will force Chevron to pay for the hot spots since they created them. This is the only fair way to do this it helps with Ecology, and it is the salmon and land we want pristine right? right!

Response

Thank you for your comment. Please see Summarized Topical Response [D. Feasibility Study Alternatives](#).

28. Comment from: Nick Maxwell, 10.15.24

It is irresponsible for any clean up to leave toxic pollutants that will be washed to the surface when the site is submerged by storms and higher sea levels in the coming decades.

Response

Thank you for your comment. Please see Summarized Topical Response [B. Model Toxics Control Act Cleanup Regulation](#).

29. Comment from: Mike Shaw, 10.17.24

Thank you DOE for your work on this project over the years. I'm very glad that you have strictly followed the MTCA, and have lowered the CULs in light of the hoped for use of this land and estuary for future chinook salmon runs. In particular, I'm glad to see that levels of benzene and PAHs are being closely monitored. Regarding the WSDOT storm drainage pipe that was installed in the 1970s, and around which much of the remaining contaminated soil is still found, I have a question: are there non-invasive plants that could be planted around/on top of the pipe that could assist in soil and groundwater cleanup? Some plants are natural contaminant removers, and I wonder if any of them are appropriate for this site and this cleanup. Thanks!

Response

Thank you for your comment. The highest contamination at the Site was detected at 10 feet below the ground surface. Treatment of deep soil contamination by phytoremediation is still experimental. Phytoremediation is better suited for surface or shallow soil contamination cleanup. Establishing roots at 10 feet below ground and transport of contaminants from deep roots to the surface is less effective.

30. Comment from: Vivian Olson, 10.17.24

I appreciate the efforts of Unocal/Chevron, Ecology, and the dedicated community volunteers who have all contributed to the great progress made at the Edmonds Marsh to date. It has been time consuming, and it has been expensive. I start by saying thank you and meaning it sincerely.

Just as sincerely, I implore you to revisit the analysis that led to selection of Option 6. Something was missed or improperly weighted. Leaving the contaminants beneath such an aged pipe and thinking that an environmental covenant will offer any lasting protection to the marine life and environment does not pass the commonsense test: failure of the pipe from age or natural disaster is a probability rather than a possibility, and when that happens, the contaminants are no longer neatly contained beneath it. Addressing the integrity of the pipe would likely postpone such an environmental crisis, but removal of the contaminants under the pipe is the only long term, environmentally responsible approach to this problem.

Unocal/Chevron does not owe us cleanup to this level because they are rich. They owe it to us because they are responsible.

Response

Thank you for your comment. Please see Summarized Topical Response [I. Washington State Department of Transportation Stormwater Pipe](#).

31. Comment from: Thomas Bannister, 10.22.24

Chevron should be required to clean up their contamination.

Response

Thank you for your comment. Please see Summarized Topical Response [Topic A: Model Toxics Control Act](#).

32. Comment from: Bailey Keeler, 10.23.24

Alternative 4 should be the chosen treatment to remove contamination. Chevron should have to clean up their mess regardless of the cost.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

33. Comment from: Mikayla Monroe, 10.26.24

My name is Mikayla Monroe and this comment is for the Unocal Edmonds Bulk Fuel Terminal 0178 project. My comment is to use Feasibility Study Alternative Number 4 as presented at the hybrid public meeting on September 16th, 2024 at Edmonds City Hall. This had the highest MTCA Benefits Rating (blue bar as shown in the presentation). It is well worth the cost to cleanup what the Unocal company did to our natural habitat and its creatures decades ago and the impact it still has today.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

34. Comment from: Pam Tauer, 10.29.24

Please "do the right thing" and choose Alternative 4. Ecology needs to hold Unocal responsible for complete contamination extraction. Although this is the more expensive solution, it is the only one that will ensure the decontamination is completed successfully.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

35. Comment from: William Derry, 10.30.24

See the original comment in Appendix A (PDF).

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.

Management of Short-term Risks

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.

Technical and Administrative Implementability

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.

Consideration of Public Concerns

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.

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							
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			

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [H. Future Planning & Long-Term Risks](#). [WAC 173-340-360](#)¹⁵(5)(c)(i)(C)(I) states that public concerns should be considered when evaluating the five benefit criteria. Public concerns are not evaluated as an environmental benefit as presented in Table 1 above.

36. Comment from: Greg Ferguson, 11.06.24

See the original comment in Appendix A (PDF).

Draft Feasibility Study Addendum Input, 11/5/24

Greg Ferguson

Thanks to Chevron and Ecology for the work completed on this site so far. Most of the site is clean, however, contaminated soil in critical areas remains. A permanent cleanup method is urged for these areas - excavation and removal.

The Draft Feasibility Study Addendum and Disproportionate Cost Analysis should be amended to fully comply with the Model Toxics Control Act Cleanup Regulations (MTCA). The existing draft did not consider several key elements required by the MTCA and did not fully consider others. Elements not considered in the draft include climate change, other reasonable alternatives, tribal input, public input, updated soil samples, future use of the site, and future costs. These elements are important parts in selecting a preferred cleanup action.

Proposed is a disproportionate cost benefit analysis that considers these elements and does not overemphasize cost.

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¹⁵ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

1. Climate change impacts.

Model Toxics Control Act Cleanup Regulations require that climate change be considered. Climate must be included in remedial investigations [WAC 173-340-350 (6)(f)] and for cleanup actions [WAC 173-340-360 (3)(a)(v) and WAC 173-340-360 (5)(d)(iii)(A)(III)].

Climate change was not considered in the evaluation of cleanup alternatives.

Climate change, including sea level rise, can substantially impact the cleanup. The erosion potential for ground near the southwest corner of the site will increase, wave energy can damage soil covers, and rising ground water levels can mobilize remaining contamination.

Current 100 year flood levels are 12.4 ft (all elevations reference the NAVD88 datum) and the southwest part of the Unocal site is in flood Zone VE where wave runup adds another 3.6 ft of potential impact (Flood insurance Study, FEMA, Snohomish County, June 19, 2020). There is a 35% chance that sea levels will be 1 ft higher by 2050 (UW Climate Impacts Groups Sea Level Rise Visualizations). Near term future sea level rise and wave impacts then reach up to an elevation of 17 ft at this location.

BNSF railroad bridges near the southwest corner of the site provide a potential path for water to flow back and forth from the Unocal property to Puget Sound. The bottom of the bridge girders are at 12.7 ft. The potential currently exists for this flow to occur.

This flood flow will occur more frequently and severely as sea levels rise and storms increase in intensity. Floodwater will enter the Unocal site from the Marsh pipeline, SR104 stormdrain, the Point Edwards stormdrain, and Marsh creeks. When tides recede, this floodwater can flow back to the Sound under the railroad bridges (see drawing below) as the Marsh pipe flow capacity is exceeded. This flood flow will cause erosion near the southwest property corner, potentially damaging engineered covers if they are installed there.



The southwest corner of the site will encounter high waves as sea levels rise. This wave energy will extend farther inland and overtop the railroad tracks (16 ft). Waves will increase the potential for damage to cap and covers.

Finally, increasing sea levels will cause the groundwater table elevation to rise. This will put more of the contaminated soil in contact with groundwater. The vertical and horizontal motion of groundwater can mobilize contamination and move it to the Willow Creek channel and to Puget Sound.

These mechanisms decrease the Protectiveness, Permanence, Long-term Effectiveness and increase the future costs of cleanup solutions that use caps and covers.

2. Additional remedial action alternatives

The Edmonds community and the Edmonds Marsh Estuary Advocates prefer that all the remaining contamination be removed. However, if the current comparison method that strongly emphasizes cost (the cost/benefit ratio) continues to be used, other alternatives that are less expensive should be considered.

WAC 173-340-351 (6)(b) supports this suggestion by directing that reasonable cleanup action alternatives be identified and evaluated. These other reasonable alternatives are intermediate between alternatives 4 and 6. Alternative 4 proposes excavation of all remaining contaminated soil areas. Alternative 6 proposes engineered covers for all remaining contaminated soil, continued operation of the dual-phase extraction (DPE) system, contingency plan, and environmental covenant. Intermediate remedial actions combining both excavation and containment should be considered [as described in WAC

173-340-351 (6)(b)(v)].

A proposed new Alternative 7 is shown in the diagram below. The red circles identify contaminated areas that would be capped and covered. The remaining contaminated soil areas would be excavated. Most of the cost of Alternative 4 is excavating around the SR104 pipeline. Leaving these areas with covers is significantly less expensive.

Alternative 7 reduces but does not eliminate the risks of future ground and surface water contamination, future sea level rise impacts, and allows for the eventual reconnection of the Marsh to Puget Sound and restoration of the site to salt water estuary habitat without the cost of further contaminated soil excavation.

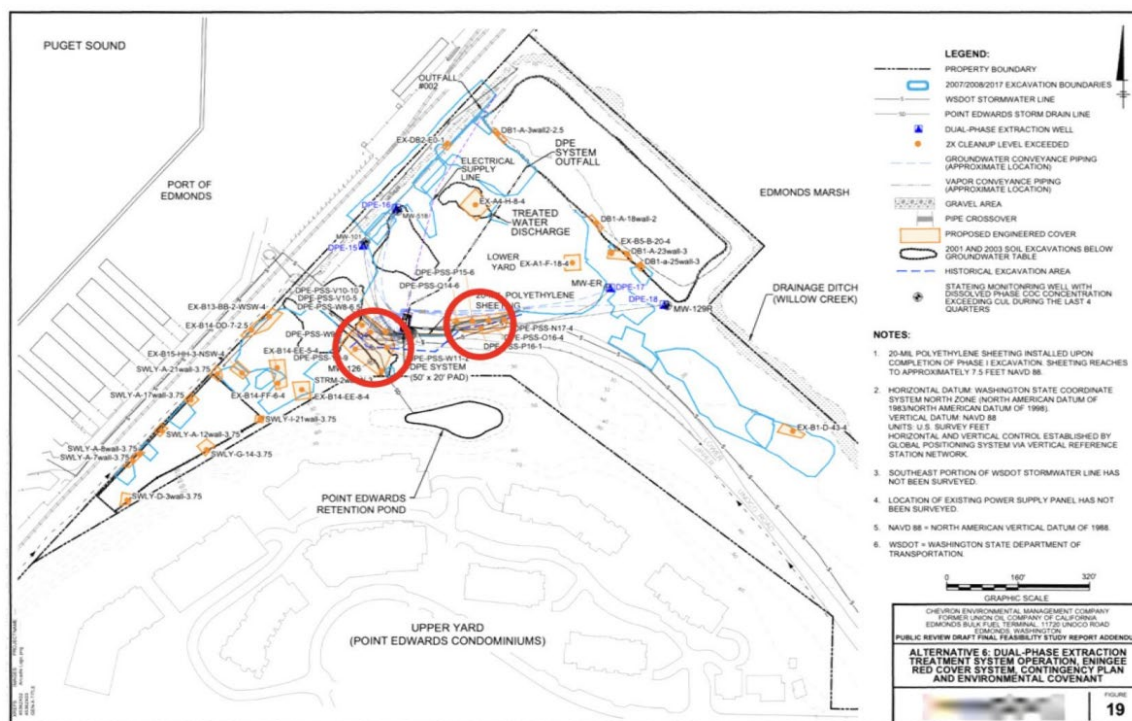
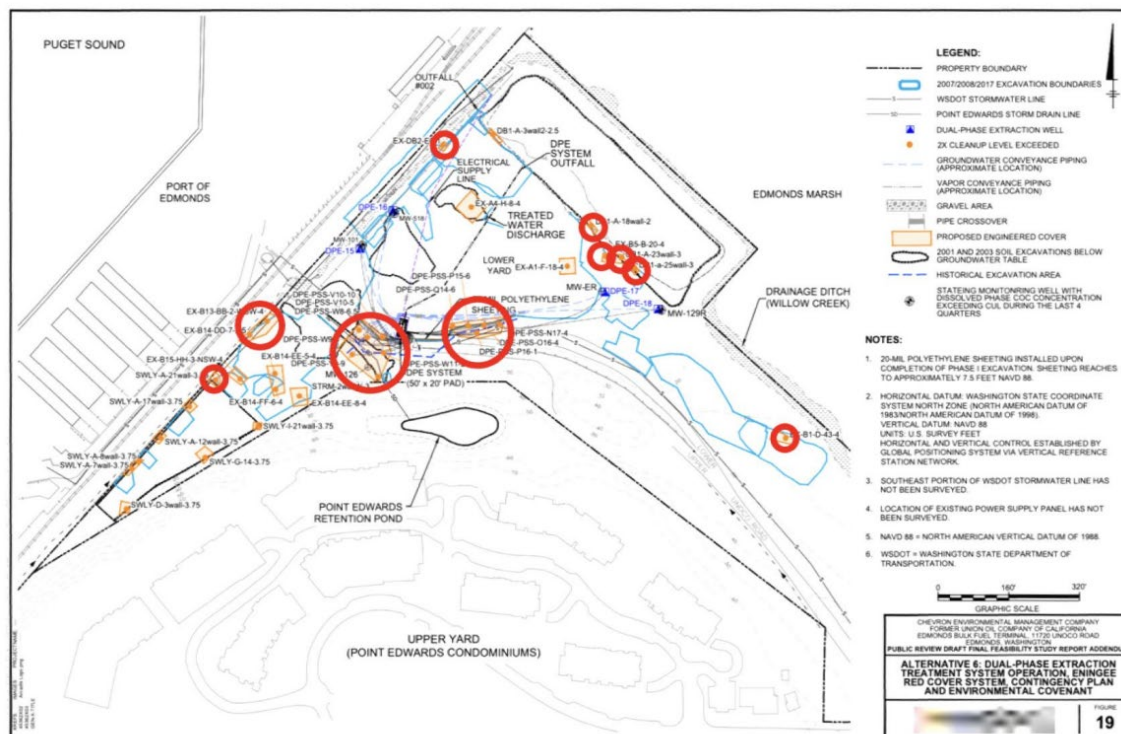


Illustration of proposed Alternative 7

Proposed Alternative 8 is shown below, again the red circles would be capped and covered. This alternative leaves more areas with engineered covers and would be less expensive than Alternative 7.



These alternatives should be fully considered through an updated disproportionate cost analysis in the feasibility study (see below).

3. Tribal input

Indian tribes' rights and interests have not been considered in the feasibility study as required in WAC 173-340-360 (3)(d)(iii). Also, WAC 173-340-620 (3) directs that a Tribal engagement plan be developed. The Unocal site is within the adjudicated usual and accustomed fishing area of the Tulalip Tribes. An engagement plan should include phone calls and visits to tribal headquarters to solicit input on the Unocal cleanup.

The tribal engagement and input adoption plans should also incorporate existing documentation. The Tulalip Tribes website, under “Treaty Rights and Government Affairs” includes restoration of natural resources as a tribal mission. A future use of the Unocal site for habitat restoration would help meet this goal.

Another important source for tribal input is the 1974 Boldt case affirming rights granted in the 1855 Treaty of Point Elliott. Later cases have affirmed treaty rights against destruction of habitat necessary to support the salmon runs. As a result, WSDOT, under a 2013 federal culvert injunction, has a tribal treaty-based duty to remove barriers to fish passage. The repair of the Marsh pipeline fish passage barrier will require a surface water channel on Unocal property. Since WSDOT holds the equitable title to the

property, reconnection will be a required future use under this federal injunction.

The existing Marsh pipeline blocks salmon passage and violates tribal treaty rights. Future use of the site for a surface water connection meets court orders to remove fish passage barriers. Contamination left on the site that would impede efforts to restore fish passage.

Feasibility study benefit calculations should consider tribal rights and resulting court mandated orders. The benefit rank of solutions that leave contamination in the way of reconnecting the Edmonds Marsh to Puget Sound should be lowered.

4. New soil samples

Most soil samples were collected during remedial excavations in 2001, 2003, and 2008. Since the site contaminants have been subject to natural attenuation over the intervening years, there may be substantial changes in the number and extent of remaining areas that do not meet cleanup limits.

This new information could have an impact on the ranking of the benefits of each proposed remedial action alternative and their costs of implementation.

If new remedial action alternatives combining engineered covers with excavation are considered, updated soil sampling will be particularly important. The disproportionate cost analysis will change depending on how much of the site remains contaminated.

Accurate information delineating current soil contamination is needed before alternatives are selected in the feasibility study process.

5. Future use of the site.

Future use of the site for reconnection of the Edmonds Marsh to Puget Sound must be considered in the evaluation of alternative cleanup methods.

The existing Marsh pipeline blocks salmon passage and violates tribal treaty rights. Future use of the site for a connection meets a court order (the 2013 federal culvert injunction) that requires the removal of fish passage barriers. Contamination left on the site would impede efforts to restore fish passage. The surface water channel replacing the pipeline would be on the Unocal site. Since WSDOT holds equitable title to the property, reconnection will be a required future use under this federal injunction.

Also, WSDOT proposed replacement of the Marsh pipeline with a surface water reconnection when planning for a ferry terminal on the site. The terminal project has been abandoned but if WSDOT retains ownership plans would likely still include this reconnection. There are detailed and specific goals and a habitat plan developed for this reconnection.

Future use of the site as a saltwater estuary is the option preferred by the local Edmonds Community.

When these future uses are considered, the Protectiveness, Permanence, Long-term Effectiveness rating of cleanup solutions that leave contaminated soil on the site should be lowered.

6. Future costs.

A cleanup action requirement is that post construction costs are one of the criteria used to evaluate each alternative [WAC 173-340-360 (5)(d)(vi)(B)]. Alternatives that leave contaminated soil on the property are subject to these future costs. They are not included in the current feasibility study.

The costs necessary to maintain the effectiveness of engineered covers include:

- Replacement or repair of covers and caps.
- Compliance monitoring (including sampling and analysis).
- Periodic reviews.
- Regulatory oversight.

Major potential future costs include:

- The added cost of replacing/repairing the SR104 stormdrain due to contaminated soil. The 50 year old pipeline is likely to need repair or replacement soon. The additional cost of dealing with contaminated soils when replacing the stormdrain needs to be estimated. If this cost makes replacement too expensive, repair options such as cast in place pipe would be considered. The additional cost of repair vs replacement should be assigned to cleanup alternatives that leave contaminated soil around the pipe.
- The added costs due to contaminated soil of replacing/repairing the Point Edwards stormdrain and Point Edwards water supply pipe. Both these pipelines are 20 years old and have remaining areas of contamination over and around them. These added costs due to contaminated soil removal are also part of the future cost of remedial action alternatives.
- Impacts due to climate change induced sea level rise:
 - Costs of engineered cover damage resulting from flood flow and wave action near the southeast corner of the Unocal property.
 - The future costs of excavating areas where groundwater level increases and frequent sea water inundation mobilizes and moves contamination toward Willow Creek and Puget Sound.
 - The added cost of overdesigning stormwater management systems and construction of backups to prevent flood damage to engineered covers.
- Repair and remediation due to earthquakes. The loose, saturated soils and fill materials at the marsh are subject to liquefaction. This could potentially mobilize contamination. Typical surface features from liquefaction include “sand boils” that could disrupt a soil cap.

- Repair and remediation due to tsunamis. Engineered covers need to be constructed to withstand high wave forces.

Including these future costs in the disproportionate cost analysis has the potential to result in the selection of a different cleanup alternative.

7. Disproportionate Cost Analysis

Changes are proposed to cost estimates, benefits, and the method used for comparison.

Cost Estimates

1. Include future costs. Engineered cover maintenance; the added costs due to contamination of repair/replacement of the SR104 stormdrain, the Point Edwards stormdrain and the Point Edwards water main; the future costs of climate induced wave and flood damage to covers; future excavations required if rising groundwater levels and frequent flooding mobilize remaining contamination; and earthquake, tsunami, and stormwater flood protection costs should all be estimated and included (see the future costs section above).

2. Include new, combined treatment method alternatives. Alternatives (7 and 8) that do not excavate the SR104 stormdrain are much less costly. The estimated upper cost for the WSDOT stormdrain excavation in Alternative 4 is \$8,620,000 (30% contingency included). Removing that amount from the Alt 4 total results in a cost of \$2,800,000 for Alt 7. Adding future costs to the Alt 6 estimate would then make the costs comparable.

3. Change the way that costs are compared to benefits. Using the Cost/Benefits ratio overvalues the importance of costs. WAC 173-340-360 (5)(d) lists six criteria for comparing alternatives and one of those is cost. There is no rule that requires that cost be considered as significantly more important than the other five criteria. There are two options for aligning the disproportionate cost analysis with the WACs:

- Do not use Cost/Benefit as the comparison tool. Include cost as one on the 6 criteria and score and weight it as is done with the others.
- If the Cost/Benefit ratio is used, change the score range from 0-5 to 0-10. Benefits can then be given more relative importance with a wider range of scoring options.

Benefit scoring

Weights are assigned based on the importance of Protectiveness, Permanence, Effectiveness over the long-term and Cost. Cost is not given a significantly higher weight. The scoring assumes a 0 to 10 scale.

Protectiveness (weight 25%). Excavation and engineered covers, while in place, are protective of human health and the environment, reduce existing risks, require similar timeframes for attaining standards, and improve environmental quality. However, leaving contamination on-site means that risks due to engineered cover damage continue over long periods, lowering the score for all those considerations. On-site risks are high when contamination remains. These risks include failure of the SR104 or Point

Edwards pipelines and cover damage due to human activities, climate induced flood flow and wave action, tsunamis, earthquakes. The risk to groundwater increases as the water table rises and sea water inundates the site more frequently. Groundwater is also at risk when the DPE system shuts down and contamination around the SR104 pipeline is no longer contained. Public and tribal input favoring excavation is a factor in the scoring.

Alt 4 – score of 10

Alt 6 – score of 5

Alt 7,8 – intermediate between Alt 4 and Alt 6

Permanence (weight 20%). Engineered covers do not permanently destroy or reduce the mass of hazardous substances over a reasonable time frame. They protect ecological receptors while in place and are undamaged and reduce upward but not horizontal mobility. Excavation options more closely align with the public goal of Marsh restoration and with tribal treaty obligations.

Alt 4 – score of 10

Alt 6 – score of 2

Alt 7,8 – intermediate between Alt 4 and Alt 6

Effectiveness over the long term (weight 20%). Engineered covers do not have the certainty of success that excavation has, are less reliable, are not resilient to climate change, leave risk in place, and require long-term maintenance and control. Engineered covers and institutional controls are the lowest ranking components in the hierarchy guide described in the WAC.

Alt 4 – score of 10

Alt 6 – score of 1

Alt 7,8 – intermediate between Alt 4 and Alt 6

Management of implementation risks (weight 5%). Excavation has the greatest potential for exposure of workers to contact contaminants and the largest addition of GHG to the atmosphere.

Alt 4 – score of 1

Alt 6 – score of 10

Alt 7,8 – intermediate between Alt 4 and Alt 6

Technical/administrative implementability (weight 5%). Excavation requires the most technical and administrative overhead but over a shorter time period than engineered covers.

Alt 4 – score of 5

Alt 6 – score of 5

Alt 7,8 – score of 5

Cost (weight 25%). The cost of Alt 4 is currently estimated to be five times higher than Alt 6. Including future costs in the estimate for Alt 6 will bring that difference closer.

Alt 4 – score of 3

Alt 6 – score of 10

Alt 7,8 – intermediate between Alt 4 and Alt 6

8. Conclusion

When climate change, other alternatives, tribal input, public input, updated soil samples, future use of the site, and future costs are fully included in the alternative comparison and when cost is given a weight comparable to the other criteria, Alternative 4 will be the likely preferred alternative. If the cost/benefit ratio continues to be used then proposed Alternative 7 or 8 will likely be the preferred alternative

Response

Thank you for your comment. Please see Summarized Topical Responses [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [H. Future Planning and Long-Term Risks](#). [WAC 173-340-360](#)¹⁶ (5)(d) lists all criteria evaluated when completing a DCA, which includes cost. [WAC 173-340-360](#)¹⁶ (5)(c)(iv) describes how costs are compared to the benefit criteria by determining “whether the incremental costs... are disproportionate to the incremental degree of benefit”. The use of a cost-benefit ratio is consistent with current Ecology guidance on completing a DCA.

37. Comment from: Jamie Peltier, 11.06.24

1. I've had enough of oil and gas companies ruining our environment and getting away with it! Chevron Corporation made the mess- they need to clean it up.
2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in the feasibility study.
3. A more accurate cost-benefit calculation is needed.
4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.
5. Public Concern has not been properly weighted.

¹⁶ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

6. A cleanup plan between Alternative #4, complete excavation, and Alternative #6, no excavation, should be considered.

7. Tribal rights and interests must be included in the feasibility study.

8. Updated soil samples are needed before the feasibility study is completed.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Analysis / Feasibility Study](#).

38. Comment from: Cynthia Jones, 11.06.24

Rather than the preferred (#6) option of the Department of Ecology, I strongly support the Unocal property being cleaned sufficiently to allow an open salmon channel across the property to connect the Edmonds Marsh estuary to Puget Sound. This would include addressing the WSDOT stormwater pipe and Chevron cleaning the remaining "hotspots" or areas of excess toxins to a sustainable level for salmon viability.

We have seen how salmon restoration benefits the surrounding community in terms of tourism and economic benefit. Marsh restoration would also be hedge against increased flooding with sea level rise and climate change.

If the site is not thoroughly cleaned, the toxins in the ground will continue to be a hazard in years to come. Chevron made the mess - Chevron should be held responsible for making the site whole - restoring it to its original state. In a year in which Chevron had \$4.5 billion in the third quarter, I believe Chevron can afford to do a thorough and complete clean up.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), and [G. Marsh Restoration/Habitat Protection/Salmon/Fish Passage](#).

39. Comment from: Diane Buckshnis, 11.07.24

See the original comment in Appendix A (PDF).

Proposal for Edmond's Marsh Near-Shore Estuary restoration plan using a Public/Private Partnership Business Plan

Background:

In 2021-2022 WRIA 8 Salmon Recovery Manager Jason Mulvihill Kuntz, Edmonds City Council Member and WRIA 8 delegate Diane Buckshnis, and Edmonds citizen Jack Faris were tasked by Puget Sound Partnership (PSP) Salmon Recovery Council to work on establishing a public/private partnership (PPP) with high wealth donor foundations and/or citizens to obtain a private funding strategy to fund all the delayed costs which was estimated at \$35M. An excellent example of a recent PPP is when Barry Diller and Diane von Furstenberg paid to rehabilitation a dilapidated pier called "Little Island" (www.wsj.com/articles/little-island-park-barry-diller-diane-von-furstenberg-11621508053). Mr. Diller's family foundation spent over \$260M to build Little Island where admission is free and committed another \$120M for the next 10 years for maintenance.

Proposal:

Create a Private Public Partnership to structure the transfer of UNOCAL property (sold in 2005 to WSDOT Ferries for \$8.1M) to the City of Edmonds at no cost to the City. Designing and restoring the near-shore estuary to optimize the native wildlife habitat found on the largest near-shore estuary along the Sound. This proposal will educate concerned environmentalists, youth, and philanthropic foundations who are unfamiliar with this unique saltwater/freshwater estuary. This proposal identifies a few methods to attain an optimal restoration plan that would create a channel from the Puget Sound to the Marsh estuary lagoon. This channel opens a pathway for salmon for spawning and recovery. Meadowdale Beach Park restoration is a perfect example and costs around \$16m with half being City bonds. My proposal relies on Private Donors to take the place of City issued bonds.

Costs, Concepts, and Logistics:

The purchase and restoration of the Unocal Property into a near-shore estuary is expensive and the Department of Ecology has provided six scenarios with estimated costs compared to the Model Toxics Control Act (MTCA) Benefits Ranking. It is complex as there remains about 22 hot spots on the "Unocal Property" and then there is a WSDot stormwater pipe that transverses the property. WSDOT has refused to include the removal of this 52+year-old pipe. In all the scenarios, the WSDOT owned pipe is combined with the Chevron hot spots. The WSDOT storm pipe removal being the most expensive component.

In an optimal scenario, the lower section of that pipe would be removed and an infiltration side stormwater channel system would be created. This scenario will not happen so DOE has

indicated that a restricted covenant would be placed on this pipe. Since the hot spots and the pipe are bundled together, it is obvious part of the decree would include the hot spots. Both components as part of the decree means future costs of any clean-up when the pipe fails may fall onto the purchaser or the City of Edmonds. The hot spots are obvious a bonus for Chevron as they will remain hot spots forever which should not be acceptable to anyone that is part of this MTCA process.

DOE chose option #6 due to the lowest cost factor and as mentioned it combines Chevron's hot spots with WSDOT's pipe. The public liked scenario #4 which had the best environmental benefit but the highest costs as it would clean up everything through excavation.

Based on all the variables and knowledge of dealing with contaminated properties through my WRIA 8 grant funding work, it is HIGHLY RECOMMENDED that DOE require a NEW scenario or Scenario #7 that would bifurcate the WSDOT pipe from the hot spots. This scenario places clean-up responsibility solely with Chevron to clean-up those hot spots. The restricted covenant would not even contain this scientific problem as the clean-up costs will be bore onto who created the contamination.

The separation of these two ownership issues would be beneficial on so many factors with costs being the most significant. But from an environmental standpoint, the daylighting of the channel and lagoon could be designed to be completely separated from the WSDOT pipe which could remain in place for another 50 years. In this new scenario, the restrictive covenant would only be placed on the WSDOT pipe. With the marsh estuary restoration the channel would be diverted more south of the WSDOT pipe and/or the pipe could be lined.

The City of Edmonds has the right of first refusal in the 2024-2025 State Transportation Budget. Additionally, the City entered in a memorandum of understanding with WSDOT-Ferries in 2023 to purchase the property. The City of Edmonds does not have the money to purchase the property. Nor has the City developed a full restoration plan since restoration and design for the beach area to the railroad was denied by WRIA 8 in 2020. State grant funding agencies will have issues with the contaminated property if the hot spots remain, so again Chevron should be held financial responsible for cleaning up these areas.

The cost to purchase the property should look at the environmental intent of State and Federal agencies goals which area "net ecological gain" and this near-shore estuary restoration should be a Top priority. Since the property was purchased by "taxpayers' gas taxes", WSDOT and the Governor Ferguson should truly show their environmental intent and transfer the property at no costs to the City.

Because of the MOU's language of payment being based "on fair value" of the property which currently is zoned commercial real estate, the City of Edmonds should also downzone to open space. While this seems like a lot of "throwing money away" due WSDOT because of the fabricated cost created from a fair market valuation, the environmental moral compass should

be restore and allow the City of Edmonds to manage the restoration process and maintain the optimal urban near-shore estuary.

All costs and scope of an “optimal” restoration scenarios are simple: 1) Chevron “cleans the hot spots” and is noted to be part of this historic partnership and WSDOT removes the aged WSDOT stormwater pipe. WSDOT’s acknowledgement the aged stormwater pipe needs to be replaced and designs a modernized stormwater infiltration side channel. WSDOT transfers title to the City of Edmonds at a cost factor of zero as citizens have already paid for this purchase through gas tax. Private donor(s) become a part of a historic partnership that supports both State and Federal goals of salmon recovery. 2) Chevron cleans hot spots and WSDOT’s pipe remains with a restrictive covenant. WSDOT transfers title to City at zero costs. The daylighted channel and lagoon are designed north creating a near-shore estuary avoiding the WSDOT pipe. As seal-level rise is expected, the pipe can either be lined or some new technology used so that when the channel expands or when the pipe fails, it will not impact on the newly restored near-shore estuary. Both scenarios include a “environmental capital raising committee to seek private funding and partnership support.

Goal: Optimal restoration of the Edmonds near-shore Marsh Estuary.

To achieve this goal the following needs to be addressed. 1) create a new scenario #7 to address Chevron’s responsibilities for clean-up; 2) create a private/public partnership to work towards gaining funds and managing the project; 3) resolve the property ownership with WSDOT at no cost to the City; 4) create a restoration team to include local scientists like Joe Scordino and State agencies; 4) create a private sector funding team that could include citizens like Diane Buckshnis and Jack Faris who many State and Federal legislators and agencies heads met during the WRIA 8’s Ballard Locks pilot project; 5) create Governor’s team to keep apprised of what could be a monumental example of private sector funding local environmental needs; 6) ensure donors know the Cityof Edmonds has an already established restricted funding depository (fund #017) for marsh restoration.

Objectives:

This PPP would have a potential consortium of members or representatives from the Governor’s Office, DOE, WSDOT, Chevron, WRIA-8, Tulalip Tribes, the City and Port of Edmonds, the town of Woodway and any other stakeholder or key players.

The key to all of this is willingness of all parties to think outside the box and tap into that private donor base since many citizens of Edmonds are all in for seeing this project happen. Time will be needed to pull the teams together for the varying tasks as scientist will need to model for the threats of excess stormwater and sea-level rise occurring faster than anticipated. The creation of this historic partnership may spur other private donors to assist other Cities in restoration projects as the environmental impacts from density and growth are not being considered and Federal and State funding remains focused on growth and density.

Future generations need this to happen as well as our Orca Whales and salmon.

As noted, DOE has provided their clean-up plan and accompanying documents that are required per MTCA process (<https://apps.ecology.wa.gov/cleanupsearch/site/5180>) and an open house was held in September and comments are due by November 26, 2024. Please provide comments to support the need for a new scenario #7 and hold Chevron accountable for its' financial responsibility.

Prepared by Diane Buckshnis

Edmonds City Council and WRIA 8 Salmon Recovery Council - 13 years: Grant Funding Committee – 14 years

Puget Sound Partnership Salmon Recovery Council - 8 years

Response

Thank you for your comment and sharing a framework for a private public partnership to support marsh restoration. WSDOT has never refused to replace their stormwater pipe at the Site. WSDOT has advocated for the removal of contaminated soil exceeding cleanup levels at the Site. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [D. Feasibility Study Alternatives](#), and [G. Marsh Restoration/Habitat Protection/Salmon/Fish Passage](#).

40. Comment from: Marjorie Fields, 11.07.24

The Ecology recommendation regarding cleanup of the Unocal property gives far too much weight to cost, more than all other criteria combined. Human impact, environmental impact, and citizen concerns about them must be considered at least equal to cost. Citizen comments at the public hearing clearly expressed outrage at the idea of protecting Chevron corporation from cleaning up the mess they made, and instead leaving it to future owners.

Additionally, state laws would be violated if Ecology's recommendation for Option 6 was implemented. Ecology guidance as well as state law requires preventing or minimizing future and present release of hazardous substances into the environment. Permanent solutions are needed, not plans based on rules about not disturbing capped hazardous areas. Permanent solutions are needed to keep high tides and storms from disturbing buried contamination and moving it to surface water. Anticipated sea level rise increases these dangers.

State law also requires that cleanup decisions be based on future use of the land. Different outcomes are needed for restoring salmon and other wildlife habitat to the area than if the previous plan for a ferry terminal hadn't been rejected.

Updated Ecology guidelines are clear that planning is to be done with consideration for impacts of climate change such as sea level rise, more severe storms and flooding. Permanent cleanup solutions are needed to meet this guideline, cap and cover would be a disaster waiting to happen.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [B. Model Toxics Control Act Cleanup Regulation](#).

41. Comment from: David Richman, 11.08.24

See the original comment in Appendix A (PDF).

I am glad that we are finally coming to the end of the planning period. This cleanup has obviously taken longer than originally anticipated and is still not complete. Chevron has the responsibility under Washington state law to finish the cleanup to match the final intended use. That use should be as a part of a major wildlife habitat, restored natural estuary, and salmon spawning stream. In the Edmonds Marsh we have a gem and a unique opportunity to restore it to some level of its normal functioning. In a time when we are facing climate change, pollution, a biodiversity crisis and a need for green spaces for recreation, the Marsh/Estuary offers a chance to help, in a small way, the restoration of Puget Sound. If a number of such wild lands along the Sound are restored (and several already have or are in the process, see: Nisqually and Skokomish deltas, Leque Island, Wiley Slough, Fir Island Farm, and properties of the Skokomish Indian Tribe) then we are truly restoring the Sound, not just giving restoration lip service.

I believe that if the City of Edmonds and other entities involved had the restoration as a goal that the money could be raised through grants and donations, as well as money already set aside to eventually get the restoration done. If we are serious about conservation and environmental concerns, this would be an important commitment to that end.

As a field biologist I served on the science subcommittee of Save our Marsh. I have been taking photographs of the biota of the Marsh for over five years. Among other organisms I have documented over 100 species of insects and arachnids from the Marsh and I believe that this is at best 10-20% of the actual number. These serve as part of the food web basis for birds, fish, and other arthropods. The recently revised list is attached. I have also observed over 110 species of birds at the Marsh (according to Ebird, over 200 species have been reported to them from the Marsh), many of which have been seen to fly in and out of the Unocal area.

See Appendix B: A REPORT ON THE INSECTS AND ARACHNIDS OF EDMONDS MARSH

Response

Thank you for your comment and information on the observed biota and birds at the marsh. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

42. Comment from: Stephen Lacy, 11.09.24

I think it Essential to do a complete cleanup of the Unocal site. The people of Edmonds have consistently supported the restoration of the Edmonds marsh, including recent herculean efforts by volunteers to clean up Shelleberger Creek. In order reconnect to the marsh to the sound it will be necessary to rejoin the existing marsh with the Unocal site. If there are remaining pollutants on the site that are simply capped this won't be feasible. Surely there is an option between merely capping the containment and complete excavation.

The Chevron corporation created the mess and presumably profited from the use of site. They should take responsibility and pay for the cleanup, not leave it to the citizens of Edmonds.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [D. Feasibility Study Alternatives](#), and [G. Marsh Restoration/Habitat Protection/Salmon/Fish Passage](#).

43. Comment from: Joan Smith, 11.09.24

Please require Unocal to completely and thoroughly clean up its damage to the environment in this vicinity. The Marsh is sensitive and important to salmon recovery. Having this area restored would enable projects to go forward that would benefit the public use of the lands and expansion of the Marsh capacity.

Response

Thank you for your comment. Please see Summarized Topical Response [Topic G: Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

44. Comment from: Marlys Chandler, 11.09.24

I do not believe capping the remaining pollution is adequate mitigation. My husband's family has a cabin near Skykomish, and we saw how pollution can seep through soil into nearby waterways. For future safety, it must be removed now, not covered. Edmonds Marsh is sensitive habitat, and the water quality in that area of Puget Sound could also be impacted.

Thank you.

Response

Thank you for your comment. Groundwater at the Site is monitored quarterly to ensure pollution is not transported to surface water. All remedial alternatives considered in the

Feasibility Study protect humans and environmental receptors from coming in contact with contamination.

45. Comment from: Nancy Johnson, 11.09.24

Cleaning up after yourself is a shared value and legal precedent for individuals.

Corporations have received trillions of our dollars and freely polluted for many years. We are collectively paying - again - for their irresponsible actions which have resulted in the climate crisis including air, water and land pollution.

Chevron must completely clean up the Unocal Edmonds Bulk Fuel Terminal 0178 site. Don't let them off the hook.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

46. Comment from: Nick Maxwell, 11.09.24

Chevron needs to be held to the same standards as everyone else. If I change my oil at my home and dump the used oil to seep into the ground in my backyard, when I'm caught, I have to clean up the toxic mess I made. It doesn't matter if it's inconvenient or costly to me. If I pollute, I have to clean up my pollution. It doesn't matter if I sell the property and move away. I still have to pay to clean up my mess. Same goes for Chevron. They polluted the ground. They need to clean it up.

Chevron COULD take advantage of natural processes that will consume the pollution: to do that, they need to retain ownership of the property and maintain it in a way that prevents pollution of neighboring land until the natural processes are done. I gather that will take about 200 years. So they can hold the land as a natural wildlife refuge and pay taxes on it for 200 years. Whatever it takes to clean up their mess.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

47. Comment from: Anonymous, 11.09.24

I want to see clean up of any remaining contamination in the lower yard. And the property to be used as a restored estuary reconnecting the Edmonds Marsh to Puget Sound. This will be good for the city of Edmonds, tourism, and our environment as a whole. Look at the Meadowdale estuary restoration a bit north of us! Even on bad weather days, people are hiking/walking the trail there constantly and they are encouraged by what they see. So, we know it's possible. Thank you.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration/Habitat Protection/Salmon/Fish Passage](#).

48. Comment from: Mike Benoit, 11.09.24

Chevron made the mess - they should clean it ALL up. Not simply cover the mess and walk away. To conclude this process without accurate soil samples is short selling this community. This site in this coastal location is extremely rare and should be as pristine as possible for our children's children's children to use long after we, and Chevron's quarterly profitability statements, are long gone. Hold Chevron accountable to do the right thing.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [E. Updated Soil Sampling](#).

49. Comment from: Brittany Dean, 11.09.24

Hello, I use the area adjacent to this part of the city often and I dream of what it can be. Eventual full restoration with return to an estuary site would be ideal to preserve the biodiversity as well as the safety of this part of our city. I am concerned with the plan to cover the Unocal site as this does not bring progress towards full habitat restoration.

If a full clean-up is not feasible currently, please consider at least something that gets us closer to that goal. Chevron made this mess and they should take the responsibility of cleaning it up.

Response

Thank you for your comment. Please see Summarized Topical Response [D. Feasibility Study Alternatives](#) and [G. Marsh Restoration/Habitat Protection/Salmon/Fish Passage](#).

50. Comment from: Gayla Shoemake, 11.09.24

Dear Department of Ecology,

As a long time resident of Edmonds, and a great admirer of our place on the water, I have enjoyed the Marsh immensely. While there have been some improvements, they have not restored the Marsh to its original status. As I have read about this specific situation, and as a person committed to the environment, I strongly believe that those who create problems for the environment should be the ones who pay for it, it is clear to me what should be done in this case. Unocal-Chevron are the ones who created the contamination, so they must be the ones to clean it up- completely, covering it up is not cleaning it up. In order for it to be returned to its estuary status, it is essential that the Marsh be completely cleared of contamination so that fish and other wildlife and vegetation can be safe and productive in the area. As our representative in this matter, it is your responsibility to insist that Chevron return the Marsh to its original, natural state. I strongly urge you to demand that since they are the ones who caused the contamination, they must fulfill their obligation to return to us a healthy, non-polluted Marsh, as it was before they polluted it.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

51. Comment from: Robert Maier, 11.09.24

1. Chevron Corporation made the mess — they should clean it up.
2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study.
3. A more accurate cost-benefit calculation is needed.
4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.
5. Public Concern has not been properly weighted.
6. A cleanup plan between Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered.
7. Tribal rights and interests must be included in the feasibility study.
8. Updated soil samples are needed before the feasibility study is completed.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

52. Comment from: Neil Gilham, 11.10.24

See the original comment in Appendix A (PDF).

Neil Gilham - Comments on Unocal Edmonds Bulk Fuel Terminal 0178

First, I want to thank Ecology for the work they do in fulfilling the mandate to “protect human health and the environment” in accordance with the Model Toxics Control Act Regulation (MTCA). On the flip side, Chevron and their consultant Arcadis have missed the mark for several reasons that I’ll touch upon. From a high-level view, my impression about the Public Review Draft Final Feasibility Study Addendum (FS) is that it reads to me like “let’s frame the DCA for the outcome we really want and then we can dust our hands off and walk away” while in the future, others must deal with the contamination left in place, only protected by piece of paper known as a “covenant” and, well, the five-year review thing that Ecology does. The desire of most Edmonds citizens is to have all contamination removed and have the Marsh restored to a functioning estuary. This is the only reasonable, practical, and permanent outcome.

The FS selects Alternative 6 as the preferred alternative. Alternative 6 includes the following elements:

- Continued operation of the dual-phase extraction (DPE) system for one year following optimization.
- Installation of an engineered cover system.
- Contingency Plan (or plans, depending on the number of contingencies that occur)
- Environmental Covenant

Alternative 6 is fraught with “if this, then that” contingencies. Is Alternative 6 an Interim Action or is it a permanent cleanup action? How many contingencies can one lump on to Alternative 6. Is there an end to this cleanup action? What is the expected timeframe for completion? Does the disproportionate cost analysis (DPA) consider these contingencies and the seemingly never-ending timeframe?

The DPA system has apparently not functioned as intended. The DPA system has operated only 30 percent of the time during its five years of operation. Does Ecology have confidence that further and continued operation of the DPA system will be more effective in the future considering its limited success so far?

Figure 19 in the FS depicts approximately 22 separate contaminated soil areas for the installation of an engineered cover system. Most of those areas are outside of the WSDOT storm drain line or away from the base of the Point Edwards slope, areas with inherent geologic hazards (e.g. slope stability). Why can't these easily accessible outlying contaminated soil areas be excavated instead of capped?

If a functioning estuary is restored in the future, some of remaining 22 contaminated soil areas could require excavation and a reopening of involvement with Ecology. In addition, the cost to remove the capped contaminated soil would fall on a future landowner. This is an unreasonable burden on future landowners with a goal toward estuary restoration.

The 22 capped soil areas would be vulnerable to climate change induced sea level rise that could disrupt the covers and remobilize the contamination. Sea level rise will impact the long-term effectiveness and protectiveness of the proposed engineered covers under Alternative 6. Climate resilience must be separated out as an explicit factor in the DCA when evaluating the long-term effectiveness of a cleanup action alternative.

The Unocal Site is underlain by a mix of unconsolidated sand, silt, clay and sand/gravel fill. The water table is high. These saturated materials are subject to liquefaction during a large earthquake which could disrupt the engineered covers, including the emergence of sand boils through the contaminated soil.

The FS describes the WSDOT storm drain line condition as "adequate." This is not a very reassuring description of the pipe's condition. The pipe is over 50 years old and likely near the end of its useful life. The City of Edmonds has commented in detail on the concerns with the aging pipe and the contaminated soil that surrounds it.

My hope and desire, along with my fellow citizens, is that the Unocal Site as part of the Edmonds Marsh system be restored to a fully functioning estuary with connection to Puget Sound. Removal of all or most of the remaining contamination is a critical step toward achieving that goal.

Thank you for the opportunity to comment on the Unocal Site FS.

Sincerely,

Neil R. Gilham, LG

Response

Thank you for your comment. The contingency action of excavation near MW-101 and/or MW-518 should apply to all cleanup alternatives, as no cleanup alternatives propose excavation in those areas as the primary cleanup. The FS will be updated to include targeted excavation near MW-101 and MW-518 as a potential contingency for all alternatives.

The DPE system was effective at cleaning up mobile contaminants dissolved in groundwater in the original treatment area around the WSDOT stormwater pipe. There is some uncertainty that the DPE system will be effective in the areas along Willow Creek, where the system was expanded in 2019. A contingency was added to the Feasibility Study due to this uncertainty.

Ecology recognizes that the DPE system has not fully remediated soil and groundwater to below CULs. The remediation system was effective at reducing lighter-end petroleum hydrocarbons in soil and groundwater at the Site. Groundwater concentrations in monitoring wells near the WSDOT stormwater line no longer significantly exceed Site CULs that are protective of both groundwater and surface water. COC concentrations in groundwater delineation wells along Willow Creek show fluctuating values that sporadically exceed the CULs. Recent soil sampling identified remaining source mass directly upgradient of these wells in an area that was not previously excavated. As part of an additional remedial alternative, this area will be excavated to address the remaining soil impacts and the associated groundwater exceedances. Unocal will propose Alternative 7 in an additional FS addendum. This alternative will include excavation of impacted soils above their respective CUL/PSV outside of the WSDOT stormwater easement, while proposing an Engineered cover system over the soils within the WSDOT utility easement. Soils under the cap and utility easement will be addressed in a revised Contingency Plan, which will provide for removal when WSDOT repairs or replaces its stormwater line. Continued operation of the DPE system is not expected to reduce remaining soil contamination to below CULs. The FS Alternatives have proposed excavation, Environmental Covenants, and/or monitored natural attenuation to address remaining soil contamination.

Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Regulation](#), [D. Feasibility Study Alternatives](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [H. Future Planning and Long-Term Risks](#), and [I. Washington State Department of Transportation Stormwater Pipe](#).

53. Comment from: Bernie Busch, 11.10.24

After reading the comments and suggestions that have been presented, there is little I can add other than I am strongly in support of The Department of Ecology NOT allowing Unocal to abandon their obligation to restore the marsh property that they have contaminated over these many years.

It is obvious to me, and it appears a majority of the community, that Option #6 would possibly allow Unocal to slip out of their obligations and that future liabilities would have to be borne by others.

It is obvious to most people who have studied the situation that Option #4, to completely restore the marsh area that has been contaminated, is the only truly ethical choice. Unocal knows it. You know it and the community you are in a position to protect knows it.

PLEASE DO THE RIGHT THING AS THE AGENCY RESPONSIBLE FOR PROTECTING THE ECOLOGICAL HEALTH OF OUR STATE. You are aware that our state's legal department is not afraid to stand up for our state in court to protect us from powerful financial giants. The attorney general's office does it very effectively. They have your back, and you have been given great information from our citizens to bolster your decision to hold Unocal to account and have them proceed under Option #4 and finish repairing the damage they have caused.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

54. Comment from: Sherry Willis, 11.12.24

Cleanup must be thoroughly and entirely completed by the company that created pollution - or bought it from the polluters. It is immoral to pass the responsibility to taxpayers. Unocal must do a total cleanup - no more hiding it so future generations of users are at risk.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

55. Comment from: Kate Lunceford, 11.12.24

I urge you to prepare a new Disproportionate Cost Analysis and require Chevron to clean up the property to a level closer to how they found it, which will enable a future landowner to move forward without incurring additional cost. The value of saltwater marshes to the health of sea life and the community must be considered. The cost of new exposure from flood damage or sea level rise must be added to the analysis.

Response

Thank you for your comment. Please see Summarized Topical Response [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

56. Comment from: Winona Kim, 11.12.24

So this is my understanding of Chevron's CEO's compensation \$26.5million in 2023. The cost to clean up the Edmonds marsh estimated at \$11 million. So please, there's really NO excuse to allow Chevron to get away with a bandaid on the project. It's less than HALF their CEO's income to PAY for an area that contributed profits to them!!! This is crazy!!!!

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

57. Comment from: Rachel Maxwell, 11.12.24

Chevron's profits in 2023 were \$4.5 Billion. We must hold them accountable for the damage done to the property in Edmonds by requiring they clean it up. This cap and cover strategy is just a band aid on the problem. It must be cleaned up because we will have sea level rise and it won't matter what's "covered and capped". We must most hold these wealthy corporations accountable for the damage they've done and by doing so, protect our collective future.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

58. Comment from: Alice Owen, 11.12.24

Updated soil samples are needed for the Edmonds Marsh area that has been polluted by Chevron before the sensibility study is completed.

Chevron should be responsible for any costs involved.

Response

Thank you for your comment. Please see Summarized Topical Response [E. Updated Soil Sampling](#).

59. Comment from: Tia Scarce, 11.12.24

Chevron should absolutely be required to fully clean the site so that future restoration work can be accomplished without working around continued contamination. A healthy estuary is the goal--nothing short of full removal of contaminated soils is acceptable. Unocal/Chevron reaped the benefits of the site; they must pay the costs of remediation, not the citizens of Edmonds or the wildlife who call Puget Sound home.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

60. Comment from: Rita Ireland, 11.12.24

To caring colleagues:

Perhaps it was because I was raised on a fertile Iowa farm where my mom and dad took good care of our soil -- their culture and wisdom was, "Just get it done, but do it right. Get help from other neighbors if you need to and do the same to help them. If need be, invest extra money now -- you'll get your rewards later and feel great about it." I can still hear my dad.

A collective pride swells.

In this case, opening the Edmonds Marsh for salmon to return to spawn upstream from the Puget shores through the a revitalized estuary, is going to take innovation and scientific /community support to have an open channel and keep contamination to a minimum.

I can picture the salmon weaving up through seaweed and eel grass, fresh and sea water and sun, creating a fertile, balanced ecological soup, as in the years of the Coast Salish.

It makes no sense to cover the channel.

We live in startlingly dismal ecological times in our world, so it seems to be a great time to re-spark our local shore environment. We can provide our future generations with a pride that this project was finally completed and done right.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration/Habitat Protection/Salmon/Fish Passage](#).

61. Comment from: Marilyn Boyd, 11.12.24

Dear Ecology,

I lived in Everett when the Kimberly Clark property was scheduled for 'clean up'. Despite the wishes of locals for restoration, the city council opted for minimal standards. When I visited Everett recently, I was gobsmacked to see containers stacked up high on the property. This should not be the fate of the Edmonds Marsh!

"The Edmonds Marsh is one of the few urban, tidally-influenced saltwater estuaries remaining in the Puget Sound area.

The Edmonds area including the Marsh was historically used as a fishing village by the Coast Salish Native Peoples to sustain their livelihoods including fishing, shellfish gathering, and harvesting of plants to make clothing, mats, and baskets. This tradition continues today under tribal fishing rights along the Edmonds waterfront. "

The Edmonds Marsh 'clean up' should not be 'hiding the mess', and using it for storage, but restoring the marsh back to the Salish Sea and to create salmon safe environment.

Chevron is responsible and must be held to account for restoration.

Thank you,

Marilyn Boyd
Seattle WA

"Let us be the ancestors our descendants will thank" ~ Winona LaDuke

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [C. Tribal Rights and Interests](#).

62. Comment from: Karen Guzak, 11.12.24

Chevron made the mess in the bulk terminal, and should clean it up. These oil companies get the benefit of federal tax breaks and make huge profits every year. Demand that they restore the estuary to mitigate climate changes and return this place to nature and to the people in this region who care so much about our home.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

63. Comment from: Aleksandar Babic, 11.13.24

So, let me get this straight. Cleanup is too costly for the polluter? The polluter had US\$ 200 billion dollars revenue in 2023. The polluter is Chevron corporation. Now I understand that doing business has risks and mitigations sometimes might fall on governments, businesses and individuals. However, accountability matters. Chevron made a mess and they should fix it.

There are so many things in this case that need to be considered including indigenous rights, risk of ongoing climate change / sea level rise. Also, I understand that more accurate cost-benefit calculation is needed from quantitative and qualitative estimates stand point and of course the use of best professional judgment. However, think about where we live, the earth we stand on and how much this is important to all of us. Thank you

Aleksandar Babic

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), and [C. Tribal Rights and Interests](#).

64. Comment from: Buck Stewart, 11.13.24

It was Unocal's decision, in 1921, to cover the Marsh with landfill for an oil terminal and asphalt plant. From then until 1991, Unocal, then Chevron, freely contaminated this land, right in Edmonds' backyard, with toxic petroleum and heavy metals — while reaping the profits.

The citizens of Edmonds are willing to do the work to restore the Marsh, once the toxins are removed, for future generations. But the EPA should not allow Chevron, who reaped the profits from poisoning the Marsh, to walk away now, leaving future expenses, and risks as well, for us to bear. Chevron has the moral responsibility to make whole again the land they polluted for 70 years.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

65. Comment from: Jim Skadan, 11.13.24

See the original comment in Appendix A (PDF).

I have read the "Comments to the Revised Draft Feasibility Study 2024" prepared by our Point Edwards Unocal Review Committee and approved by our Point Edwards board of directors, and I am concerned about the fact that Chevron is proposing to allow toxic waste to remain on the Unocal site. This will complicate development of a salmon recovery estuary.

I am presenting the following questions and comments about how this decision was reached.

1. Why was the Memorandum of Understanding between the City of Edmonds and WSDOT not mentioned to show our concerns and plans?
2. Why was the fact that the state legislature gave the City of Edmonds a right of first refusal to purchase the Unocal site not used to show our concerns?
3. Why was the fact there has been significant support for a salmon recovery estuary not commented upon in the Feasibility study or Addendum.
4. Why does Ecology say that the future use of the Unocal site is as an ecological habitat?

5. Why does Ecology say that they support salmon restoration but will not say that one planned use of the Unocal site is as a salmon estuary?
6. Why does Ecology say that they do not want to dictate the use of the Unocal site when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?
7. In the 2017 Feasibility study what percentage weight was given to public concerns?
8. In the 2017 Feasibility Study what weight was given to Tribal concerns?
9. What objectives were set for public concerns and Tribal rights and interests?
10. Why is there no documentation on what invitations were sent to the tribes and their responses?
11. What tribal engagement plan was developed for the Unocal site and why is it not listed in the feasibility study?
12. Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?
13. The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers billions of dollars. Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

Thank you for your attention to my concerns,

Jim Skadan
Point Edwards

Response

Thank you for your comment. Responses to each question follow:

Questions 1-6) There is a clear trend in feedback from the public indicating more weight should be placed on the concern for marsh and creek restoration. The Public Concerns section of the Feasibility Study (FS) and the weighting and scoring will be revised to reflect this concern in the final FS. The FS focuses on cleanup options for the Site for all possible future uses, which includes potential marsh restoration. Ecology does not dictate how property is used by the owner or subsequent owner – so long as that use does not impact the cleanup.

7) 12%

8) In 2017, MTCA did not require an explicit discussion on how Tribal concerns were evaluated when determining or weighing the benefits associated with each cleanup action alternative.. Currently tribal concerns are taken into account when scoring each DCA category. There is not a separate category for tribal concerns.

9) Both public concerns and Tribal rights and interests are considered when evaluating cleanup alternatives for the FS. As noted above, the Public Concerns section of the FS and the weighting and scoring will be revised to reflect the public's concern for marsh and creek restoration.

In addition, public participation is required at specific steps during the [MTCA cleanup process](#).¹⁷ The [Public Engagement Plan](#)¹⁸ outlines this process and discusses how the community can participate. To date, we've provided public input opportunities for legal agreements, interim actions, the remedial investigation, and the FS. We've also held community meetings to provide updates and answer questions. We will hold a future comment period for the draft cleanup action plan (CAP) and provide additional outreach as needed and subject to Ecology's availability of staff and resources.

Regarding Tribal rights and interests, Ecology's Northwest Toxics Cleanup Program is currently in the process of meeting with all Tribes in the region to understand their priority concerns for toxic cleanup sites. Ecology is fully committed to working with the Tribes in a government-to-government relationship to protect and manage shared natural resources. For more information, please see Summarized Topical Response [C. Tribal Rights and Interests](#).

Questions 10 and 11) Please see Summarized Topical Response [C. Tribal Rights and Interests](#).

12) While a FS needs to evaluate the cleanup technologies that may be used to clean up the Site, the alternatives cannot always include every possible combination of those technologies (in this case, every combination of spot excavations and institutional controls). That does not eliminate the possibility of a combination of technologies being selected as the final cleanup in the CAP.

13) Please see Summarized Topical Response [C. Tribal Rights and Interests](#).

66. Comment from: Sarah Boyd, 11.13.24

See the original comment in Appendix A (PDF).

I have read the "Comments to the Revised Draft Feasibility Study 2024" prepared by our Point Edwards Unocal Review Committee and approved by our Point Edwards board of directors, and I am concerned about the fact that Chevron is proposing to allow toxic waste to remain on the Unocal site. This will complicate development of a salmon recovery estuary.

I am presenting the following questions and comments about how this decision was reached.

The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be

¹⁷ <https://ecology.wa.gov/mtca-process>

¹⁸ <https://apps.ecology.wa.gov/cleanupsearch/document/145524>

enhanced. This may cost the taxpayers billions of dollars. Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

It is my hope that sufficient toxic waste can be removed so that a salmon recovery estuary can be created efficiently and cost-effectively. I appreciate your consideration of these important issues.

Regards,

Sarah Boyd
41 Pine Street #211
Edmonds WA 98020

Response

Thank you for your comment. Please see Summarized Topical Responses [C. Tribal Rights and Interests](#) and [Topic G: Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

67. Comment from: Tobey Nelson, 11.13.24

We must continue to clean up this site - and continue to fund clean up - until all petroleum and arsenic are gone

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

68. Comment from: Katrina Riippa, 11.13.24

Wouldn't Chevron benefit from being able to say they contributed to the long-term health of the local environment? Bringing back salmon increases the likelihood of the survival of local marine mammals, as well. Many PNW natives (and Native Americans) have concerns about the dwindling salmon populations and its effect on the marine food chain.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [C. Tribal Rights and Interests](#).

69. Comment from: Mona Carter, 11.14.24

DOE,

It is imperative that chevron/unocal be held accountable for the soil contamination at the designated site(s). They reaped the financial benefit of the asphalt production site and should not be allowed to walk away from a total clean-up of the site. An alternative, less expensive modified clean-up is not acceptable. Chevron has a social responsibility to do the right thing and be held to the same standard that would be expected of other companies who pollute the earth.

Mona Carter

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

70. Comment from: Susan Finley, 11.14.24

Don't let Chevron cap and cover instead of removing the pollution remaining on the former Unocal bulk fuel terminal. A more accurate cost-benefit calculation should be developed, including likely environmental hazards from climate change and sea level rise, so that truly informed Public Concern can be solicited. Tribal rights have got to be included in all phases.

Response

Thank you for your comment. Thank you for your comment. Please see Summarized Topical Response [E. Revised DCA/FS](#).

71. Comment from: Malcolm Cumming, 11.14.24

The Edmonds Marsh is a significant environmental asset to the waters of Puget Sound. The best solution for it's long term contribution to the ecosystem health of both the marsh itself and to Puget Sound is to remove the contaminated soils. Simply burying them will only temporarily prolong the time it takes for them to reach the surface and continue their damaging effects. Rising sea levels will certainly hasten the day that buried contaminants are released again. The contamination costs should be borne by the existing wealthy corporation (Chevron) that knowingly created and dumped them in the first place.

I live on Whidbey Island where much marshland has also been isolated from Puget Sound waters (e.g., the Maxwellton Watershed and Marsh). Whether or not the Maxwellton drainage

system is repaired, it is critical that other watersheds around Puget Sound are restored - particularly the Edmonds Marsh.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [H. Future Planning and Long-Term Risks](#).

72. Comment from: Cathleen Dalmeida, 11.14.24

I believe that polluters should clean up their messes. We need to hold corporations who profited accountable for cleaning up. The following are additional comments.

Chevron made the mess — they should clean it up.

Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study.

A more accurate cost-benefit calculation is needed.

Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.

Public Concern has not been properly weighted.

A cleanup plan between Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered.

Tribal rights and interests must be included in the feasibility study.

Updated soil samples are needed before the feasibility study is completed.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

73. Comment from: Elaine Martin, 11.14.24

Unocal/Chevron needs to complete the entire cleanup including contamination beneath the Pipe. It is their responsibility and they have the funds to do it. Option 6 is not doing so. The goal should be to clean up the site as well as under the Pipe so that the Edmonds Marsh can be restored to have clean access to the Sound for salmon to be able to enter the Marsh and spawn.

I have lived in the PNW my entire life and in Edmonds more than 7 years. The Edmonds Marsh is one of the last natural estuaries and must be saved with a full clean up on the Unocal site to make that possible for the long term future. Huge volunteer efforts continue to open water flow on Shelleberger Creek that feeds into the Marsh. This shows the immense concern and dedication to our Environmental future here..... now Unocal need to fulfill their obligations and responsibilities for their clean up.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

74. Comment from: David Jones, 11.14.24

I moved to Edmonds in 1961. My quality of life is directly impacted by the environment in which I live.

The land that Unocal used for its bulk fuel storage and distribution site in Edmonds was once healthy, but Unocal poisoned it by allowing chemicals to leach into the soil and water.

Now that Unocal is no longer using this site it doesn't want to be held responsible for restoring the health of that property.

The Department of Ecology, acting on behalf of the citizens of our state, must hold Unocal to the same standard of behavior that a responsible parent expects of a wilful child--clean up your mess. Make your bed. Hang up your clothes. Don't expect someone else to clean up after you.

There is no logic to permitting Unocal to walk away from the fuel transfer site in Edmonds until it has cleaned up its mess. Allowing Unocal off the hook for the cost of this work just means someone else will be required to clean it up, and someone else will be required to shoulder the cost of that project. There is no logic in that, only irresponsible oversight of this land.

Is the Department of Ecology willing to take on that cost and effort? It should not--that would be a gift of public funds to Unocal.

As a long time resident of Edmonds and someone who is proud and protective of our natural environment, I request that the Department of Ecology require Unocal to restore this property to its clean, natural state. That requires more than just covering up any contamination with a layer of dirt. It means completely cleaning the land and water, restoring both to their original, natural condition.

Unocal profited from the use of this land. They now must understand that maintaining a clean worksite and leaving property in its natural state is an expected part of doing business in our state.

That is what I expect my Department of Ecology to require of Unocal and any other business. To permit a company to get away with anything less is irresponsible and unconscionable.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [H. Future Planning and Long-Term Risks](#).

75. Comment from: Julie Navarro, 11.15.24

Please make the oil company pay . It shouldn't be the tax payer ! Hold them accountable !

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [H. Future Planning and Long-Term Risks](#).

76. Comment from: Judy Triggs, 11.15.24

I want the contamination removed so the property can be an estuary reconnecting the Edmonds Marsh to Puget Sound.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

77. Comment from: David Matthews, 11.15.24

I believe it is incumbent upon the Chevron Corporation who made the mess to clean it up.

We need to ensure we have a more accurate and current cost-benefit calculation and feasibility study that include environmental hazards from climate change and sea level rising.

And perhaps most importantly, Tribal rights and interests must be included in the feasibility study.

Response

Thank you for your comment. Please see Summarized Topical Responses [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

78. Comment from: Manya Schilperoort, 11.15.24

Please insist that Chevron be required to follow alternative plan #4 and completely clean up the soil they helped contaminate while enjoying such high profits. The Edmonds Marsh is a precious natural resource that many birds and creatures rely upon. It is one of the few remaining such places along the west coast of the United States, and thus should be treated with utmost regard for the natural habitat it uniquely creates.

We need Chevron to help us restore the marsh rather than leave the cost and work to current and future residents of Edmonds, who never participated in that contamination in the first place.

If we continue to refuse to hold these companies responsible for the havoc they wreak, they will only continue to do so again in other places, affecting untold people and wildlife - all while continuing to reap their profits.

I'm not against a company earning profits. That's their goal. But at the cost of generations of humans and wildlife? No. It must end.

Thank you.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

79. Comment from: Suzanne Cunliffe, 11.15.24

I was taken aback to learn that Chevron Corporation could not afford to clean up the mess they made, especially because their earnings in November 2024 are \$4.25 billion. The hope of this community is that we can restore the estuary and reconnect it to Puget Sound. We believe a revised feasibility study with updated soil samples should address the reconnect as well as Tribal rights and interests. We are not asking Chevron to do anything more than to clean up the site in environmentally safe fashion that takes into account the problems of climate change, and foreseeable hazards that have not been reflected in the current feasibility study. This area means a great deal to the population of Edmonds, our home. Please take all comments by the citizens seriously. Consider that we envision a future when wildlife can move from our estuary

to the Puget Sound. Pretend your grandchildren live and play and learn here and create a legacy that will make a safe place for generations.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [C. Tribal Rights and Interests](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

80. Comment from: Clara Hsu, 11.15.24

These are just a few amongst numerous reasons the plan needs further revision:

Chevron made mess - Chevron should clean the mess!

Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.

Public Concern has not been properly weighted.

Please include and address these points in the plan.

Clara Hsu
Edmonds

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

81. Comment from: Jane O'Dell, 11.15.24

After attending several public meetings on the subject of the cleanup of the Unocal property in Edmonds I am particularly appreciative of the challenge you face in resolving this matter. While some of the comments may seem redundant at this point that should not detract from their importance.

1. Unocal used the property in ways that have left toxic residue, which is harmful to biological forms (plants, animals, humans) and while the Model Toxic Control Act has provisions for cost benefit analysis, it is also clear that the cleanup must anticipate future use of the property.

Perhaps a different use was anticipated when the contract for sale was originally negotiated, but that is not relevant now. MTCA requires that future use be considered, and any future use can be expected to affect living things at some point. This is a problem Unocal created; they are not being victimized. They operated a for-profit activity in a way that left significant levels of toxicity behind. As a resident of Edmonds living less than a quarter mile from the site I believe it should be cleaned up.

2. The MTCA allows the cost benefit to be considered in determining the level of cleanup necessary, but the proposals we have seen to date lean heavily on some areas of cost and fail to note others. The description of public concern, for example, was described as concern only for noise and dust created by the cleanup and ranked quite low, while I and many other citizens are more concerned with the final outcome. It seems appropriate to have a more transparent way of weighting the considerations. Moreover, the costs and benefits are specified by Chevron and are reduced to the contents of two plans (Alternative 4, which involves removing all remaining contamination, and Alternative 6, which calls for capping contaminated areas). The "future use" also under discussion, a restored estuary and wildlife sanctuary, would benefit from Alternative 4 and that is preferred, but Alternative 6 should not be the only alternative under discussion.

3. Alternative 6 is, on its merits, flawed. Capping the contaminated areas is only a solution to the extent that the caps are not disturbed, but the Unocal parcel is in the flood zone and a seismic hazard zone; it is extremely likely that the caps will be disturbed, allowing contamination to penetrate the rest of the Marsh and even escape into Puget Sound. This is not an acceptable solution and needs reconsideration.

We have an opportunity to get this cleanup done right: a safer result, and maybe at an intermediate cost somewhere between the price tags assigned the alternatives by Chevron. Please give due weight to the concerns of the residents, and let's undo the damage inflicted by Unocal's operations.

Thank you, and for all the effort you have put into engaging with the people of Edmonds on this issue!

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [D. Feasibility Study Alternatives](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [H. Future Planning and Long-Term Risks](#).

82. Comment from: Joyce Behncke, 11.16.24

Don't let Chevron pass the buck for what they did. They abused and profited from that land for years and now, when it comes to paying the piper, they want to walk away?!? No way! It's their responsibility to clean up their mess. They made a big one and it's expensive. It devalues the land to leave it for the next buyer.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

83. Comment from: Tom Mayer, 11.16.24

History teaches us that the coverup is always worse than the crime. That is what Chevron Corp. proposes to do—cover up the remaining contamination in the Edmonds marsh. Please do NOT allow this to happen. Require Chevron to excavate all of the remaining contamination and restore the marsh to estaurial condition as it was originally.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [H. Future Planning & Long-Term Risks](#).

84. Comment from: Sarah Boyd, 11.16.24

See the original comment in Appendix A (PDF).

I also think Unocal should be responsible for the complete, mode expensive cleanup. The land must be returned to the public in as fine shape it was in when Unocal Started to use it.

Sarah Boyd

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

85. Comment from: Julia Jordan, 11.16.24

I'm strongly against the plan to let Chevron "cap and cover" the contamination near Edmonds Marsh instead of actually cleaning it up. Chevron is the one who caused the mess, so they should be the ones to fix it. I am a preschool teache and I teach my students about accountability and reciprocity, apperently those things don't matter anymore once you are a multinational corperation. If chevron can make millions off of destroying lives and ecosystems, they AT LEAST need to have some accountability and pick up the bill for the ecocide caused by their bulk fuel terminal and an asphalt plant.

The site should be restored as an estuary that reconnects the marsh to Puget Sound, which would provide critical salmon habitat, and this future use needs to be part of the cleanup plan, as the law (WAC 173-340-351(6)(a) and 173-340-708(3)) says. Right now, the cost-benefit analysis doesn't look at the long-term benefits of cleaning up the site fully (things like habitat restoration and stopping further contamination from climate change and sea level rise).

The public—especially the City of Edmonds and the Tulalip Tribes—wants a more thorough cleanup, and their concerns need to be taken seriously. Soil samples must be updated before moving forward, since the old data may not reflect the current situation, and Tribal interests in restoring salmon habitat need to be part of the conversation.

To my understanding the land that Chevron used for a bulk fuel terminal and an asphalt plant was ceded to the United States government in the Point Elliot treaty of 1855 under the condition that the several tribes that lost millions of acres of their ancestral land could have "The right of taking fish at all usual and accustomed places" as well as the right to hunt, gather, and trap. Building the plant and terminal violated those treaty rights in the first place, and refusing to fully rehabilitate the area or return the land to the tribes adds insult to injury.

This land gave Chevron profits for around 6 decades, but the ecological and cultural devastation will last for much longer if Chevron is allowed to do the bare minimum in terms of clean-up.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [C. Tribal Rights and Interests](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

86. Comment from: Diona Jaslow, 11.16.24

I believe Chevron (Unocal) has responsibility to finish the clean up effort due to the many years they poisoned our land and marsh. They make billions in revenue and can afford to be held ultimately accountable for all costs. It should not be passed onto future land owners.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

87. Comment from: Julia Winchell, 11.16.24

The Edmonds Marsh must be cleaned up, not just capped over! Chevron made the mess. Chevron needs to clean it up. Chevron and DOE saying it is too costly to clean up is not a reason to just cap it. Too costly for Chevron?? Seriously? What about the cost to Puget Sound, salmon habitat, and our environment? If you allow this to just be capped over, THAT decision will be too costly. Chevron makes lots of money each year. They need to be held accountable for ALL the damage they caused to the Edmonds Marsh.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

88. Comment from: Lesley Boyland, 11.17.24

Clean up, don't cover up. That's it, plain and simple. We need to do everything in our power for the health of the planet, so please use your power.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

89. Comment from: Jerry Capretta, 11.17.24

My son tore down an old house that resided on a lot he bought. He had to deal with \$80,000 of home heating oil contamination. When gas stations get removed they are required to replace the contaminated soil. Why should a major chemical corporation be exempt from cleaning up their oil tank mess completely? Why should future generations of our children be contingently financially liable for what Chevron has done? The fact that the lethal pollution is in the marsh and possible (probable?) transmission to Puget Sound compounds this issue. Make Chevron clean up their mess now, once and for all, please!

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

90. Comment from: Eric Adman, 11.17.24

1. Chevron Corporation obtained significant economic gains by their use of this site, and it is hard to argue that they don't have the means to pay for cleanup. Chevron should be required to clean up the site.

2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study.

3. A more accurate cost-benefit calculation is needed.
4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.
5. Public Concern has not been properly weighted.
6. A cleanup plan between Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered.
7. Tribal rights and interests must be included in the feasibility study.
8. Updated soil samples are needed before the feasibility study is completed.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

91. Comment from: Derek Benedict, 11.17.24

I grew up near the UnoCal oil tanker-field, and I want them to clean up the mess that they created. AND they must not have taxpayers pay for it!

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

92. Comment from: Linda Wilson, 11.17.24

I'll make this short and to the point.

Chevron created the mess and is morally and should be legally responsible for the clean up. They should not be able to do a partial clean up endangering people and animals.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

93. Comment from: Elena Giorgi, 11.18.24

I am a resident of Snohomish county and I am writing in support of the complete clean up of the contamination on the property adjacent to the Edmonds Marsh and the restoration of the estuary to reconnect the Edmonds March to the Puget Sound. The full clean up and reconnection to the sound will restore the estuary and provide precious and endangered habitat to native species like herons and salmon. Covering up the contamination, rather than full removal, would not only prevent the restoration of endangered habitat but it would also pose new and unknown risks due to sea level rise and climate change. A full clean up is an investment in the future and Chevron owes it to the residents of Edmonds.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#) and [B. Model Toxics Control Act Cleanup Regulation](#).

94. Comment from: Shirley Oczkewicz, 11.18.24

It makes no sense to me to allow Chevron to cap the contamination instead of removing it. The reasons against capping:

1. This area is at sea level and is subject to earthquakes and sea level rise which could release capped contamination.
2. This is Chevron's contamination, so Chevron should continue to clean it up until the land is safe for its future use as a salmon-safe estuary.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#) and [B. Model Toxics Control Act Cleanup Regulation](#).

95. Comment from: Maureen Hayden, 11.18.24

Chevron UnoCal must be held fully accountable for complete clean up of the site. This means removing toxic soil, by products and all remaining polluted material their operation knowingly deposited and left behind. There should be no costs for clean up passed on to the City of Edmonds, Snohomish County or other organizations involved. Chevron UnoCal bears the full responsibility for clean up of the site. In addition to owning the responsibility, they have the funds in place to make this site clean and ready for estuary enhancement projects in the future. In fact, additionally, they ought to make a gift in kind for this project beyond the clean up (NOT CAPPING). Time for Chevron UnoCal to step up and do this the right way.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#) and [B. Model Toxics Control Act Cleanup Regulation](#).

96. Comment from: Point Edwards Owners Association (Michael Mitchell), 11.19.24

See the original comment in Appendix A (PDF).

Comments to the Revised Draft Feasibility Study 2024

Submitted by the Point Edwards Unocal Review Committee and the Point Edwards Owners Association Board

I. Introduction

The Department of Ecology should substitute a new alternative for the current Alternative 6, which is Chevron's recommended remedial alternative for the Unocal site cleanup. That new alternative would excavate sufficient newly identified locations of contaminated soil to allow a path for Willow Creek to reach Puget Sound. This would allow salmon migration and restoration. The remaining contaminated soil, including that beneath the WSDOT storm drain line, would remain on site. That contaminated soil would be contained by an engineered cover and an environmental covenant.

The current Alternative 6 does not meet the requirements of the MTCA and must be removed because it fails to meet any of these six administrative requirements:

- properly consider Public Concerns;
- properly consider Tribal Interests;
- properly consider Future Uses; or
- present data in a manner that allows the public to comment on selected Alternatives;
- Failed to consider all reasonable alternatives;
- Did not consider climate change.

The need for a new Alternative instead of the current Alternative 6, does not preclude Ecology from selecting Alternative 4, the total removal of all toxic waste from the Unocal site. The newly substituted Alternative would replace the current Alternative 6 for analysis and comparison with Alternative 4 in the Disproportionate Cost Analysis selection process.

II. Reasons to Substitute Alternative 6 with a New Alternative

A. The 2024 Addendum to the 2017 Draft Feasibility Study failed to properly select the appropriate alternative actions for remediation.

1. Legal Requirements under the MTCA

The 2024 Addendum should have substituted a new alternative for the 2017 Alternative in order to meet the changed conditions surrounding the Unocal site. The Department of Ecology requested the addendum to “reevaluate remedial alternatives... .” Addendum 1-1.

Remedial alternatives are analyzed and selected as a part of a process governed by WAC 173-340: the crafting of a feasibility study.

The purpose of the feasibility study is to develop and evaluate cleanup action alternatives to enable the selection of a cleanup action that meets the requirements in WAC **173-340-360** and conforms to the expectations in WAC 173-340-370.

WAC 173-340-351(1).

What is to be evaluated in the feasibility study, or its scope, depends upon many factors, including the “characteristics of the site.” WAC 173-340-351(5). Additionally, when developing a feasibility study, specific steps must be taken.

Steps. Except as otherwise directed by ecology, a feasibility study of cleanup action alternatives must be conducted in accordance with the following steps. The study should remain flexible to avoid collecting unnecessary information or conducting unnecessary evaluations.

(a) **Step 1: Identify cleanup goals.** Identify the goals for the cleanup action, in addition to compliance with the requirements in WAC **173-340-360**. Include any planned future uses of the site and any habitat restoration or resource recovery goals for the site.

(b) **Step 2: Identify alternatives.** Identify cleanup action alternatives for evaluation in the study. The alternatives must achieve the goals identified in Step 1 and comply with the requirements in WAC **173-340-360**.

WAC 173-340-351(6) (emphasis added).

After evaluating alternative remedial actions and in making its selections, the Department of Ecology must consider non-quantitative factors.

Public concerns and tribal rights and interests. For ecology-conducted or ecology supervised remedial actions, ecology will consider the following when selecting a

cleanup action:

- (i) Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified under WAC **173-340-600** (13) and (14); and
- (ii) Indian tribes' rights and interests identified under WAC **173-340-620**.

WAC 173-340-360(3)(d).

The 2017 Draft Feasibility Study (2017 FS Study) failed to properly meet the requirements of WAC 173-340 351, and the 2024 Addendum failed to correct those errors to meet the changed conditions in the environment.

2. Characteristics

Chevron accurately defined the characteristics of the site. The Unocal site is very near Puget Sound, bordering a marsh that has some access to Puget Sound. Willow Creek runs through the site and contains a salmon hatchery. Willow Creek also has access to Puget Sound. The 2017 Draft Feasibility Study and the 2024 Addendum also accurately describe the site.

3. Goals

Chevron listed cleanup goals in its Final Feasibility Study Work Plan dated October 5, 2012, at p. 14, and the Final Interim Action Work Plan dated July 19, 2016, at pp. 14-15. The objectives listed in 2012 and 2016 did not include future uses or habitat restoration as required by WAC 173-340-351(6)(a) or comply with WAC 173-340-360(3)(d), which requires consideration of public concerns and tribal rights and interests. The 2017 Draft Feasibility Study and the 2024 Addendum added nothing to Chevron's objectives.

While Alternative 6 as drafted may meet the objectives listed in 2012 and 2016, Alternative 6 cannot achieve any goal related to public concerns, tribal rights, future use, or habitat restoration, because the Department of Ecology did not consider or set these goals. Ecology also admits that Chevron has deliberately ignored the MTCA requirements that future uses and habitat restoration which are required by WAC 173-340-351(6)(a).

The Cleanup Action Plan is designed for the remedy to be protective of human health and the environment. The current draft Cleanup Action Plan was not designed to incorporate needs of habitat restoration or daylighting tidal connection.

Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, July 2020, Publication 20-09-152, p. 5 (*emphasis added*).

4. Future Uses

Chevron's position on future uses is as follows:

Since 2022, Ecology has stated that the potential future use for the Lower Yard is Open Space. Presumably, Ecology reconsidered the Lower Yard Future Use based on current use, comments received from WSDOT, as well as publicly available information from the City of Edmonds.

Addendum, Land Use and Zoning, page 1-3.

Yet, Ecology claims that land use was determined by Chevron. Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178 July 2020, Publication 20-09-152, p. 5.

Since WSDOT made the decision to abandon the use of the Unocal site as a ferry terminal, neither Chevron nor Ecology has come to terms with what the potential future use of the Unocal site might be. The best that can be said is that Ecology considers the future use to be open space available as an ecological habitat. "Due to the expected future use of this Site as" Open Space available as ecological habitat." Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, January 2024.

In plain dictionary language, Ecology considers the use of the Unocal site as a space where plants and some types of animals might live. There is no mention how Ecology reached its decision or why it did not consider a salmon recovery estuary. A mere statement that the Unocal site can be used as open space that plants and animals can live in does not meet the Department of Ecology's obligations under the MTCA.

5. Public Concerns

The most complete description of Chevron's understanding of public concerns is in the 2024 Addendum, 6.1.6, Public Concerns, page. 6-6. The Addendum notes that public concerns relating to noise, traffic, risks, and impacted soil and water remaining on the site have been melded into Alternatives 4 and 6. There is no mention of public concern over the future use of the site. Yet, the MTCA includes in public concerns the "future land use" of the site. WAC 173-340-600(9)(e).

There has been ample public planning on the future use of the Unocal site as a salmon recovery estuary. See paragraph 3(b) below. There have been strong and vocal public efforts to promote consideration of the future use of the Unocal site as a salmon recovery estuary at the public hearings and open houses conducted by Ecology. However, **there is no mention** of salmon or an estuary in the 2017 FS Study or the 2024 Addendum. The only comment is contained in the Question and Answer Sheet of July 5, 2020:

The City of Edmonds and community groups have expressed an interest in a portion of the Site being used as part of a marsh restoration project to daylight tidal connections between Edmonds Marsh (not part of the Site) and Puget Sound,

making the marsh accessible for migrating salmon, including the endangered juvenile Chinook.

Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, July 2020, Publication 20-09-152, p. 3.

But when asked about Ecology's position on this public concern, Ecology only said:

Ecology supports habitat restoration projects that actively preserve, restore, and enhance existing wetlands throughout the state. Nevertheless, Ecology does not dictate how property is used by the property owner ...

Id. at p. 4.

The issue is not whether Ecology supports salmon recovery estuary as a public concern, but whether Ecology should consider a salmon recovery estuary and include a salmon recovery estuary as a public concern in the Revised Draft Feasibility Study.

6. Tribal Interests

Ecology also did not mention tribal interests in the Revised Draft Feasibility Study. Ecology says that they invite tribal participation. Public Participation Plan August 2024, p. 14. But there is no discussion of how the invitations were made or the results of any such invitations.

When selecting alternatives for a cleanup plan, the feasibility study must identify goals for habitat restoration and comply with WAC 173-340-360, which requires that any cleanup action consider Indian tribes' rights and interests identified under WAC **173-340-620**. WAC 173-340-351(6).

WAC 173-340-620 states:

Tribal engagement.

(1) **Purpose.** Tribal engagement is an integral part of ecology's responsibilities under chapter **70A.305** RCW, the Model Toxics Control Act. Ecology's goal is to provide Indian tribes with timely information, effective communication, continuous opportunities for collaboration and, when necessary, government-to-government consultation, as appropriate for each site.

...

(3) **Tribal engagement plan.**

(a) Ecology will develop a site tribal engagement plan that identifies Indian tribes that may be adversely affected by the site, opportunities for government-to-

government collaboration and consultation, and protocols for communication.

(b) Ecology will seek to initiate meaningful engagement with affected Indian tribes before initiating a remedial investigation or an interim action at a site. Ecology will maintain meaningful engagement with Indian tribes throughout the cleanup process.

There appears to be no tribal engagement plan establishing or discussing meaningful engagement over tribal interests.

7. Failure to meet with the requirements of the MTCA

Alternative 6 cannot comply with the required consideration of public concerns and tribal rights, because there was no mention of tribal rights. Any discussion of public concerns was limited to dust, dirt, and noise, as well as containing and not removing contamination. There was a deliberate refusal to consider future uses. Put simply, Alternative 6 cannot be used as a remedial option because it fails to comply with the MTCA. A new Alternative is necessary.

B. What considerations should go into selecting a replacement for Alternative 6?

1. The future use of the site *must* be considered.

Plans exist for the use of the Unocal site as a salmon recovery estuary. The Washington State Legislature in a budget note gave the COE the right of first refusal to purchase the Unocal site from WSDOT to “rehabilitate near-shore habitat for salmon and related species.” The COE and WSDOT entered into a Memorandum of Understanding (MOU) on the procedures for the purchase of the Unocal site from WSDOT. The Edmonds Marsh Estuary Advocates (EMEA) has circulated a vision of a possible salmon recovery estuary, which is one possible outcome for the Unocal site. EMEA has also helped the COE to obtain a National Fish and Wildlife grant to study sea level rise and use of the Unocal site for salmon recovery.

These plans should have been mentioned in at least the 2024 Addendum. The MTCA does not require consideration of future use be based upon use by current owners or a prospective purchaser. The MTCA speaks of “**any planned future uses** of the site and **any habitat** restoration or resource recovery goals of the site.” WAC 173-340-351(6)(a) (emphasis added). WAC 173-340-708(a and b) speak of “potential future site use.” These plans for future use will support a new alternative to Alternative 6.

2. Public concern must be properly addressed.

The purpose of the MTCA is the protection of human health and the environment. The Revised Draft Feasibility Study properly supports that purpose. But public concern is required to be considered in achieving that purpose and public concern encompasses more than human health and the environment.

WAC 173-340-360 governs the evaluation and selection of cleanup action alternatives:

... ecology will consider the following when selecting a cleanup action:

- (i) Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified under WAC 173-340-600 (13) and (14) ...
- (ii) (ii) Indian tribes' rights and interests identified under WAC **173-340-620**.

WAC 173-340-360(d) (*in part*).

The concerns of vulnerable populations, overburdened communities, and tribal interests extend beyond human health and the environment. It is important to note that public concerns are specified as a separate and individual concept and not restricted to vulnerable populations, overburdened communities, and tribal rights and interests. The MTCA puts future use of the site into play.

The work by the Edmonds Marsh Estuary Advocates, the Point Edwards Unocal Review Committee, the Edmonds City Council, the Edmonds Mayor's Office, and the state legislature, all directed towards the Unocal site becoming a salmon estuary, must be included in the selection of alternatives for the cleanup of the Unocal site.

3. Tribal interests must be Considered.

Even if tribal interests cannot be identified through the use of a Tribal Engagement Plan under WAC 173-340-620, known tribal interests must be considered, because they are intertwined with the interests of all citizens of the State of Washington.

In *United States v. State of Washington*, 384 F. Supp. 312 (W.D. Wash. 1974), *aff'd and remanded*, 520 F.2d 676 (9th Cir.1975), commonly known as the *Boldt Decision*, the courts recognized that, under federal treaties with the tribes, Native American tribes were entitled to take 50% of the salmon and to co-manage the salmon fisheries. In *United States v. Washington*, 853 F.3d 946 (9th Cir. 2017), commonly known as the *Culvert Case*, the court required Washington to replace designated culverts under its highways that impeded the passage of salmon to spawning grounds. In doing so, the court spoke of the decline in salmon stock:

A primary cause of this decline is habitat degradation, both in breeding habitat (freshwater) and feeding habitat (freshwater and marine areas) . . . One cause of the degradation of salmon habitat is . . . culverts which do not allow the free passage of both adult and juvenile salmon upstream and downstream." The "consequent reduction in tribal harvests has damaged tribal economies, has left individual tribal members unable to earn a living by fishing, and has caused cultural and social harm to the Tribes in addition to the economic harm.

Id. at 961.

The Seattle Times reported on November 19, 2023, that the 20-year cost to remedy the culverts that were barriers to salmon was between 7.3 to 7.8 billion dollars.

These tribal interests are common knowledge. Both Chevron and Ecology are charged with knowing these interests. The cost of ignoring Tribal rights is a public concern. As the Feasibility Study is designed to develop and evaluate cleanup action alternatives, the study must review and consider Public Concerns including Tribal Interests.

4. The 2024 Addendum DCA (Disproportionate Cost Analysis) fails to separate the costs for excavating those newly identified locations exceeding 2x the approved CULs from the costs of excavating contamination around the WSDOT storm line, thus preventing the public from making informed comments on the DCA and any possible new Alternatives.

It appears that there are cost effective alternatives to the cleanup of the Unocal Site that have not been studied and evaluated by Chevron. The manner in which Chevron reported the costs for Alternative 4 and Alternative 6 prevents the public from adequately commenting on the Alternatives or adequately exploring alternatives not considered by Chevron.

The costs of total excavation under Alternate 4 have risen. In 2024, the site-specific TEE that was directed by Ecology after WSDOT abandoned its planned ferry terminal and Ecology became uncertain as to the site's future use was released. Addendum, p. 1-2. A TEE determines whether the release of a hazardous substance in the soil poses a threat to plants, animals, or humans. A TEE will set site specific cleanup standards for the site. The data collected from the study will be used in determining cleanup standards for the site. The specific procedures prescribed for a TEE are not suitable for evaluating wetlands or surface water. WAC 173-340-7490(1). The new TEE was requested by Ecology because Ecology did not recognize that the potential future use of the site could be a salmon recovery estuary, and the site was bordered by plants and animals. Addendum, pp.1-2 and 2.2. (With this uncertainty in proposed end use for the Lower Yard) and (A site-specific TEE is required if a site is located on, or directly adjacent to, a natural area.)

In 2017, when the DCA was estimating the cost of excavation for Alternative 4, the areas subject to excavation were a large area near the WSDOT Storm Drain and 4 small locations labeled "statistically insignificant." The estimates ranged from a low of 5.473 million dollars to a high of 8.645 million dollars. In 2024, when doing the same cost analysis for Alternative 4, nothing had changed except that the new TEE had exposed about 16 new locations of contamination. These new locations increased the 2024 cost estimates for Alternative 4 from a low of 8.021 million dollars to a high of 11.427 million dollars. The 16 new locations had increased the low estimated cost of excavation by 2.568 million dollars and the high estimated

cost by 2.782 million dollars. The average cost of excavating the 16 new locations of contamination is \$167,187.

But the cost of excavating the new locations of contamination is not equal. The 2024 Addendum speaking of the high excavation costs for Alternative 4 notes:

Excavation of additional areas where COPECs exceed the site CULs will also require shoring to protect the BNSF ROW (Right of Way) and the toe of the northwest slope of the lower Yard. These requirements contribute to the significant cost of these alternatives.

Addendum, page 6.7.

At the public hearing on September 16, 2024, the contaminated soil was reported as being “very shallow.” The Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, Question 7 reported that the contamination was within 4 feet of the surface.

So, there are locations that are high cost to excavate and those that appear lower in cost. But Chevron has not reported the cost to excavate the individual locations of contamination. Perhaps this can be done as the 2024 revision of Alternative 6 includes Chevron conducting additional soil sampling of the new locations. If so, the public can estimate the cost of excavation a channel through the contaminated locations.

The calculations in this comment indicate that there is room for viewing other possible alternatives for cleanup. It very well may be possible to excavate a portion of the newly identified impacted soil and meet the requirements of the MTCA. These possible alternatives should have been considered in the 2024 Addendum.

5. The Public is unable to properly comment on key portions of the Revised Draft Feasibility Study because of the way essential data or information is presented or not discussed.

The MTCA is replete with requirements that the public be allowed to comment on the analysis and decision made in cleaning up a toxic waste site. However, the Revised Draft Feasibility Study does not allow appropriate public comment on some key points.

- The weight given to public concern and Tribal Interests is unknown. When objectives were set for Alternative 6, public concern and tribal interests were not mentioned. Final Interim Action Work Plan dated July 19, 2016, pp.14-15. This is not to say that the objectives were wrong, they were just inadequate. When Public Concerns were finally discussed, they remained limited to Chevron’s 2012 and 2016 vision of the Unocal site. New issues were brought to Chevron and Ecology around a salmon recovery estuary, and they remained silent. That silence raises concerns over what weight they were given in the Disproportionate Cost Analysis. All that the feasibility study can say is that the old views were considered in

Alternatives 4 and 6. But what weight in the Disproportionate Cost Analysis was it given to the concerns of the citizens who attended meetings, the concerns of the City of Edmonds and the concerns of the tribes? If any weight was given, it is unknown.

- Also unknown is what the cost would be to excavate some of the newly identified locations of contamination produced by the 2024 TEE. Without this information, no appropriate comment can be made about the selection of alternatives. The feasibility study is designed to review reasonable alternatives. Without looking at the cost of excavating individual locations of newly identified toxic waste (SWLY A 12WALL, EXB14-FF-6-4, etc.,) no real comment can be made on whether or not all reasonable alternatives have been explored.
- The Revised Draft Feasibility Study does not discuss climate leaving the public unable to comment on whether climate change has been properly considered.
 - (a) WAC 173-340-360 (6)(f) requires that the remedial investigation of the site include the effect of climate change.
 - (b) WAC 173-340-360 (3)(a)(v) requires that cleanup actions have resilience to climate change.
 - (c) WAC 173-340-(360)(d)(5)(iii)(A)(III) requires that when doing a DCA for a cleanup action selection when evaluating long term effectiveness, the feasibility and cleanup action must consider the resilience to climate change impacts.

The Revised Draft Feasibility Study does not consider these factors.

Given the fact that the Unocal site is a low land former marsh bordering the Edmonds Marsh and the critical slope upon which Point Edwards sits as well as very near Puget Sound with its significant wind and wave action, climate change must be considered. The question is not whether these considerations would change the ultimate decision. Rather the public has a right to comment on why these considerations should or should not impact the ultimate decision.

III. Conclusion

The MTCA guides the selection of alternatives for cleanup of toxic waste sites. Unless the requirements of the act are followed, including consideration of public concerns, future use, tribal interests, and habitat restoration, a skewed result considering only the cost of removal will occur. That is what has happened here.

While Chevron may have been surprised by WSDOT's abandonment of its ferry terminal, there was time and information available to consider the non-quantitative requirements of the MTCA. WSDOT changes in its plans and Ecology changes in regulations could have been handled by the 2020 Addendum. But new issues raised by the public were ignored and tribal interests

were not considered.

What Chevron wants to do is to save money by leaving islands of toxic waste within the Unocal site, knowing that these spots of remaining toxic waste will have to be removed in order to create a channel opening the Unocal site to Puget Sound to salmon. Chevron has a duty to remove toxic waste so that the site is not only safe for humans and the environment, but also that the site can be used. While not falling under the explicit rule of *United States v. Washington*, the Culvert Case, what Chevron is doing clearly disregards tribal interests. Chevron is leaving barriers to salmon recovery in place and telling others, “If you want to use the site for salmon recovery, you have pay for the removal of our toxic waste.”

If this were a culvert it would not be allowed to happen.

Michael Mitchell, Point Edwards, Unit 31/307
Member. Point Edwards Unocal Review Committee
Member, Edmonds Marsh Estuary Advocates, Technical Team
mtmj1946@gmail.com

Response

Thank you for your comment. Please see topical summaries including part [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), [H. Future Planning and Long-Term Risks](#), and [J. Opposition to Alternative 6 and Support for Alternative 4](#).

Regarding references to the July 2020 Questions and Answers sheet published by Ecology. Several changes have occurred since the 2020 Q&A, resulting in some of the answers to be outdated and not applicable. The Terrestrial and Ecological Evaluation for the Site was redrafted in 2024 which considered the potential future use of the Site as open space, consistent with City of Edmonds documents ([PROS](#)¹⁹ and [Resolution 1508](#)²⁰). The Washington Administrative Code describing the need to consider the goal of habitat restoration (WAC 173-340-351(6)(a)) was also added in 2024.

Table 6-3 of the FS Addendum includes cost details of each alternative. Costs for excavation of contamination in the WSDOT stormwater pipe area are separated from the costs of excavation of the shallow localized contaminant areas. Line-item costs are provided for the tasks needed for excavation, including shoring for each area.

¹⁹

https://www.edmondswa.gov/government/departments/parks_and_recreation/planning_projects/2022_parks_recreation___open_space

²⁰ <https://weblink.edmondswa.gov/WebLink/DocView.aspx?id=1571520&dbid=0&repo=Edmonds&cr=1>

97. Comment from: Tanya DeMarsh-Dodson, 11.19.24

See the original comment in Appendix A (PDF).

I will be brief, the points I want make are to aid in giving a broad historical perspective to the matter of what we humans can do to create a viable resilient place in which to live.

The restoration of the Edmonds Marsh to an estuary is a localized regional opportunity, a rare one, to restore an estuary and maintain an existing coastal marsh on the shore of Puget Sound. It is a chance to perpetuate a portion of the remarkable ecosystem which Captain Vancouver encountered when he sailed into what is now known as Puget Sound, a place that still bears the name he gave it. The region is much different now than when he sailed into its waters in the late 18th century. Americans from the east of the nation began to settle the area in the mid 19th century have transformed it. The coastal wetlands function now as they did in the 18th century but now are even more significant for human well-being as there are so few of them; they store even more carbon than our precious forests. The economy of Edmonds is made robust by visitors, many of whom are attracted by the opportunity to visit the natural areas adjacent to the city to watch birds or just enjoy the natural spaces. When considering the economic investment in rehabilitating the land contaminated by petrochemical enterprise, there is much that is relevant to consider.

Consulting with people of the tribes who lived and pursued their livelihood in the Edmonds area when the Europeans arrived and began to settle is important also. They live in the area today and have an interest in the ecological health of the coasts of Puget Sound which are still important to them as fishing is important to their economy. Their opinions and suggestions are important to planning for the future of the Edmonds wetlands.

Chevron reaped considerable income from the use of their Edmonds property from the bulk fuel terminal and asphalt factory, is it unreasonable to ask them to be responsible for the population of the land from which they realized their income.

The solution offered as an alternative to restoration, capping the property, could only be successful if climate change were arrested and sea-level rise averted, which is unlikely. Rehabilitation is suggested by scientific study.

Puget Sound is a bountiful region, one that has sustained human population well for many generations. The ecosystem has suffered great damage since the 1850's, we humans need to take care of it if it is to continue to sustain us.

Response

Thank you for your historical perspective. Please see Summarized Topical Response [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), and [C. Tribal Rights and Interests](#).

98. Comment from: Debora Ashland, 11.19.24

See the original comment in Appendix A (PDF).

Public Comments on the Chevron Environmental Management Company

Public Review Draft Final Feasibility Study Report Addendum, August 19, 2024

Comments submitted by Debora Ashland, Edmonds resident, November 19, 2024

I am providing comments as part of the Public Comment Period for the Chevron Environmental Management Company, Public Review Draft Final Feasibility Study Report Addendum, August 19, 2024. Thank you in advance for your consideration of these comments.

I support Alternative 4 as the most permanent, best solution proposed, and the only alternative meeting the Adjusted Cleanup Standards [WAC 173-340-700(3) in order to clean-up the contaminants identified in the Lower Yard of the Chevron site.

This site has been used for decades as a business and numerous changes to the site were undertaken during that time by the Owner. Unfortunately, many of those changes modified, filled, and contaminated the site. The current property owner benefitted from the use of the site for decades. During that time, we, as a society, have also learned a great deal about hazardous materials and the need to remove them from our lands to prevent hazards to people and the environment through air, touch, dust, surface water, and groundwater. Owner's that contaminate their sites need to be responsible for cleaning up their mess. While I would like to see the Owner responsible for returning the site to its original condition, I understand that will never happen. Therefore, I support requiring the Owner to remove all known contaminants. Complete the clean-up of this site now and be done with it so the City of Edmonds and community can move on. The only alternative that can provide this is Alternative 4.

Much clean-up has been done, however it is not yet complete, and numerous areas are testing above the acceptable CUL (clean up level) requirements; water and soil. Numerous alternatives have been studied but only one removes the most contaminants as possible and that is Alternative 4. Long term maintenance will be required for Alternatives 1 and 6 but the report does not identify who would conduct this maintenance or how it will be paid for. In some places, the Report identifies 60 years of maintenance. Any future owner will need to be aware

of the monitoring and maintenance responsibilities. I support some type of fund be established by the current Owner to fund these future tasks. Funding future work is particularly problematic if a public agency obtains the site. Any costs for funding future clean-up would be paid by tax payers, thereby shifting the burden from the responsible party to those that did not cause the contamination.

This Report identifies a number of categories and evaluates each alternative accordingly. Alternative 4 is the highest ranked alternative in 4 of the 6 categories. The Short Term Risk category, which Alternative 4 did not rank highest, excludes any long-term risks and therefore, does not provide a complete evaluation of the alternatives. Long term risks are evaluated in Section 6.1.3. and Alternative 4 is ranked the Highest.

The final category is costs. I believe the cost comparisons are flawed because they compare apples and oranges. Alternatives 1 and 6 do not clean-up the site, they merely cover it, thereby pushing the contamination to the next Owner. Nor do the estimates indicate the costs for future monitoring and maintenance which would add significantly to the costs listed. Only Alternative 4 cleans up the site "...and is permanent to the maximum extent practicable.

None of the cost evaluation should be a deciding factor for which alternative is required by DOE. The owner of the property contaminated the site while creating profits for their company. They should be held responsible for cleaning up the site. These impacts should not be allowed to remain and become impacts for future generations. The current Owner does not have a hardship that would prohibit them from doing the clean-up identified in Alternative 4.

Please note that the Owner of the property is a multi-billion-dollar company and the cost difference in these alternatives is less than \$10M. According to the Washington Examiner, February 2, 2024, "...Chevron outlined profits of \$21.4 billion in 2023, the second-largest profit in a decade... "In 2023, we returned more cash to shareholders and produced more oil and natural gas than any year in the company's history," said Mike Wirth, Chevron's chairman and chief executive officer." And that is for ONE year.

The following are specific comments on sections in the document. The Report language is repeated here in italics with the page number preceding the text in **bold**. Underline has been added to identify the exact text I am commenting on. My comments are in standard text below each item.

P 2-4 *2.3.2 Groundwater Quality CUL exceedances in groundwater from the last four quarterly events are summarized below:*

GRO concentrations exceeded the CUL of 1,000 µg/L in MW-101, MW-518, and MW-ER....

DRO and HRO concentrations exceeded the CUL of 500 µg/L in MW-129R, MW-20R, MW-506, MW-507 (duplicate), and MW-E-R....

The benzene reporting limit for samples collected from LM-2 during the March 7, September 13, and November 15, 2023 groundwater monitoring events exceeded the CUL of 1.6 µg/L...

Total cPAHs adjusted for toxicity exceeded the CUL of 0.05 µg/L in several wells during the last 4 quarters, ranging from 0.072 µg/L in MW-8R during the March 9, 2023 sampling event to 1.605 µg/L (0.019 µg/L) duplicate) in MW-14 during the November 16, 2023 sampling event...

Groundwater is a problem in a number of locations on the site. These areas need to be cleaned up. Only Alternative 4 appears to clean-up the MW's identified in the Report by removing the materials. If I am not reading the charts and figures correctly, my comment remains that the groundwater exceedances need to be cleaned up by the current Owner. Table 2-8 indicates the location of these exceedances. The DPE system appears to be helping the contaminated groundwater problem, therefore I believe that should remain. On-going monitoring and maintenance of the DPE system needs to be determined now so that future Owner's understand the responsibility.

P 2-6 2.4 Light Nonaqueous Phase Liquid The DPE system was designed to create an inward groundwater gradient, lowering the groundwater table toward DPE wells and surrounding nearby observation wells. When the groundwater table is lowered, any residual LNAPL in surrounding soils that is typically immobile under static conditions is pulled toward the wells through the change in groundwater gradient and induced vacuum. Observations of LNAPL during discontinuous DPE system operation (static and induced drawdown conditions [i.e., shutdown and following restart]) are therefore to be expected. However, the DPE system was also designed to reduce LNAPL mass through weathering. Under DPE system operation, the LNAPL undergoes biotic and abiotic transformation including volatilization, solubilization, and aerobic biodegradation, which in turn change the characteristics of the LNAPL such as the mass fraction (Johnson et al. 1990). Throughout the remediation timeframe, it is expected that weathering will continue until LNAPL is no longer measurable. Operation of the DPE system has successfully removed or weathered LNAPL to date as measurable LNAPL (a distinct separate layer) is no longer observed in any of the wells.

The DPE system appears to be helping the groundwater problem, therefore I believe that should remain until the LNAPL is no longer measurable as stated in the Report. On-going monitoring and maintenance of the DPE system needs to be determined now so that future Owner's understand the responsibility.

P 3-1 3. *Adjusted Cleanup Standards* A cleanup standard consists of the following three elements [WAC 173-340-700(3)]:

CUL, the concentration that must be met to protect human health and the environment.

POC, the location where the CUL must be achieved...

The Feasibility Study Report indicates that the CUL's must be met to protect human health and the environment. Therefore, by the WAC standard identified, only Alternative 4 meets the legal standard. Alternatives 1 and 6 leave exceedances of the CUL's on-site.

P 4-1 *In addition to the remedial technologies developed in the FS Report (Appendix A), an engineered cover system will be included as part of Alternative 6 to address soils with COC concentrations greater than twice the CUL for the direct-contact pathway from 0 to 15 feet bgs and where PSVs are exceeded, as identified by the TEE.*

If accepted by DOE, any accepted cover system should be used for ALL areas exceeding the CUL, not just areas that are twice the CUL. It doesn't make sense to allow any areas exceeding the CUL's to remain, otherwise why identify a CUL limit. It is not clear what the long-term solution is for an engineered cover. If the engineered cover finish is gravel, I think it would only support future invasives such as blackberries and other non-native species. This does not return the site to any acceptable condition. This comment is the same for Alternatives 1 and 6.

P 4-1 *The engineered cover will consist of a woven geotextile fabric and 6-inch-thick aggregate cover placed over targeted locations. The woven geotextile will be used as a separation layer consisting of Mirafi 125 280i or approved similar fabric.*

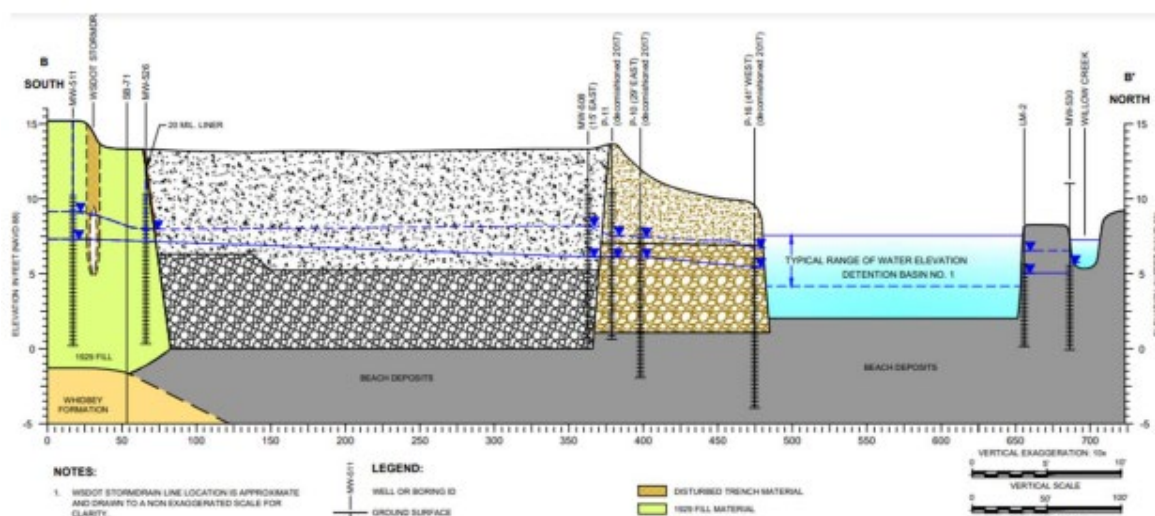
Geotextile fabric is not a long-term permanent solution. The geotextile fabric will degrade over time. Any future use will very likely disturb this system. Therefore, it is not a permanent clean-up scenario. The current Owner of the site needs to clean-up the damage they have done to the site.

P 4-2 *Long-term maintenance will be required.*

This document acknowledges the engineered cover is not a permanent solution. Maintenance will be required but it does not identify who would conduct this maintenance or pay for it. The current owner of the site needs to clean-up their damage to the site.

P 4-3 thru 4-3 4.3.1 Alternative 1: Monitored Natural Attenuation with Environmental Covenants. Alternative 1 involves shutdown of the existing DPE system followed by an MNA sampling program to address soil and groundwater impacts along the WSDOT stormwater line and at the site boundary along Willow Creek. The MNA program will include annual sampling and analysis for dissolved-phase COCs and biogeochemical parameters along a transect of wells. This program will be implemented until dissolved-phase COC concentrations are reduced to less than CULs...ECs would be used to protect human health and the environment at the Site and would: •Cover the entire Site, including the area already covered by the construction easement ... •Protect against potential direct contact by Site occupants and workers with impacted soil or groundwater remaining at the Site through a Soil Management Plan

This alternative is not acceptable as it keeps all contaminants on site and caps them with engineered cover over the entire site. The DPE system would be shut down and it is not clear who would be conducting or is monitoring the MNA sampling program. The Report admits this alternative will require 60 years of maintenance. That is not acceptable. The alternative does not remove the contaminants and only adds material that cannot be disturbed in the future. However, there is no guarantee the cover would not be disturbed in the future. This cover will also increase the height of the current grade. Figure 6 shows this best. In order for a natural open space to succeed, native soils and plants will be required. If that natural area is to function as an extension of the current marsh, the grade is already too high and likely some of the current fill will need to be removed. Adding yet another layer with engineered cover does not allow for removal of the existing material without disturbing the contaminants. Any engineered cover keeps the grade well above Willow Creek, the Detention Basin, and the current Marsh, essentially rendering the area not part of a marsh environment which would require on-going intermittent flooding to survive. Figure 6 included below



P 4-4 4.3.3. Alternative 6: Dual-Phase Extraction Treatment System Operation, Engineered Cover System, Contingency Plan, and Environmental Covenant: *Alternative 6 involves continued operation of the DPE system for one year following additional optimization. Optimization will include focusing system operation of both air and groundwater extraction on areas where groundwater concentrations exceed CULs. Additional soil sampling will also be implemented to confirm areas with previous soil CUL and PSV exceedances, further refine the boundaries of the engineered cover system, and to confirm the effectiveness of the DPE system. If, following 1 year of DPE system operation, groundwater compliance monitoring indicates that dissolved-phase COC concentrations remain along Willow Creek and near the WSDOT stormwater line, additional compliance monitoring in these areas will be conducted for an additional 2 years...*

Alternative 6 is not acceptable as it provides an engineered cover over a portion of the site and also shuts down the DPE system after 1 year with monitoring for only 2 more years. Although a future contingency plan is identified it is not clear who will fund or conduct this. These costs are not evaluated with these alternatives. Similar to Alternative 1, adding a layer of engineered cover to the site creates problems for the future use of the site as potential open space. See comment above for Alternative 1.

P 4-5 Part of Alternative 6 proposal: *The DPE system installed near the WSDOT stormwater line will continue to dewater soil, exposing any remaining soil impacts to volatilization through induced vapor flow and an increase in oxygen concentrations. The DPE system continues to remediate COCs in soil and minimize offsite migration of dissolved-phase COCs in groundwater. The DPE system has also reduced soil vapor concentrations in soils within the WSDOT stormwater line area as evidenced by a reduction in influent vapor concentrations monitored during DPE system operation.*

I agree the continuation of the DPE system should be continued in any scenario to assure the ability to continually monitor the site, therefore I would propose this be added to Alternative 4.

P 6-8 6.2 Final Disproportionate Cost Analysis *The alternative that ranked highest and that Ecology ranked as the most permanent after the first analysis is Alternative 4. Per WAC 173-340-360(3)(c)(i)(A), Alternative 4 was compared to Alternative 6, which is the next most permanent remedy of the updated alternatives presented.*

Comparing costs of alternatives is inconsequential if the less expensive alternatives being compared do not provide permanent solution to cleaning up contaminants on site.

P 8-1 8. Summary and Conclusions *Alternative 6 (DPE Treatment System Operation, Engineered Cover System, Contingency Plan, and Limited ECs) is the alternative that is most permanent to the maximum extent practicable*

I disagree with the conclusion that Alternative 6 is the most permanent to the maximum extent practicable. Other than this alternative being less expensive than Alternative 4, it is not the most permanent solution “to the maximum extent practicable”. Alternative 4 is the best permanent solution and can be implemented.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#) for details on Unocal’s responsibility and Ecology’s role in selecting a cleanup action for the Site. See Summarized Topical Response [H: Future Planning & Long-Term Risks](#) for details on financial responsibility of contamination cleanup.

Regarding alternatives meeting cleanup standards [WAC 173-340-700](#)²¹(4)(c) states “Where a cleanup action involves containment of soils with hazardous substances above cleanup levels, the cleanup action may be determined to comply with cleanup standards,” indicating that Alternative 6 also meets cleanup standards.

Regarding Section 2.3.2 on groundwater – Ecology agrees that current groundwater monitoring results do not meet cleanup goals. The Feasibility Study (FS) states that additional cleanup steps will be required if groundwater CULs continue to be exceeded along Willow Creek and/or the WSDOT stormwater line.

Regarding Section 2.4 on LNAPL – The absence of a distinct separate layer of LNAPL is a required cleanup standard. The operation of the DPE system, and any contingent cleanup needed if the DPE system is unsuccessful, will be detailed in the CAP. Completion of the cleanup work described in the CAP will be the responsibility of Unocal.

Regarding the engineered cover system targeting areas exceeding 2 times the CULs, geotextile fabric, and maintenance – MTCA includes a statistical analysis to determine exposure risk to contamination at cleanup sites. It is expected that by covering contaminated areas exceeding 2 times the CULs, remaining uncovered areas will be statistically insignificant in consideration of exposure to ecological receptors. Following additional soil sampling at the Site, a statistical analysis will be conducted to ensure engineered covers meet cleanup requirements. The proposed geotextile fabric is designed for use in roadway construction. If properly covered, the geotextile is expected to last much longer than the contamination it is covering. Maintenance requirements and responsibility will be described in detail in the CAP.

Regarding the party responsible for future monitoring, cover maintenance, and potential contingency actions – The FS identifies cleanup options meeting MTCA cleanup standards. Information from the FS is used to draft a CAP that describes the actions that need to be taken at the Site to meet MTCA cleanup standards. The Potentially Liable Person (PLP), which is Unocal for this Site, is responsible for completing all of the actions in the CAP. This will include monitoring, potential contingency actions, and if selected, cover maintenance.

²¹ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-700>

Thank you for your comments on the alternatives. To clarify, Alternative 1 does not include installation of a surface cover. Thank you for your comments on the grade change due to the cover described to Alternative 6. This will be considered in the final FS. Alternative 4 includes excavation in the area of the DPE wells. The DPE infrastructure would need to be removed for excavation, therefore continued operation is not possible if Alternative 4 is implemented.

Regarding the DCA outcome, please see Summarized Topical Response [B. Model Toxics Control Act Cleanup Regulation](#).

99. Comment from: Mike Shaw, 11.19.24

I strongly believe that Chevron should complete the full and necessary cleanup of the Unocal site, lower yard, in Edmonds. To do anything less is to shirk their legal and ethical duty. In addition, it seems that further study is required in a number of areas:

1. The soil surrounding the Hwy 104 storm drain is described as still being contaminated. What level and how severe? Will removing the soil adjacent to the storm drain cause harmful disruption to the marshland adjacent? Are there more testing sites needed near the storm drain to fully understand the cleanup requirements here?
2. When this property is finally ready to be part of the City of Edmonds, will it be clean enough to encourage and promote future salmon runs?
3. What levels of toxins remain in the latest soil samples? Do these need to be updated?
4. More than anything, I'd like for future generations to be able to enjoy the Edmonds Marsh, and to learn and study its ecology. As part of this, I fully expect and anticipate healthy salmon runs as an integral part of the Edmonds Marsh. Please help make this happen!

Response

Thank you for your comment. Regarding Unocal's responsibility (performed by Chevron on Unocal's behalf) please see Summarized Topical Response [A. Model Toxics Control Act](#).

1. The soil around the Hwy 104 stormwater pipe does still contain some contamination. The area was sampled in 2018 following the first year of DPE system operation. Based on the results and the effectiveness of the DPE system at removing soil contamination in the first year of operation, it is expected that soil contamination exceeding cleanup levels still exists in several areas along the stormwater pipe. There is always risk when excavating and transporting contamination, which is discussed and considered in the Feasibility Study. Additional soil sampling is proposed prior to drafting the Cleanup Action Plan for the Site.
2. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).
3. See bullet 1 above.

4. See bullet 2 above.

100. Comment from: Linda Burley, 11.19.24

SO MANY CONCERNS STILL TO BE ADDRESSED:

*Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study.

*Public concern has not been properly weighted!

*A cleanup plan BETWEEN Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered.

*Tribal rights and interests MUST be included in the feasibility study.

*UPDATED soil samples are needed before the feasibility study is complete.

*Chevron Corporation made the mess — they should clean it up.

Please carefully consider the above points, and all concerns of the public. Thank you!

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

101. Comment from: Craig Feyk, 11.20.24

The Unocal site needs to be cleaned to a state that would allow restoration of the original open channel between the Edmonds Marsh and Puget sound. Pollution created by Unocal (now Chevron) needs to be cleaned up by Chevron. Alternative 6, currently favored by DOE, is a ticking time bomb that would almost certainly release pollutants due to sea level rise and seismic activity leading to cap rupture.

In addition, Alternative 6 is inconsistent with WAC 173-340-351(6)(a) "Include any planned future uses of the site or any habitat restoration or resource recovery goals for the site." Efforts to restore an open channel between the Marsh and Puget Sound would likely encounter highly polluted "hot spots" that would have to be cleaned by the City of Edmonds or State of Washington later if not addressed by Chevron now. The supposedly "low-cost" of Alternative 6 is not realistic, since it only temporarily masks the pollution problem. Additionally, the so-called "High cost of Alternative 4" is in fact a better value since it restores a functioning saltwater estuary to Puget Sound which would in turn restore salmon and other habitats. The benefits of Alternative 4 have been significantly underestimated in the DCA and should be re-calculated. The updated DCA for Alternative 4 should address the value of a restored Edmonds Marsh as a

wildlife sanctuary, salmon spawning estuary, and wildlife viewing destination. In addition, this spot has significant cultural value as an historical meeting place for native tribes and has the support of the Edmonds community who are actively involved in reversing environmental damage.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

102. Comment from: Alan Maszk, 11.20.24

The Department of Ecology should substitute a new alternative for the current Alternative 6, which would excavate sufficient newly identified locations of contaminated soil to allow a path for Willow Creek to reach Puget Sound, as well as other corrective actions.

Response

Thank you for your comment. Please see Summarized Topical Response [D. Feasibility Study Alternatives](#).

103. Comment from: Janet Amberg, 11.20.24

The Department of Ecology should substitute a new alternative for the current Alternative 6, which would excavate sufficient newly identified locations of contaminated soil to allow a path for Willow Creek to reach Puget Sound, as well as other corrective action

Response

Thank you for your comment. Please see Summarized Topical Response [D. Feasibility Study Alternatives](#).

104. Comment from: Julie Martinson, 11.20.24

I'm writing as a concerned citizen, living over 55 years in Snohomish County, who cares about the health of our rivers and the Puget Sound, and all the people, birds and critters who depend

on a clean ecosystem. Please consider these comments in regards to the Unocal/Chevron Cleanup in Edmonds, WA.

We want and need a new Disproportionate Cost Analysis performed, and want more of the Unocal site permanently cleaned up by excavating contamination.

Because Chevron made this Toxic mess, they have the responsibility to clean it up after all the financial gain they have made. The public, the City of Edmonds & the Tulalip Tribes aren't asking Chevron to restore the wetland or reconnect the estuary. What they want is that Chevron be held to clean up the property to a level closer to how they found it.

Consider that an estuary with restored habitat will be a great asset to this bio-region when the Edmonds Marsh is reconnected to Puget Sound. Cleanup and remediation levels need to be based on estimates of current & future resource uses & reasonable maximum exposures expected. The MOU with WSDOT, City of Edmonds & the State legislature plans to rehabilitate near-shore habitat for salmon & related species. This requires more than excavation of the Unocal fill and contamination.

A more accurate cost-benefit calculation must be done. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup decision making. Flooding events are already happening, during which the contamination can spread.

Public concern has not been properly weighted. Of the approximately 100 people who attended the Sept.'24 public meeting, the primary concern was that cleanup be sufficient to make reconnecting the Edmonds Marsh to Puget Sound feasible. It was not any of the reasons that Chevron listed.

****A cleanup plan between Alternative 4 and Alternative 6 should be considered. Excavating contamination in areas where the estuary restoration channel will be located, and capping & covering contamination elsewhere would better address future land use, public & Tribal concerns, with the environmental hazards of the site at a cost much closer to Alternative 6.**

Tribal rights and interests must be considered. Tribal concerns have been affirmed by their letters of support for the City's MOU with WSDOT and for the current NOAA Coastal Resiliency grant to create a nearshore estuary to aid in the depleted salmon recovery.

Updated soil samples are needed before the revised feasibility study is completed. They were last collected in 2008! New information can impact the ranking of benefits of each proposed remedial action alternative & the cost of their implementation. Updated soil sampling will be especially crucial if new remedial action alternatives combining engineered covers with excavation are considered, which will in turn change the cost analysis. Ecology's updated feasibility study needs to incorporate the new soil sampling results.

It's crucial that all public input be considered, especially when large numbers of community members show up to testify at a public meeting. Chevron needs to be held responsible for cleaning up the contamination it caused over many years to a much more restored state, as it was before this industrial site damaged this marshy shoreline that holds such promise for returning salmon, birds and wildlife to this treasured ecosystem of the Salish Sea.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

105. Comment from: Vera Cannon, 11.21.24

In this age when we know so much more about Climate Change, it is unfair and irresponsible to have a situation where a buyer of a new land must pay for the expense of having contaminants removed that the former owner created.

It is further unfair and irresponsible to allow the owner to cover it up. This will only add to the ultimate need and expense to have the cover-up removed.

This unnecessary step will only delay and add expense to our goal of having the Edmonds Marsh return to the pristine environment we are all trying to restore.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), and [B. Model Toxics Control Act Cleanup Regulation](#).

106. Comment from: Glen Fuerstneau, 11.21.24

I celebrate being a resident of Edmonds by strolling the walk bordering the north side of the marsh. In the morning, I pass by birders photographing the beautiful marsh. As I talk with the birders, I learn that many don't live in Edmonds but come to Edmonds Marsh for its serene beauty.

Also, I walk by the Sound Salmon Solutions modest schoolroom to educate our youngest generations about restoration of the ecological needs for improving the health of the Sound. Outside this school room and salmon hatchery, a gate blocks the road to the Unocal site because it has misused the site as a toxic material dumping ground.

I have reviewed quite a few comments of others about their recommendation of Alternative 4. Alternative 4 is the only alternative that removes toxic materials such as arsenic, a known poison for centuries. Because Alternative 6 leaves the soil toxic, predicted rising sea levels and potential of earthquakes increase the risk of a hazardous future. I summarize below a few of

their comments which impact the future of the Edmonds Marsh restoration for which it seems the Revised Draft Feasibility Study ("Revised Study") has not directly addressed:

(1) The Revised Study failed to consider Public Concerns and Tribal Interests in the Edmonds Marsh restoration impeding its return to a functioning estuary for use by salmon and trout.

(2) The Revised Study failed to consider rising sea levels and potential earthquakes by only temporarily "capping" toxic material in the Alternative 6.

(3) What Chevron wants is to save money by leaving islands of toxic waste with the Unocal site. These toxic islands will be costly barrier requiring removal to create a channel opening to the Puget Sound as an estuary for salmon. Therefore, Chevron seems to be saying "if you want to restore the site to its historic use as an estuary for salmon recovery, you have to pay for the removal of toxic waste yourself."

The company activities brought intentionally into the estuary area toxic materials for its economic gain. It should not be permitted to leave such toxic trash close to the Puget Sound. Doing so prevents the property from being restored as a functioning estuary. Further, concerns about future rising sea levels and potential of earthquakes have not been adequately addressed by Alternative 6 which only temporarily limited the exposure by capping toxic materials but not removal.

In conclusion, the Unocal property should be restored to its original non-toxic condition. Don't let Chevron leave its toxic trash next to the Sound and between the Edmonds Marsh, Willow Creek flowage and the Sound.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

107. Comment from: William Alexander, 11.21.24

I support the comments made by the Point Edwards Unocal Review Committee. The committee asks to have the feasibility studies revised to include a salmon recovery estuary as a potential future use for the site. Public concerns need to be adequately included as significant influence to the plans presented for completion of the site cleanup.

Why should we write off lands that have been contaminated, especially to pass on the costs from those that have done the environmental damage?

This marsh estuary could be a jewel and an example for other shoreline cities to emulate in the restoration of creeks and estuaries. There is potential for the estuary to support a massive run of salmon, and be a significant stopover for bird migrations. Recently, it has been reported that resident orca pods have converged in the sound nearby due to the record runs of salmon

showing up at the smaller creeks, such as Piper's Creek. Please do a complete cleanup that would allow a salmon run that could help maintain the endangered orca populations.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

108. Comment from: Donald Ricker, 11.21.24

See the original comment in Appendix A (PDF).

Kristen, here are a few questions that I have regarding the Edmonds Marsh:

The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers billions of dollars.

Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?

Why does Ecology say that they do not want to dictate the use of the Unocal site when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?

Donald C. Ricker
51 Pine Street #308
Edmonds, WA 98020

Response

Thank you for your comment. Please see Summarized Topical Response [B. Model Toxics Control Act Rule](#) and [C. Tribal Rights and Interests](#). While a Feasibility Study needs to evaluate the cleanup technologies that may be used to clean up the Site, the alternatives cannot always include every possible combination of those technologies (in this case, every combination of spot excavations and institutional controls). That does not eliminate the possibility of a combination of technologies being selected as the final cleanup in the Cleanup Action Plan.

109. Comment from: Suzanne and Jim Kuhlemeier, 11.21.24

See the original comment in Appendix A (PDF).

We are asking Ecology to please consider the use of the subject property as a salmon recovery estuary. There has been continued and dedicated support for Willow Creek and marsh restoration. Providing a salmon recovery estuary provides a unique opportunity for future generations to both enjoy this beautiful marsh and help save Puget Sound from further environmental impacts. Please support salmon restoration by explicitly stating this in the Feasibility Study as a future use of the Unocal/Chevron site. Thank you.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

110. Comment from: Donald Weaver, 11.21.24

I would like to see the former Unocal facility cleaned up to the greatest possible degree, not just covered over for future generations to deal with.

Response

Thank you for your comment. Your comment will be incorporated into the public concerns section of the Feasibility Study.

111. Comment from: Chuck Levine, 11.21.24

Alternative 6 is not acceptable for the following reasons:

It does not include sufficient community input

It does not envision the creation of an estuary that is a safe salmon habitat

Additional soil sampling is necessary to assure safe open space and estuary creation

It leaves excessive toxic waste on the site that should be the responsibility of Chevron to clean up

It does not incorporate the effects of sea level change/rise and flooding

It does not include the interests or input of indigenous tribes

At the very least, alternative proposals should be developed that include additional clean-up of the site by Chevron to facilitate creation of an estuary that has been shown to have very broad community support

Thank you for considering this critical community input.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

112. Comment from: Jennifer Anttila, 11.21.24

This is a problem area that Chevron is responsible for completely. They should have done the clean completely years ago.

Response

Thank you for your comment. The cleanup has been conducted in phases by Chevron Environmental Management Company on Unocal's behalf as investigations identified contaminated areas and to accommodate changes in potential land use.

113. Comment from: Brent Butterworth, 11.22.24

I don't care if the Department of Ecology thinks cleaning this up will be too expensive for Unocal. Tough luck. Unocal polluted this area for the sake of its profits, and should be held 100% responsible for cleaning it up and restoring it to its natural state. With our salmon and orca populations dwindling, it's important that we restore as much of the natural habitat of Puget Sound as possible. If Chevron executives get too many complaints from shareholders, I could not care less. Chevron makes hundreds of billions of dollars in profits every year.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

114. Comment from: Ali Monroe, 11.22.24

Chevron Corp. must be held accountable for the damage they have done to the environment. They should be held responsible for the entirety of the cleanup required for the damage they have done to the Edmonds waterfront. Restoring the estuary should be a top priority; it has been impaired long enough from the negligent actions of Chevron.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

115. Comment from: Robert Heumann, 11.22.24

There is a pretty simple rule people are taught as kids. The executives at Chevron seem to have either forgotten or were never taught. Either way, the rule is: CLEAN UP AFTER YOURSELF! If a more accurate cost-benefit analysis was conducted I'm sure they would find the degradation of this wetland far exceeds the cost of cleaning it up. It is a public resource and should be restored and protected.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

116. Comment from: Mary Huether, 11.22.24

Please clean up the ground to suit an estuary, not just cover up contaminants.

Response

Thank you for your comment. Please see Summarized Topical Response [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

117. Comment from: Kathy Moran, 11.22.24

Redo the draft feasibility study and take into account:

Sea level rise and the damage it will do to engineered covers.

Other reasonable cleanup methods.

Local and regional public input.

Tribal input and court mandates to remove fish passage barriers.

Future use of the site as a saltwater estuary.

Future costs of maintaining and repairing covers.

New soil samples.

Also, use a cleanup method alternative comparison that DOES NOT overly emphasize cost.

Cleanup the contamination, does cover it up.

Response

Thank you for your comment. Please see Summarized Topical Response [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

118. Comment from: Meagan Baldwin, 11.22.24

I echo the sentiments of the comments already submitted. Chevron should do the right thing and clean the property as thoroughly as can be done. The chance to restore the estuary cannot be ignored.

Response

Thank you for your comment. Your comment will be incorporated into the public concerns section of the revised Feasibility Study.

119. Comment from: Bernie Zavala, 11.22.24

See the original comment in Appendix A (PDF).

Thank you for the opportunity to provide comments on the draft Feasibility Study Report Addendum - Former Unocal Edmonds Bulk Fuel Terminal, Edmonds, WA 8/19/2024. Interim Actions for this site began in 2001 and have continued to the present. The following text is my understanding of what has taken place regarding the remediation of this MTCA cleanup site in Edmonds, Washington.

Interim actions have taken place in the lower yard of the Edmonds Bulk Fuel Terminal starting in 2001. Additional interim actions will be taking place in the near future per the final report (2024) of this draft Feasibility Study Report Addendum once it's approved

These past interim actions have included excavation of contaminated soils, and removal of LNAPL floating on the groundwater. Treatment of the soils and groundwater has also taken place through a Dual- Phase Extraction System starting in 2017 to the present. The cleanup levels for soil and groundwater were based on commercial use of the land for a Ferry Terminal which Washington Department of Transportation (WDOT) wanted to relocate from the present Ferry Terminal to the lower yard on Chevron property. WDOT has decided not to move forward on this project and has given the City of Edmonds the rights of first refusal to purchase this property. The residents and the City of Edmonds were enthusiastic about the possibility of "daylighting" Willow Creek through a stream bed instead of a pipeline to Puget Sound. It is not known where this new stream bed will be located but it is most likely will be through the lower yard and above the WDOT stormwater line. This is also the location of the Dual-Phase Extraction System. Chevron has committed to conduct a soil sampling survey to determine the current status of the soil quality based on the new 2024 Cleanup levels (CULs).

I recommend that based on the results of this soil survey that the current Feasibility Study Addendum be revised based on the findings of this soil sampling survey. The following bullets are questions and comments that I would like Ecology or Chevron to address before moving with the next interim action.

- Ecology did change the cleanup (CULs) soil number from commercial use to "Open Space" use. Why weren't "Natural Environment" use numbers used since there may be a possibility that the Willow Creek may be routed within the lower yard and a connection of groundwater and surface water may take place? Will these Open Space CULs be as protective as the Natural Environment CULs? Also, it would be good to take a closer look as a potential future use of this property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound which should be evaluated in a revised feasibility study Addendum.
- The 2017 draft Final Feasibility Study gave a restoration time frame for Alternative 6 as five to six years, with an end date of 2023. Why was Alternative 6 chosen again in the new FS addendum report August 2024? What will be a new restoration time frame and what will be the basis for this time frame? It also appears after five years of operation the Dual-well extraction system only operated approximately 30% of the time (see 2022 GW Monitoring and Dual-Phase Extraction System Operation Report, October 2023). Will the new optimization of the DPE system be operating in a continuous manner? What is the stated goal for the operation of Dual-Phase Extraction System?

- The WDOT stormwater line is located over the main area of the cleanup in the lower yard. This stormwater line is over 50 years old and it may need replacement or repair in the near future. Consideration should be made for replacement, repair or evaluation every five years. The last evaluation was 13 years ago. The cleanup of the lower yard is still undergoing interim action and if work is needed on this stormwater line it may be a good to conduct this work during this time period.
- Updated soil samples are needed, similar to what took place in 2018. This information or the collection of soil samples in 2018 near the DPE 1-14 extraction wells determined or gave insights to the effectiveness of the DPE system after one year of operation. The results of the soil samples revealed that at nine different locations concentrations exceeded (and in some cases doubled exceeded) the CULs. Four additional DPE 15-18 extraction well were installed to remediate the soils around four monitoring wells MW-101, MW-518, MW-129R and MW-E-R. Soil sample collection should also be collected within these four areas. Also, the 22-locations where the soil concentrations were above the new CULs and the PSVs should be included in the soil sample collection program. The soil sampling program by Arcadis in December 2018 was appropriate and a similar approach can be conducted in the near future (see Dual-Phase Extraction System as-built report addendum 12/2020). A direct push drilling method was used for this soil sampling collection. It is recommend that a Membrane Interphase Probe (MIP) be used with a PID detector along with the Direct Push Rig. This set up would be helpful with the selection for the collection of soil samples to the depth of 15-feet below ground surface (BGS).
- The soil sampling results are important and may have an impact on the re-evaluation of the cleanup alternatives in this feasibility study addendum. Alternative 4, complete excavation, may in fact, have a lower implementation cost compared to Alternative 6 (or even a hybrid between Alternative 4 and 6). I also understand that Tribal rights, climate change, and sea level rise may not have been included in cost-benefit calculations.
- The groundwater quality data may have some seasonality effects. I have only reviewed two groundwater quality data reports (2021 and 2022) that I have obtained from Ecology's website. It appears that for the TPH data there are more detections or concentrations above the CULs in the second and third quarter. It would be good to plot some trend plots (ie time vs concentration) for the monitoring wells of interest to see how the concentrations have changed through the year. Has Arcadis plotted concentration trends per monitoring well? Those would be useful charts. Concentration trends per monitoring well (or at least data from a selected group of monitoring wells) should be plotted time vs concentration per CULs.
- The discussions of both compliance and attainment groundwater monitoring is a bit confusing or not explained properly. Groundwater Compliance monitoring provides data on how effectively the remedy is operating by reducing the concentrations of the contaminants of concern, COCs. Once the COCs have met the cleanup levels, then the remedy can be shut down so the groundwater flow system can go back into equilibrium, and to see if the contaminant migration continues to desorb from the aquifer or the groundwater CULs have been met. Enough groundwater quality data must be collected from the monitoring wells after the DPE system has been shut off. Twelve independent sampling events must be used to show if attainment of the CULs has been achieved, using a statistical analysis method.

If you have any questions on the above comments, please contact me.

Bernie Zavala
Edmonds resident

Response

Thank you for your comment. The summary is an accurate account of the progress of the Site. Neither “open space” nor “natural environment” are technical designations in MTCA. “Open space” was used in the Feasibility Study to describe the current physical state of the Site, and is consistent with the classification of the marsh area in City of Edmonds documents ([PROS](#)²² and [Resolution 1508](#)²³). In MTCA terms, the cleanup goals are for “unrestricted land use”. The current soil CULs are based on the potential for human and other organisms to contact soil at the Site. Since the Site has plants, is open to animals, and is unpaved, exposure to all types of organisms was considered possible. Therefore, the current CULs, including points of compliance, are considered protective if parts of the Site were used to connect the marsh to Puget Sound.

The existing DPE system has been successful at reducing contamination in groundwater to below CULs in the areas where it has operated since 2017. The system was expanded in 2019. The areas treated by the 2019 system expansion intermittently exceed groundwater CULs during quarterly sampling. Alternative 6 proposes operating the DPE system for up to 2 more years, if trend results suggest groundwater may meet CULs over that period. Parts for maintenance of the DPE system, specifically groundwater treatment carbon filters, were unavailable during COVID, therefore the DPE system was shut down for an extended duration. The system still experiences disruptions but has operated 90% of the time over the past 2 years.

Due to the stage of the cleanup, additional soil sampling conducted at the Site focused on collecting analytical data to compare to CULs. MIP will be considered if additional delineation of soil contamination is needed.

Please see Summarized Topical Responses [I. Washington Department of Transportation Stormwater Pipe](#), [E. Updated Soil Sampling](#), [B. Model Toxics Control Act Regulation](#).

Concentration vs. Time plots will be requested for wells with CUL exceedances in the reporting period for including in annual monitoring reports.

Compliance monitoring requirements are described in [WAC 173-340-720](#)²⁴(9).

120. Comment from: Belinda Hughes, 11.22.24

²²https://www.edmondswa.gov/government/departments/parks_and_recreation/planning_projects/2022_parks_recreation___open_space

²³ <https://weblink.edmondswa.gov/WebLink/DocView.aspx?id=1571520&dbid=0&repo=Edmonds&cr=1>

²⁴ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-720>

Thank you for considering our comments. There is an opportunity here to do the right thing and remove as much toxic contaminants from this site as can be removed. Edmonds should not be left holding the bag for future clean ups because Chevron does not want to pay to clean up their mess. We have an obligation to advocate for the cleanest environment possible for present and future generations of people and wildlife. And Chevron has an obligation to clean up what they left behind. The potential for a healthy estuary should be our goal. Please hold Chevron accountable.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

121. Comment from: Keith Gordon, 11.22.24

As a homeowner who lives just a few blocks from the Unocal site, and someone who cherishes the marsh and amazing ecological diversity we have right at our doorstep, I think it is imperative that Chevron take responsibility for their actions and clean the Unocal site entirely rather than cap and cover. Petroleum products should never have been stored adjacent to such an important and ecologically sensitive landscape, and Chevron must take ownership and excavate all contaminated soil in order to preserve the marsh for future generations. Updated soil samples are needed before the feasibility study is completed, and potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound must be included in a revised feasibility study.

For me personally, I want to make sure that my four and two year-old sons can grow up and appreciate the incredible marsh and estuary that we have here right in town. I am teaching them about environmental stewardship, and they are already asking questions about how they can help improve their world. My four-year-old in particular loves the marsh, and exploring it with me is one of his favorite activities. I want to be able to tell him that we all did the right thing to protect this incredible and special place!

Response

Thank you for your comment. Please see Summarized Topical [A. Model Toxics Control Act](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

122. Comment from: Shannon Ozog Somes, 11.22.24

This property needs to be made safe for re-establishing a connection to the Sound and re-creating salmon habitat. Chevron is a multi-billion dollar corporation and can more than afford to pay for the cleanup efforts. Without our salmon, we lose our whales and part of our identity as residents of the Salish Sea. We must give every effort available to us to save our salmon and make the polluters who have endangered them do their part.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

123. Comment from: Katy Levenhagen, 11.23.24

The feasibility study to clean up the Edmonds Marsh and make it a clean passageway between the Marsh and Puget sound needs to include strategies for Unocal (Chevron Corp.) to remove all toxins and environmental hazards which it added to the area during their operation. Chevron needs to clean up the property to a level closer to how they found it. Use the WSDOT detailed and specific habitat plan developed for a reconnection between the Marsh and the Sound.

The study needs to include updated soil samples before the feasibility study is completed. Public concern must be weighted and Tribal rights and interest must be included.

There is no time to lose moving forward with a plan to fully restore the Marsh and connect it to Puget Sound so our endangered native salmon runs can use it.

Thank you for your consideration.

Sincerely,

Katy Levenhagen, Edmonds WA

Response

Thank you for your comment. Please see Summarized Topical Responses [B. Model Toxics Control Act Cleanup Regulation](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

124. Comment from: Ellen Blackstone, 11.23.24

Comments to Ecology re: Chevron/Unocal Marsh Cleanup

My thanks go to Ecology for shepherding this complicated project. The pressure, from corporation and community alike, is intense, I have no doubt.

You have clearly heard from the community that what they "want" is for the property to be cleaned up so that it can be returned to a fully functioning estuary. However, just "wanting" the marsh to be more thoroughly cleaned up so that it can eventually be restored – Alternative #4 – is not enough, we're told.

But there is more. From what I read in the Model Toxics Control Act and elsewhere, the alternative favored by Chevron, #6, doesn't meet Washington State's own guiding standards.

For instance, regarding the feasibility study, identifying cleanup goals should include: "...any planned future uses of the site and any habitat restoration or resource recovery goals for the site." At the September meeting, it seemed that we were looking only at WSDOT as a future owner, and they will most likely cede their right of purchase. But "any planned future uses" means ANY future uses — plural -- does it not? And in this case, with the vision of estuary restoration and salmon resource recovery, it seems clear that this step deserves more weight than was considered in Alternative #6. Also according to the WAC, Indian tribes' rights and interests must be considered; no mention of their concern or involvement in salmon recovery and the health of Puget Sound was made in that alternative. (Salmon recovery and the health of our Southern Resident Orcas is of huge "public concern," as well.)

Especially troublesome to me are the environmental hazards that seem not to be covered in Alternative #6. The Washington Administrative Code says: "...cleanup action must prevent or minimize present AND FUTURE (my emphasis) releases and migration of hazardous substances in the environment" and that the cleanup action "...must provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness." After the king tide and flooding of December 2022, it's clear that climate change will have a serious impact on the Unocal property, the current Edmonds Marsh, and the entire waterfront. Sweeping away or otherwise disengaging the caps and covers that are part of Alternative #6 could allow the contamination that remains to find its way into Willow Creek and Puget Sound. And that area is vulnerable not only due to climate change but also to seismic events, an absolute eventuality, geologists tell us.

In addition, all those risks would require regular, careful monitoring. But there is no mention in Alternative #6 of on-going management of the possible risks, an expense in itself.

There is a list in Ecology's publication summary of MTCA Chapter 173-340 that seems to suggest that the disproportionate cost analysis should include these five categories of benefits:

- Protectiveness.
- Permanence.
- Effectiveness over the long-term.
- Management of implementation risks.
- Technical and administrative implementability

When the plan was that WSDOT would pave over everything and build a new terminal, perhaps caps and covers were protection enough. But with the terminal an idea of the past, the "planned future use" is now "habitat restoration and resource recovery." And given climate change and sea level rise, Alternative #6 is neither protective nor permanent in the long term for those activities. Salmon and other wildlife, along with human visitors to the area, must be afforded safer conditions.

Given all these issues, Ecology should demand an updated feasibility study, including new soil samples, and a revised disproportionate cost analysis. It's likely that the alternatives will be much closer in cost than the 10 times estimate as seen in the current DCA. Chevron carried out the activities that made the mess, making corporate profits all the while, and they should be responsible for a more complete cleanup.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [C. Tribal Rights and Interests](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), and [H. Future Planning and Long-Term Risks](#).

125. Comment from: Anonymous, 11.23.24

It is imperative that Unocal fully cleans up all of the estuary land. This land is critically important to native plants and animals. We need to do our part to encourage the return of salmon and native plants and animals. Covering up the mess is not good enough.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

126. Comment from: Wendy Kliment, 11.23.24

I would like to see a complete cleanup for the salmon not a cover up of toxic chemicals. Our children do not need to left with these problems - this mess needs to be cleaned up completely so we can move forward with a salmon program like we have at Meadowdale

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

127. Comment from: Mary Ellin Block, 11.23.24

As an Edmonds resident, I believe the Edmonds Marsh needs to be fully restored so it can once again provide critical salmon-rearing habitat and function as an estuary which supports the health of Puget Sound and its inhabitants. It is imperative that Chevron be required to excavate and permanently remove the remaining contaminants in the Marsh (Alternative 4) and that it not be allowed to merely cap and cover them (Alternative 6).

Chevron benefitted from its use of the Unocal site for decades and caused significant environmental damage. Chevron must permanently remove the contaminants and leave the Edmonds Marsh in as clean a condition as is possible so it can be reasonably maintained, or restored, by a future owner.

Capping and covering contaminants is not an appropriate, long-term cleanup solution in the Edmonds Marsh for the following reasons:

Limits Future Use: Capping and covering would limit the Marsh's potential future restoration because the remaining contaminants would need to be removed prior to daylighting the stream that connects the Marsh with the Sound. This future cleanup would add huge, likely unaffordable, costs to restoration efforts by a future owner.

Burdens Future Owner: Even if the future use of the Marsh does not include full restoration, capping and covering would unfairly burden future property owners by requiring them to assume liability for managing, and potentially removing, Chevron's contaminants.

Climate Change: Scientists have established that climate change will cause rising sea water levels and more frequent flooding along the Edmonds shoreline and in the Marsh. It would be unconscionable to leave contaminants capped and covered in the Marsh when we know that it is only a matter of time before rising water levels and flooding will likely carry these contaminants from the Marsh into Puget Sound. This would pollute our beaches and water ways and endanger people and animals.

I have these additional concerns:

Updated Soil Samples: This is the last opportunity the residents of Washington have to hold Chevron accountable for cleanup of the Marsh. Therefore it is critical that this decision be based on current and accurate data. Updated soil samples need to be analyzed before the feasibility study is complete.

Include Future Potential Restoration: The potential future restoration of the Edmonds Marsh needs be added to the revised feasibility study. The City of Edmonds and the State of Washington have already done a lot to lay the groundwork for daylighting the stream and fully restoring the Marsh.

Two WACs support the future restoration of the Marsh being included in the criteria that will be used to determine the most appropriate level of cleanup, specifically WAC 173-340-351(6)(a), which states: Include any planned future uses of the site or any habitat restoration or resource recovery goals for the site, and, WAC 173-340-708: (3) Reasonable maximum exposure, which states:

(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 reasonably expected to occur at a site under current and potential future site use.

In conclusion, the Department of Ecology needs to hold Chevron to the highest standard in this cleanup and require it to permanently remove the contaminants that remain in the Edmonds Marsh. In the years ahead, let us not look back at this critical juncture and ask incredulously, "Why, with all the available science and the decades-long focus on restoring our salmon, saving our orcas, and improving the health of Puget Sound, was Chevron allowed to cap and cover contaminants in the Edmonds Marsh?" We can, and we must, do better.

Please opt for Alternative 4, or a similar option, which requires Chevron to permanently remove the contaminants it left in the Edmonds Marsh.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [E. Updated Soil Sampling](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), [H. Future Planning and Long-Term Risks](#), and [J. Opposition to Alternative 6 and Support for Alternative 4](#).

128. Comment from: Kathy Jones, 11.23.24

Chevron's Environmental Management needs to ensure cleanup of the contaminated mess they have left at the Unocal site in Edmonds. Petroleum products, the main contaminates, are hazardous to all of life-flora and fauna. Cleanup is not easy. In the early 70s I was picnicking at Gas Works Park in Seattle. The next day I had full blown rash over my entire body. Shortly after that I read in the Seattle Times that Gas Works was closed for cleanup! I had no doubt where my skin irritation came from! Ongoing monitoring and cleanup continue to this day.

What is the best way to mitigate the issues at the Unocal site? Our knowledge has improved and our perspectives have changed since the early 70s. It's imperative the marsh and the surrounding area affected are restored for the sake of all life, present and future. Cleanup the site so it is healthy again and do it right.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

129. Comment from: Edmonds Environmental Council (Joe Scordino), 11.23.24

Tanner Bushnell, WA Dept. of Ecology;

The Edmonds Environmental Council (EEC) is concerned that the Draft Feasibility Study is lacking in presentation and analysis of additional Alternatives whose costs and environmental benefits (especially for statewide salmon recovery) may result in Dept of Ecology selecting a preferred cleanup alternative other than Alternative 6.

An obvious missing Alternative is cleanup by excavation of all remaining contaminated sites except for the one site around the WSDOT pipe where the DPE system has operated. The public has understood there are complications with cleanup around the WSDOT pipe, but can't understand why other remaining sites would be left contaminated – the DCA for this Alternative might help explain this (or indicate this should be the preferred Alternative).

Another Alternative that needs analysis would be to require cleanup of all sites necessary to allow an up-to 20-foot wide by 10-foot deep "salmon channel" (and affiliated buffer) to transverse the property without risk of contamination. This Alternative may have sub-alternatives that present different routes for the channel.

It is also not clear if there are some remaining contaminated sites, other than the WSDOT pipe, that have unique aspects that elevate their cleanup cost. If there is such disparity in cleanup costs for the remaining sites, then that should be presented and addressed in Alternatives that leave those sites (as in Alternative 6) but require cleanup of all other less costly sites. Such presentations and respective Alternatives will help the public understand if/why Dept of Ecology would still agree that Alternative 6 should be the preferred Alternative.

The EEC requests that the Feasibility Study be revised to include the above and other Alternatives that the Dept of Ecology (not Chevron) deems necessary for determining a preferred cleanup Alternative. We also request that the DCAs put more weight on benefits to salmon recovery as that is the intended future use of the property. We also request the revised Feasibility Study (as described above) be made available as a draft for public comment.

Response

Thank you for your comment. Please see Summarized Topical Responses [B. Model Toxics Control Act Cleanup Rule](#), [D. Feasibility Study Alternatives](#) and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

130. Comment from: Jane Lommel, 11.23.24

Dear Washington State Department of Ecology,

I am writing to vigorously support #4 plan to remove the remaining contaminated soil at the Unocal Edmonds Bulk Fuel Terminal 078 with Chevron being held fully responsible for all costs incurred.

Why? The EPA should not allow Chevron/Unocal, who reaped vast profits for nearly 70 years while contaminating the Edmonds Marsh, to walk away now, leaving future expenses and environmental dam for taxpayers to bear. Chevron has the moral responsibility to make whole again the land they polluted for 70 years.

We citizens of Edmonds are willing to do the work to restore the Marsh once the toxins are removed for many future generations. But it is important to have a revised feasibility study, updated soil samples, and assessment of the environmental hazards of NOT cleaning up this property including in the decision making process.

I sincerely hope that you will take all public comments into consideration, especially from local residents who are directly impacted by this abomination next to such a valuable natural resource in Edmonds.

Thank you, Jane Lommel

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

131. Comment from: Greg Goodman, 11.23.24

After a forty year career with two of the largest Energy companies in the world (BP/Arco & Royal Dutch Shell) I've been involved in many petroleum remediation projects. This should be a classic "cradle to grave" situation with Chevron (who purchased Unocal assets) being responsible for 100% of the cleanup of toxic material. Anything less is unacceptable.....thank you.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

132. Comment from: Joe Foos, 11.23.24

The Department of Ecology should substitute a new alternative for the current Alternative 6, which is Chevron's recommended remedial alternative for the Unocal site cleanup. That new alternative would excavate sufficient newly identified locations of contaminated soil to allow a path for Willow Creek to reach Puget Sound. This would allow salmon migration and restoration. The remaining contaminated soil, including that beneath the WSDOT storm drain line, would remain on site. That contaminated soil would be contained by an engineered cover and an environmental covenant.

The current Alternative 6 does not meet the requirements of the MTCA and must be removed because it fails to meet any of these six administrative requirements:

- properly consider Public Concerns;
- properly consider Tribal Interests;
- properly consider Future Uses; or
- present data in a manner that allows the public to comment on selected Alternatives;
- Failed to consider all reasonable alternatives;
- Did not consider climate change.

The need for a new Alternative instead of the current Alternative 6, does not preclude Ecology from selecting Alternative 4, the total removal of all toxic waste from the Unocal site. The newly substituted Alternative would replace the current Alternative 6 for analysis and comparison with Alternative 4 in the Disproportionate Cost Analysis selection process.

Reasons to Substitute Alternative 6 with a New Alternative:

A. The 2024 Addendum to the 2017 Draft Feasibility Study failed to properly select the appropriate alternative actions for remediation.

1. Legal Requirements under the MTCA

The 2024 Addendum should have substituted a new alternative for the 2017 Alternative in order to meet the changed conditions surrounding the Unocal site. The Department of Ecology requested the addendum to "reevaluate remedial alternatives...." Addendum 1-1.

Remedial alternatives are analyzed and selected as a part of a process governed by WAC 173-340: the crafting of a feasibility study.

The purpose of the feasibility study is to develop and evaluate cleanup action alternatives to enable the selection of a cleanup action that meets the requirements in WAC 173-340-360 and conforms to the expectations in WAC 173-340-370. WAC 173-340-351(1).

What is to be evaluated in the feasibility study, or its scope, depends upon many factors, including the "characteristics of the site." WAC 173-340-351(5). Additionally, when developing a feasibility study, specific steps must be taken.

Steps. Except as otherwise directed by ecology, a feasibility study of cleanup action alternatives must be conducted in accordance with the following steps. The study should remain flexible to avoid collecting unnecessary information or conducting unnecessary evaluations.

(a) Step 1: Identify cleanup goals. Identify the goals for the cleanup action, in addition to compliance with the requirements in WAC 173-340-360. Include any planned future uses of the site and any habitat restoration or resource recovery goals for the site.

(b) Step 2: Identify alternatives. Identify cleanup action alternatives for evaluation in the study. The alternatives must achieve the goals identified in Step 1 and comply with the requirements in WAC 173-340-360.

WAC 173-340-351(6) (emphasis added).

After evaluating alternative remedial actions and in making its selections, the Department of Ecology must consider non-quantitative factors.

Public concerns and tribal rights and interests. For ecology-conducted or ecology-supervised remedial actions, ecology will consider the following when selecting a cleanup action:

(i) Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified under WAC 173-340-600 (13) and (14); and (ii) Indian tribes' rights and interests identified under WAC 173-340-620.

WAC 173-340-360(3)(d).

The 2017 Draft Feasibility Study (2017 FS Study) failed to properly meet the requirements of WAC 173-340 351, and the 2024 Addendum failed to correct those errors to meet the changed conditions in the environment.

2. Characteristics

Chevron accurately defined the characteristics of the site. The Unocal site is very near Puget Sound, bordering a marsh that has some access to Puget Sound. Willow Creek runs through the site and contains a salmon hatchery. Willow Creek also has access to Puget Sound. The 2017 Draft Feasibility Study and the 2024 Addendum also accurately describe the site.

3. Goals

Chevron listed cleanup goals in its Final Feasibility Study Work Plan dated October 5, 2012, at p. 14, and the Final Interim Action Work Plan dated July 19, 2016, at pp. 14-15. The objectives listed in 2012 and 2016 did not include future uses or habitat restoration as required by WAC 173-340-351(6)(a) or comply with WAC 173-340-360(3)(d), which requires consideration of

public concerns and tribal rights and interests. The 2017 Draft Feasibility Study and the 2024 Addendum added nothing to Chevron's objectives.

While Alternative 6 as drafted may meet the objectives listed in 2012 and 2016, Alternative 6 cannot achieve any goal related to public concerns, tribal rights, future use, or habitat restoration, because the Department of Ecology did not consider or set these goals. Ecology also admits that Chevron has deliberately ignored the MTCA requirements that future uses and habitat restoration which are required by WAC 173-340-351(6)(a).

The Cleanup Action Plan is designed for the remedy to be protective of human health and the environment. The current draft Cleanup Action Plan was not designed to incorporate needs of habitat restoration or daylighting tidal connection.

Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, July 2020, Publication 20-09-152, p. 5 (emphasis added).

4. Future Uses

Chevron's position on future uses is as follows: Since 2022, Ecology has stated that the potential future use for the Lower Yard is Open Space. Presumably, Ecology reconsidered the Lower Yard Future Use based on current use, comments received from WSDOT, as well as publicly available information from the City of Edmonds. Addendum, Land Use and Zoning, page 1-3.

Yet, Ecology claims that land use was determined by Chevron. Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178 July 2020, Publication 20-09-152, p. 5.

Since WSDOT made the decision to abandon the use of the Unocal site as a ferry terminal, neither Chevron nor Ecology has come to terms with what the potential future use of the Unocal site might be. The best that can be said is that Ecology considers the future use to be open space available as an ecological habitat. "Due to the expected future use of this Site as" Open Space available as ecological habitat." Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, January 2024.

In plain dictionary language, Ecology considers the use of the Unocal site as a space where plants and some types of animals might live. There is no mention how Ecology reached its decision or why it did not consider a salmon recovery estuary. A mere statement that the Unocal site can be used as open space that plants and animals can live in does not meet the Department of Ecology's obligations under the MTCA.

5. Public Concerns

The most complete description of Chevron's understanding of public concerns is in the 2024 Addendum, 6.1.6, Public Concerns, page. 6-6. The Addendum notes that public concerns relating to noise, traffic, risks, and impacted soil and water remaining on the site have been melded into Alternatives 4 and 6. There is no mention of public concern over the future use of

the site. Yet, the MTCA includes in public concerns the "future land use" of the site. WAC 173-340-600(9)(e).

There has been ample public planning on the future use of the Unocal site as a salmon recovery estuary. See paragraph 3(b) below. There have been strong and vocal public efforts to promote consideration of the future use of the Unocal site as a salmon recovery estuary at the public hearings and open houses conducted by Ecology. However, there is no mention of salmon or an estuary in the 2017 FS Study or the 2024 Addendum. The only comment is contained in the Question and Answer Sheet of July 5, 2020:

The City of Edmonds and community groups have expressed an interest in a portion of the Site being used as part of a marsh restoration project to daylight tidal connections between Edmonds Marsh (not part of the Site) and Puget Sound, making the marsh accessible for migrating salmon, including the endangered juvenile Chinook.

Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, July 2020, Publication 20-09-152, p. 3.

But when asked about Ecology's position on this public concern, Ecology only said:

Ecology supports habitat restoration projects that actively preserve, restore, and enhance existing wetlands throughout the state. Nevertheless, Ecology does not dictate how property is used by the property owner ...

Id. at p. 4.

The issue is not whether Ecology supports salmon recovery estuary as a public concern, but whether Ecology should consider a salmon recovery estuary and include a salmon recovery estuary as a public concern in the Revised Draft Feasibility Study.

6. Tribal Interests

Ecology also did not mention tribal interests in the Revised Draft Feasibility Study. Ecology says that they invite tribal participation. Public Participation Plan August 2024, p. 14. But there is no discussion of how the invitations were made or the results of any such invitations.

When selecting alternatives for a cleanup plan, the feasibility study must identify goals for habitat restoration and comply with WAC 173-340-360, which requires that any cleanup action consider Indian tribes' rights and interests identified under WAC 173-340-620. WAC 173-340-351(6).

WAC 173-340-620 states:

Tribal engagement.

(1) Purpose. Tribal engagement is an integral part of ecology's responsibilities under chapter 70A.305 RCW, the Model Toxics Control Act. Ecology's goal is to provide Indian tribes with timely information, effective communication, continuous opportunities for collaboration and, when necessary, government-to-government consultation, as appropriate for each site.

...

(3) Tribal engagement plan.

(a) Ecology will develop a site tribal engagement plan that identifies Indian tribes that may be adversely affected by the site, opportunities for government-to-government collaboration and consultation, and protocols for communication.

(b) Ecology will seek to initiate meaningful engagement with affected Indian tribes before initiating a remedial investigation or an interim action at a site. Ecology will maintain meaningful engagement with Indian tribes throughout the cleanup process.

There appears to be no tribal engagement plan establishing or discussing meaningful engagement over tribal interests.

7. Failure to meet with the requirements of the MTCA

Alternative 6 cannot comply with the required consideration of public concerns and tribal rights, because there was no mention of tribal rights. Any discussion of public concerns was limited to dust, dirt, and noise, as well as containing and not removing contamination. There was a deliberate refusal to consider future uses. Put simply, Alternative 6 cannot be used as a remedial option because it fails to comply with the MTCA. A new Alternative is necessary.

B. What considerations should go into selecting a replacement for Alternative 6?

1. The future use of the site must be considered.

Plans exist for the use of the Unocal site as a salmon recovery estuary. The Washington State Legislature in a budget note gave the COE the right of first refusal to purchase the Unocal site from WSDOT to "rehabilitate near-shore habitat for salmon and related species." The COE and WSDOT entered into a Memorandum of Understanding (MOU) on the procedures for the purchase of the Unocal site from WSDOT. The Edmonds Marsh Estuary Advocates (EMEA) has circulated a vision of a possible salmon recovery estuary, which is one possible outcome for the Unocal site. EMEA has also helped the COE to obtain a National Fish and Wildlife grant to study sea level rise and use of the Unocal site for salmon recovery.

These plans should have been mentioned in at least the 2024 Addendum. The MTCA does not require consideration of future use be based upon use by current owners or a prospective purchaser. The MTCA speaks of "any planned future uses of the site and any habitat restoration or resource recovery goals of the site." WAC 173-340-351(6)(a) (emphasis added). WAC 173-340-708(a and b) speak of "potential future site use." These plans for future use will support a new alternative to Alternative 6.

2. Public concern must be properly addressed.

The purpose of the MTCA is the protection of human health and the environment. The Revised Draft Feasibility Study properly supports that purpose. But public concern is required to be

considered in achieving that purpose and public concern encompasses more than human health and the environment.

WAC 173-340-360 governs the evaluation and selection of cleanup action alternatives:

... ecology will consider the following when selecting a cleanup action: (i) Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified under WAC 173-340-600 (13) and (14) ... (ii) Indian tribes' rights and interests identified under WAC 173-340-620. WAC 173-340-360(d) (in part).

The concerns of vulnerable populations, overburdened communities, and tribal interests extend beyond human health and the environment. It is important to note that public concerns are specified as a separate and individual concept and not restricted to vulnerable populations, overburdened communities, and tribal rights and interests. The MTCA puts future use of the site into play.

The work by the Edmonds Marsh Estuary Advocates, the Point Edwards Unocal Review Committee, the Edmonds City Council, the Edmonds Mayor's Office, and the state legislature, all directed towards the Unocal site becoming a salmon estuary, must be included in the selection of alternatives for the cleanup of the Unocal site.

3. Tribal interests must be Considered.

Even if tribal interests cannot be identified through the use of a Tribal Engagement Plan under WAC 173-340-620, known tribal interests must be considered, because they are intertwined with the interests of all citizens of the State of Washington.

In *United States v. State of Washington*, 384 F. Supp. 312 (W.D. Wash. 1974), aff'd and remanded, 520 F.2d 676 (9th Cir. 1975), commonly known as the Boldt Decision, the courts recognized that, under federal treaties with the tribes, Native American tribes were entitled to take 50% of the salmon and to co-manage the salmon fisheries. In *United States v. Washington*, 853 F.3d 946 (9th Cir. 2017), commonly known as the Culvert Case, the court required Washington to replace designated culverts under its highways that impeded the passage of salmon to spawning grounds. In doing so, the court spoke of the decline in salmon stock:

A primary cause of this decline is habitat degradation, both in breeding habitat (freshwater) and feeding habitat (freshwater and marine areas) . . . One cause of the degradation of salmon habitat is . . . culverts which do not allow the free passage of both adult and juvenile salmon upstream and downstream." The "consequent reduction in tribal harvests has damaged tribal economies, has left individual tribal members unable to earn a living by fishing, and has caused cultural and social harm to the Tribes in addition to the economic harm.

Id. at 961.

The Seattle Times reported on November 19, 2023, that the 20-year cost to remedy the culverts that were barriers to salmon was between 7.3 to 7.8 billion dollars.

These tribal interests are common knowledge. Both Chevron and Ecology are charged with knowing these interests. The cost of ignoring Tribal rights is a public concern. As the Feasibility Study is designed to develop and evaluate cleanup action alternatives, the study must review and consider Public Concerns including Tribal Interests.

4. The 2024 Addendum DCA (Disproportionate Cost Analysis) fails to separate the costs for excavating those newly identified locations exceeding 2x the approved CULs from the costs of excavating contamination around the WSDOT storm line, thus preventing the public from making informed comments on the DCA and any possible new Alternatives.

It appears that there are cost effective alternatives to the cleanup of the Unocal Site that have not been studied and evaluated by Chevron. The manner in which Chevron reported the costs for Alternative 4 and Alternative 6 prevents the public from adequately commenting on the Alternatives or adequately exploring alternatives not considered by Chevron.

The costs of total excavation under Alternate 4 have risen. In 2024, the site- specific TEE that was directed by Ecology after WSDOT abandoned its planned ferry terminal and Ecology became uncertain as to the site's future use was released. Addendum, p. 1-2. A TEE determines whether the release of a hazardous substance in the soil poses a threat to plants, animals, or humans. A TEE will set site specific cleanup standards for the site. The data collected from the study will be used in determining cleanup standards for the site. The specific procedures prescribed for a TEE are not suitable for evaluating wetlands or surface water. WAC 173-340-7490(1). The new TEE was requested by Ecology because Ecology did not recognize that the potential future use of the site could be a salmon recovery estuary, and the site was bordered by plants and animals. Addendum, pp.1-2 and 2.2. (With this uncertainty in proposed end use for the Lower Yard) and (A site-specific TEE is required if a site is located on, or directly adjacent to, a natural area.)

In 2017, when the DCA was estimating the cost of excavation for Alternative 4, the areas subject to excavation were a large area near the WSDOT Stormwater Pipe and 4 small locations labeled "statistically insignificant." The estimates ranged from a low of 5.473 million dollars to a high of 8.645 million dollars. In 2024, when doing the same cost analysis for Alternative 4, nothing had changed except that the new TEE had exposed about 16 new locations of contamination. These new locations increased the 2024 cost estimates for Alternative 4 from a low of 8.021 million dollars to a high of 11.427 million dollars. The 16 new locations had increased the low estimated cost of excavation by 2.568 million dollars and the high estimated cost by 2.782 million dollars. The average cost of excavating the 16 new locations of contamination is \$167,187.

But the cost of excavating the new locations of contamination is not equal. The 2024 Addendum speaking of the high excavation costs for Alternative 4 notes:

Excavation of additional areas where COPECs exceed the site CULs will also require shoring to protect the BNSF ROW (Right of Way) and the toe of the northwest slope of the lower Yard. These requirements contribute to the significant cost of these alternatives.

Addendum, page 6.7.

At the public hearing on September 16, 2024, the contaminated soil was reported as being "very shallow." The Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, Question 7 reported that the contamination was within 4 feet of the surface.

So, there are locations that are high cost to excavate and those that appear lower in cost. But Chevron has not reported the cost to excavate the individual locations of contamination. Perhaps this can be done as the 2024 revision of Alternative 6 includes Chevron conducting additional soil sampling of the new locations. If so, the public can estimate the cost of excavation a channel through the contaminated locations.

The calculations in this comment indicate that there is room for viewing other possible alternatives for cleanup. It very well may be possible to excavate a portion of the newly identified impacted soil and meet the requirements of the MTCA. These possible alternatives should have been considered in the 2024 Addendum.

5. The Public is unable to properly comment on key portions of the Revised Draft Feasibility Study because of the way essential data or information is presented or not discussed.

The MTCA is replete with requirements that the public be allowed to comment on the analysis and decision made in cleaning up a toxic waste site. However, the Revised Draft Feasibility Study does not allow appropriate public comment on some key points.

- The weight given to public concern and Tribal Interests is unknown. When objectives were set for Alternative 6, public concern and tribal interests were not mentioned. Final Interim Action Work Plan dated July 19, 2016, pp.14-15. This is not to say that the objectives were wrong, they were just inadequate. When Public Concerns were finally discussed, they remained limited to Chevron's 2012 and 2016 vision of the Unocal site. New issues were brought to Chevron and Ecology around a salmon recovery estuary, and they remained silent. That silence raises concerns over what weight they were given in the Disproportionate Cost Analysis. All that the feasibility study can say is that the old views were considered in Alternatives 4 and 6. But what weight in the Disproportionate Cost Analysis was it given to the concerns of the citizens who attended meetings, the concerns of the City of Edmonds and the concerns of the tribes? If any weight was given, it is unknown.

- Also unknown is what the cost would be to excavate some of the newly identified locations of contamination produced by the 2024 TEE. Without this information, no appropriate comment can be made about the selection of alternatives. The feasibility study is designed to review reasonable alternatives. Without looking at the cost of excavating individual locations of newly identified toxic waste (SWLY A 12WALL, EXB14-FF-6-4, etc.,) no real comment can be made on whether or not all reasonable alternatives have been explored.

- The Revised Draft Feasibility Study does not discuss climate leaving the public unable to comment on whether climate change has been properly considered.

(a) WAC 173-340-360 (6)(f) requires that the remedial investigation of the site include the effect of climate change.

(b) WAC 173-340-360 (3)(a)(v) requires that cleanup actions have resilience to climate change.

(c) WAC 173-340-(360)(d)(5)(iii)(A)(III) requires that when doing a DCA for a cleanup action selection when evaluating long term effectiveness, the feasibility and cleanup action must consider the resilience to climate change impacts.

The Revised Draft Feasibility Study does not consider these factors.

Given the fact that the Unocal site is a low land former marsh bordering the Edmonds Marsh and the critical slope upon which Point Edwards sits as well as very near Puget Sound with its significant wind and wave action, climate change must be considered. The question is not whether these considerations would change the ultimate decision. Rather the public has a right to comment on why these considerations should or should not impact the ultimate decision.

III. Conclusion

The MTCA guides the selection of alternatives for cleanup of toxic waste sites. Unless the requirements of the act are followed, including consideration of public concerns, future use, tribal interests, and habitat restoration, a skewed result considering only the cost of removal will occur. That is what has happened here.

While Chevron may have been surprised by WSDOT's abandonment of its ferry terminal, there was time and information available to consider the non-quantitative requirements of the MTCA. WSDOT changes in its plans and Ecology changes in regulations could have been handled by the 2020 Addendum. But new issues raised by the public were ignored and tribal interests were not considered.

What Chevron wants to do is to save money by leaving islands of toxic waste within the Unocal site, knowing that these spots of remaining toxic waste will have to be removed in order to create a channel opening the Unocal site to Puget Sound to salmon. Chevron has a duty to remove toxic waste so that the site is not only safe for humans and the environment, but also that the site can be used. While not falling under the explicit rule of *United States v. Washington*, the Culvert Case, what Chevron is doing clearly disregards tribal interests. Chevron is leaving barriers to salmon recovery in place and telling others, "If you want to use the site for salmon recovery, you have pay for the removal of our toxic waste."

If this were a culvert it would not be allowed to happen.

Response

Thank you for your comment. Please see topical summaries including part [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration/Habitat Protection](#), [H. Future Planning and Long-Term Risks](#), and [J. Opposition to Alternative 6 and Support for Alternative 4](#).

Regarding references to the July 2020 Questions and Answers sheet published by Ecology. Several changes have occurred since the 2020 Q&A, resulting in some of the answers to be outdated and not applicable. The Terrestrial and Ecological Evaluation for the Site was redrafted in 2024 which considered the potential future use of the Site as open space, consistent with City of Edmonds documents ([PROS](#)²⁵ and [Resolution 1508](#)²⁶). The Washington Administrative Code describing the need to consider the goal of habitat restoration ([WAC 173-340-351](#)²⁷(6)(a)) was also added in 2024.

Table 6-3 of the FS Addendum includes cost details of each alternative. Costs for excavation of contamination in the WSDOT stormwater pipe area are separated from the costs of excavation of the shallow localized contaminant areas. Line-item costs are provided for the tasks needed for excavation, including shoring for each area.

133. Comment from: Jennie Berger, 11.24.24

Unocal needs to continue to clean up this site. Humans and animals deserve to live on non-toxic land.

Response

Thank you for your comment. Your comment will be incorporated into the public comments section of the final Feasibility Study. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

134. Comment from: Candace Jarrett, 11.24.24

Chevron created this disaster. Chevron has the money and the resources and the absolute obligation to clean up the damage they did.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

²⁵

https://www.edmondswa.gov/government/departments/parks_and_recreation/planning_projects/2022_parks__recreation__open_space

²⁶ <https://weblink.edmondswa.gov/WebLink/DocView.aspx?id=1571520&dbid=0&repo=Edmonds&cr=1>

²⁷ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-351>

135. Comment from: Paula Mueller, 11.24.24

See the original comment in Appendix A (PDF).

Ladies and Gentlemen:

The Point Edwards Unocal Review Committee and the Point Edwards Homeowners Association board of directors recently submitted a detailed letter outlining a number of concerns with the most recent proposal for addressing the contamination clean-up for the site adjacent to the Edmonds Marsh.

In support of that letter, I am expressing my own concerns as outlined below.

1. Why was the Memorandum of Understanding between the City of Edmonds and WSDOT not mentioned to show our community concerns and plans?
2. Why was the fact that the state legislature gave the City of Edmonds a right of first refusal to purchase the Unocal site not used to show our concerns?
3. Why was the fact there has been significant support for a salmon recovery estuary not commented upon in the Feasibility study or Addendum.
4. Why does Ecology say that the future use of the Unocal site is as an ecological habitat?
5. Why does Ecology say that they support salmon restoration but will not say that one planned use of the Unocal site is as a salmon estuary?
6. Why does Ecology say that they do not want to dictate the use of the Unocal cite when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?
7. In the 2017 Feasibility study what percentage weight was given to public concerns?
8. In the 2017 Feasibility Study what weight was given to Tribal concerns?
9. What objectives were set for public concerns and Tribal rights and interests?
10. Why is there no documentation on what invitations were sent to the tribes and their responses?
11. What tribal engagement plan was developed for the Unocal site and why is it not listed in the feasibility study?
12. Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?
13. The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers billions of dollars. Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

At a time when our State, led by Governor Inslee's own efforts, has done much to remove dams, redesign stream flows and remove and enlarge culverts that impede salmon migration, it seems that the Department of Ecology is missing an opportunity to further support for this important restoration in the city of Edmonds.

Respectfully,

Paula L Mueller
paulamueller@comcast.net
206-930-8165
Point Edwards
55 Pine St., Unit 304
Edmonds, WA 98020

Response

Thank you for your comment. Responses to each question follow:

Questions 1-6) There is a clear trend in feedback from the public indicating more weight should be placed on the concern for marsh and creek restoration. The Public Concerns section of the Feasibility Study (FS) and the weighting and scoring will be revised to reflect this concern in the final FS. MTCA requires Ecology to consider any planned future uses of the Site and any habitat restoration or resource recovery goals. Ecology does not dictate how property is used by the owner or subsequent owner – so long as that use does not impact the cleanup.

7) 12%

8) In 2017, MTCA did not require an explicit discussion on how Tribal concerns were evaluated when determining or weighing the benefits associated with each cleanup action alternative. Currently tribal concerns are taken into account when scoring each DCA category. There is not a separate category for tribal concerns.

9) Both public concerns and Tribal rights and interests are considered when evaluating benefit of cleanup alternatives for the FS. As noted above, the Public Concerns section of the FS and the weighting and scoring of each alternative's benefits will be revised to reflect the public's concern for marsh and creek restoration.

In addition, public participation is required at specific steps during the [MTCA cleanup process](#).²⁸ The [Public Engagement Plan](#)²⁹ outlines this process and discusses how the community can participate. To date, we've provided public input opportunities for legal agreements, interim actions, the remedial investigation, and the FS. We've also held community meetings to provide updates and answer questions. We will hold a future comment period for the draft cleanup

²⁸ <https://ecology.wa.gov/MTCA-process>

²⁹ <https://apps.ecology.wa.gov/cleanupsearch/document/145524>

action plan (CAP) and provide additional outreach as needed and subject to Ecology's availability of staff and resources.

Regarding Tribal rights and interests, Ecology's Northwest Toxics Cleanup Program is currently in the process of meeting with all Tribes in the region to understand their priority concerns for toxic cleanup sites. Ecology is fully committed to working with the Tribes in a government-to-government relationship to protect and manage shared natural resources. For more information, please see Summarized Topical Response [C. Tribal Rights and Interests](#).

Questions 10 and 11) Please see Summarized Topical Response [C. Tribal Rights and Interests](#).

12) While an FS needs to evaluate the cleanup technologies that may be used to clean up the Site, the alternatives cannot always include every possible combination of those technologies (in this case, every combination of spot excavations and institutional controls). That does not eliminate the possibility of a combination of technologies being selected as the final cleanup in the CAP.

13) Please see Summarized Topical Response [C. Tribal Rights and Interests](#).

136. Comment from: Earl Larson, 11.24.24

Why was the fact that there has been significant support for a salmon recovery estuary not commented upon in the Feasibility study or Addendum?

Not only should this be a sanctuary for salmon, a healthy estuary will be an extreme benefit to the ecological well-being of the Sound.

Response

Thank you for your comment. Estuary recovery will be added to the public concerns section of the final Feasibility Study.

137. Comment from: Holly Hess, 11.24.24

When Chevron acquired Unocal they took on the risks associated. They should pay for a cleanup that allows for full restoration of this property as a functioning estuary. Factors such as sea level rise need to be considered in the evaluation as well.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#), and [B. Model Toxics Control Act Cleanup Regulation](#).

138. Comment from: Anonymous, 11.24.24

Chevron Corp. made the mess — they should clean it up and restore the property to the level they originally found it. A revised feasibility study should include the potential future use as a restored estuary reconnecting the Edmonds Marsh to Puget Sound. Environmental hazards such as climate change and sea level rise need to be included for decision making on cleanup plan. Another cleanup plan between complete excavation(Alternative 4) and no excavation (alternative 6) should be considered. Updated soil samples are needed before the feasibility study is completed.

Thank you.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [D. Feasibility Study Alternatives](#), and [E. Updated Soil Sampling](#).

139. Comment from: Joan Bloom, 11.24.24

The Department of Ecology's decision will affect generations to come. Chevron Corp/Unocal reaped enormous profits in the process of polluting the Edmonds Marsh. They MUST be required to clean up the mess they made.

A Memorandum of Understanding (MOU) between WSDOT and City of Edmonds (COE) allows Edmonds first right of purchase for the "intended use of the property to rehabilitate near-shore habitat for salmon and related species."

The public, COE and Tulalip Tribes are asking that Chevron clean the property to a level closer to how they found it, enabling the future property owner to "rehabilitate near-shore habitat for salmon and related species" without incurring additional costs.

A new Disproportionate Cost Analysis (DCA) must be performed using a comparison method that includes the future costs of engineered covers. A cleanup plan between complete excavation, Alternative 4, and no excavation, Alternative 6, must be considered.

Environmental hazards (sea level rise and stormwater flooding) will increase the risk that engineered covers will fail. Environmental hazards from climate change and sea level rise, despite being required to be included, have NOT been included in cleanup plan decision making. A climate vulnerability assessment is needed before choosing the final clean-up plan. It should include:

- Tribal rights and interests.
- Updated soil samples.

- Location of the property in a Seismic Hazard Area.
- Location of the property in a tsunami zone, flood plain, and beside the shoreline (subject to sea level rise).

Washington Administrative Code (WAC) reference:

"WAC 173-340-708

(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."

Chevron/Unocal would like the property to be considered for future residential use which escalates the value of their property. This ignores the glaring fact that the property is located in a large seismic hazard zone. Residential is not allowed in seismic hazard areas. Edmonds' Critical Areas Ordinance states the following allowed uses in seismic hazard areas:

<https://www.codepublishing.com/WA/Edmonds/#!/html/Edmonds23/Edmonds2380.html>

B. Seismic Hazard Areas. The following activities are allowed within seismic hazard areas:

1. Construction of new buildings with less than 2,500 square feet of floor area or roof area, whichever is greater, and which are not residential structures or used as places of employment or public assembly;
2. Additions to existing single-story residences that are 250 square feet or less; and
3. Installation of fences. [Ord. 4314 § 105 (Exh. A), 2023; Ord. 4026 § 1 (Att. A), 2016; Ord. 3527 § 2, 2004].

NOTE: "which are not residential structures" !!!!!!!

As a member of the public, I beg you to protect the Edmonds Marsh for all generations living now, and for future generations to come. I beg the DOE to include ALL environmental hazards that affect future development of the Edmonds Marsh, and to enforce clean-up requirements upon Chevron/Unocal that supports the COE's "intended use of the property to rehabilitate near-shore habitat for salmon and related species."

Respectfully,

Joan Bloom
Former Edmonds City Councilmember

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

Additionally, Unocal has already entered into a Purchase and Sale agreement with WSDOT that provides for WSDOT to assume ownership of the Property once certain remedial work identified in the agreement is complete. Consequently, Unocal is not seeking to increase the value of the Property by transitioning its use to residential development.

140. Comment from: Diane Buckshnis, 11.24.24

See the original comment in Appendix A (PDF).

Greetings,

Attached is the public comment submitted today by our new non-profit organization known as the Edmonds Environmental Council (EEC). The group was created to combat the bad codes passed by local jurisdictions without using best environmental science or receiving biased reports that cause poor environmental policies and practices. All of which threatened our environment and human health and future generations will suffer considerably from the unintended consequences. Our board understands local legislative decisions facing Administrations with these alarming State housing mandates. Our Board has decades of knowledge about the Edmonds Marsh (backed by science from the Edmonds Stream Team) coupled with state and local legislative knowledge of regulatory requirements. We also understand the agency pressures that come into play when large Corporations want to bury “past bad environmental actions” and can commiserate; but that pressure should not be acceptable action. For those that haven’t checked, Chevron’s annual revenue in 2023 was \$200.949BB; and year to date, as of 9/2024 was \$197.746BB - so to ignore cleaning those 22 hot spots and make them part of any restrictive covenant is plain wrong. Chevron MUST pay to clean up their hot spots as they created them and this requirement should be a normal course of business.

I also included my Public Private Proposal that I sent a couple of weeks ago as I understand the “Little Island” link was broken. For this proposal to work and enact change, the Governor’s Office will need to be actively involved and want to continue to promote Governor’s Inslee’s initiative of “NET ECOLOGICAL GAIN” and help our environment through restoration programs as the Governor can require the transfer from one agency to the City of Edmonds. So, I am hopeful that once Governor Ferguson takes office, the City of Edmonds will once again meet with the Governor’s group to discuss this opportunity.

Thank you for your time,

Diane Buckshnis

Edmonds City Council and WRIA 8 Salmon Recovery Council 2010-2023

Puget Sound Partnership Salmon Recovery Council 2015-2023

WRIA 8 Salmon Recovery Council Grant Funding Committee 2014-2024

Visit www.edmondsenvironmentalcouncil.org for details about our mission.

(Comment #129 is the above referenced comment from the ECC. Comment #39 is the above referenced comment presenting a Public Private Proposal)

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#).

141. Comment from: Ronald Eber, 11.24.24

Please require full and complete "clean-up" of the Unocal land. Clean means clean and not leaving any residue of contamination for future owners or generations. Chevron made the mess and they need to clean it up. The citizens and City of Edmonds have a longstanding goal to restore the Edmonds Marsh to a fully functional estuary suitable for salmon habitat and restoration. It's MOU with WSDOT, Resolution 1508 and the PROS plan all call for restoration and expansion through the Unocal land. Alternative # 6 is the right choice. The land is not suitable for residential, commercial or industrial use given the currently known critical areas, shoreland management areas, seismic hazards and expected sea level rise. Just say no to anything less than a full clean-up. Many have submitted specific comments about the land and inadequacies of the current DEIS and I support more inventories for updated soil samples and evaluations of costs and levels of contamination. What is cheap or cost effective for Chevron does not matter. It is the cost to the future that matters. Do not let Chevron pass the buck onto the future.

(Please see Comment 160 for correction)

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [E. Updated Soil Sampling](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

142. Comment from: Jesse Langdon, 11.24.24

Chevron literally made over 21 billion dollars in profit in 2023. They can afford to fully clean up the former Unocal Edmonds Bulk Fuel Terminal site. They should NOT be allowed to just cap the existing contamination and walk away. The Puget Sound is in desperate need of coastal restoration, and fully restoring Edmonds Marsh to a saltwater marsh and estuary is a vital component of that effort.

Response

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

143. Comment from: Al Snapp, 11.24.24

I have attended two public meetings in which Dept. of Ecology personnel have explained the current state of planning for the Unocal clean-up of the property adjacent to the Edmonds Marsh. I believe the proper course of action would be to consider some additional information and perspectives and to reject choosing clean-up alternative 6 and to require a clean-up plan closer to Alternative 4. I don't think that the importance of the polluted property as a wildlife sanctuary adjacent property has been properly weighted so far. Nor has the historic evolution of the property from time honored indigenous resource to commercial property to prospective key component of the restoration of a vital environmental and cultural resource

At it's most basic formulation the state owes the citizens to require Unocal or Chevron, the current industrial owner to conform to a basic tenet which is they made the mess by polluting the land and its many natural strengths and they rightfully should not just partially clean it up but should restore it to close to the natural state.

At a time and place when salmon runs and other natural treasures have been threatened, Ecology is presented with an opportunity to use the authority of the state on behalf of its citizens to right the imbalance and by doing so support and partially achieve progress toward restoring lost natural treasures.

Without a clean soil to sufficient depth and deeper than alternative 4 requires, there will not be a viable route through the property for the much needed estuary restoration so that the creeks feeding the Marsh have a clear and open channel to re-connect the Mary and the upper creek regions with Puget Sound.

So as a citizen of Edmonds and the State of Washington I call on our Ecology administrators to do take the right course and require a complete clean-up of the pollution to the Unocal property adjacent to the Edmonds Marsh. Either adopt Alternative 4 and require complete clean-up or develop an alternative that essentially achieves the complete clean-up of a preponderance of the property to allow for the creation of a safe to marine wildlife channel to restore the estuary.

If Ecology needs to negotiate with Unocal or Chevron and insist on this more complete clean-up the threat of legal action should not be a deterrent. If the issue comes before a legal adjudication I believe the preponderance of necessary justification for the more complete clean-up exists.

Finally it did not seem from the presentations from Ecology that public sentiment has been weighed clearly or sufficiently. I hope the public comments now submitted will lead necessarily to better inclusion of that element and a result in line with what I am advocating.

Thank you for all the work that has gone into finding the right way forward with this project.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

144. Comment from: Glynis Cady, 11.24.24

The site should be cleaned up, not covered up. Edmonds did not make the mess and we should not have to clean it up, nor should we leave it for future generations. Climate change will impact this area. We should not settle for a cover up.

Thank you,

Glynis Cady

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [B. Model Toxics Control Act Cleanup Regulation](#).

145. Comment from: Stephen Wilhelm, 11.24.24

This property needs to be made safe for re-establishing a connection to the Sound and re-creating salmon habitat. Chevron Corporation made the mess at this site, and they should clean it up. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study. I also think a more accurate cost-benefit calculation is needed. You need to include environmental hazards, especially from climate change and sea level rise in the decision making for this cleanup plan. Further, I don't believe Public Concern has been properly weighted in the current plan.

I believe that a cleanup plan between Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered for this property. I also believe tribal rights and interests must be included in the feasibility study. Finally, I believe updated soil samples are needed before the feasibility study is completed.

Thank you for soliciting public input on this property cleanup plan.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

146. Comment from: Maureen Traxler, 11.24.24

I strongly support Alternative 4, requiring Chevron to remove the contamination from the site. Alternative 4 is the only way to eliminate the likelihood that the contamination on the site will spread to Puget Sound and other areas of the watershed. It's possible there may be an acceptable compromise between Alternatives 4 and 6, but Alternative 4 is the only acceptable solution that's been presented. I'm very concerned that, if Alternative 6 is chosen, the contamination will be released in the future due to rising sea levels and weather changes caused by climate change, and by earthquakes.

In addition to containment of contamination, my other major concern is that the Marsh be left in a condition that would allow future restoration of its connection to Puget Sound. The city of Edmonds has clearly expressed its interest in acquiring the property so that it may restore the estuary and contribute to salmon recovery. Chevron and the State of Washington owe it to the community, including the tribes, to do the best cleanup that can be done. The Marsh is currently a wonderful nature site, but it doesn't compare to its condition at the time Chevron acquired the property.

Equity considerations also favor Alternative 4. Chevron is responsible for the contamination. The benefits of contaminating the Marsh accrued to Chevron for decades, so it should be required to clean up the site. Ideally, they would leave the site as they found it.

The Feasibility Study should seriously address the environmental hazards, including rising sea levels and other effects of climate change. It must address the interests of the Tribes, and the concerns of other members of the public.

Thank you,

Maureen Traxler

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), and [D. Feasibility Study Alternatives](#).

147. Comment from: Vanessa Jamison, 11.24.24

1. Chevron Corporation made the mess — they should clean it up.
2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study.
3. A more accurate cost-benefit calculation is needed.
4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.
5. Public Concern has not been properly weighted.
6. A cleanup plan between Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered.
7. Tribal rights and interests must be included in the feasibility study.
8. Updated soil samples are needed before the feasibility study is completed.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

148. Comment from: Kathleen Sears, 11.24.24

See the original comment in Appendix A (PDF).

I applaud the considerable progress that has been made during the almost 20 years that the lower yard of the former Unocal Bulk Fuel Terminal 0178 has been undergoing cleanup. Twenty years is a long time, and I can understand why Ecology and Chevron are eager to see it completed. I am writing to urge Ecology and Chevron to not stop now, though. Capping and covering the remaining contamination (Alternative 6) lack the permanence, protectiveness, and

long-term effectiveness that is needed to meet both the spirit and the law of the Model Toxics Control Act.

The Draft Feasibility Study and Disproportionate Cost Analysis need to be revised and a more thorough cleanup plan selected.

1. Chevron Corporation made the mess — they need to clean it up.

Unocal (Chevron) reaped significant financial gain from their use of the property as a bulk fuel terminal and created significant environmental contamination in the process. Alternative 6 would pass on to a future owner the cost of removing this contamination for habitat restoration and estuary reconnection. The public, the City of Edmonds, and the Tulalip Tribes are not asking Chevron to restore the wetland or reconnect the estuary- but simply to clean it up to a level closer to how they found it so that a future landowner could do so without incurring additional costs.

2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound should be considered in the feasibility study.

Future use: The Washington Administrative Codes (WACs) do not specify that planned or future uses are limited to the current landowner. **WAC 173-340-351(6)(a)** states: *Include any planned future uses of the site or any habitat restoration or resource recovery goals for the site.*

WAC 173-340-708(3) Reasonable maximum exposure states:

(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 site use conditions, as specified further in this chapter.

(b) The reasonable maximum exposure is defined as the highest exposure that is reasonably expected to occur at a site under current and potential future site use.

Documents supporting potential future use for estuary reconnection, habitat restoration and salmon resource recovery:

- Memorandum of Understanding between WSDOT and City of Edmonds giving the City of Edmonds the first right of purchase for the *intended use of the property to rehabilitate near-shore habitat for salmon and related species*. (MOU 2.8)
- A state legislature budget line item
- City Resolution 1508
- The 2022-2027 Parks Recreation and Open Space (PROS) Plan (page 116) (a PDF)
- The Parks Department 2022-2027 Capital Facilities and Capital Investment Plan (page 30)
- Memorandum of Understanding between WSDOT and City of Edmonds
- Letters from the Port of Edmonds and the Tulalip Tribes in support of the current NOAA Coastal Resiliency grant also support the potential future use of the site for restoration

of the estuary and marsh requiring excavation of the Unocal fill and contamination. (See #5 below, Public Concern, for additional support of this future use.)

WSDOT links to future use: The existing marsh pipeline blocks salmon passage in violation of the 2013 federal culvert injunction that mandates that the state remove fish passage barriers. *The surface water channel replacing the pipeline would be on the Unocal site.* Since WSDOT holds the equitable title to the property, reconnection will be a required future use. *Also,* WSDOT proposed replacing the marsh pipeline with a surface water reconnection when planning use of the Unocal property for a ferry terminal. The terminal project has been abandoned but there is a detailed and specific habitat plan developed for this reconnection.

3. A more accurate cost-benefit calculation is needed.

Currently, permanently removing all contamination through excavation (Alternative 4) is rated only 12% more beneficial than capping and covering it (Alternative 6). Ecology guidance has confirmed that the cost analysis needs to consider *both quantitative and qualitative estimates and the use of best professional judgment*. The extensive benefits of estuary restoration, wetland expansion, and salmon resource recovery should be included in the analysis of benefits. (Concise Explanatory Statement: Chapter 173-340 WAC, pages 119-120)

When considering future land and resource uses, Alternative 6 is not protective, permanent, or effective in the long term. The benefit scores for Alternative 6 should be adjusted to reflect this. A DCA comparison method should be used that does not overemphasize cost, which increases the weight given to benefits, and that includes the future costs of engineered covers.

4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup decision making.

The Draft Feasibility Study does not address the significant impacts that climate change and sea level rise will have on the Unocal property. Sea level rise will increase groundwater levels, and flood waters will more frequently inundate the site. These factors may mobilize contamination and allow it to move toward Willow Creek and Puget Sound through groundwater.

Sea level rise and stormwater flooding will also increase the risk that engineered covers will fail in the southwest corner of the site, where flood flows can pass under the BNSF railroad bridges before returning to Puget Sound. The covers are also at risk from waves that will overlap the railroad tracks in the future.

The location of the Unocal property adjacent to Puget Sound and in a seismic hazard zone also necessitates removing rather than covering contamination. **Ecology's current preferred Alternative 6 does not adequately consider the environmental hazards of the Unocal site.**

WAC 173-340-360 (3) (a) (iv) *General Requirements states: A cleanup action must prevent or minimize present and future releases and migration of hazardous substances in the environment*

WAC 173-340-360 (3) (a) (v) *General Requirements states: A cleanup action must provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness*

Ecology's climate change and sea level rise guidance:

- *Ecology believes that climate resilience should be separated out from the threshold protectiveness requirement. Specifying that a cleanup action must be resilient to climate change impacts that have a high likelihood of occurring and severely compromising the action's long-term effectiveness is critical in ensuring the long-term effectiveness and protectiveness of cleanup actions.* (Concise Explanatory Statement: Chapter 173-340 WAC, pages 51-53)
- *Ecology conducted a vulnerability assessment of the state's cleanup sites to understand the types of sites most vulnerable to climate change impacts. We (Ecology) found that sea level rise poses the highest potential risk to sediment and upland cleanup sites in or near marine and tidally influenced waterbodies. **This description accurately describes the Unocal site and supports the need for a climate vulnerability assessment prior to selecting the final cleanup plan.*** (Sustainable Remediation Climate Change Resilience and Green Remediation, Publication No. 17-09-052, 2023, page 1)

5. Public Concern has not been properly weighted.

Chevron lists noise, traffic, short- and long-term risks, and timeframe as the most common community concerns. They assert that complete excavation, Alternative 4, will be most disruptive to the public. This is a flawed assessment of the public's concern about the Unocal cleanup situation. Of the approximately one hundred people who attended Ecology's September 2024 public meeting, no one mentioned those concerns. Instead, the primary concern expressed was that cleanup be sufficient to make reconnecting the Edmonds Marsh to Puget Sound feasible. (Chevron's Feasibility Study Addendum, page 6.6)

6. A cleanup plan between complete excavation (Alternative 4) and no excavation (Alternative 6) should be considered.

Excavating contamination in the areas where the estuary restoration channel will be located and capping and covering contamination elsewhere would better address future land use, public and Tribal concerns, and the environmental hazards of the site at a cost much closer to Alternative 6.

Cost is a significant factor in weighting alternatives and the MTCA cleanup plan selection process favors the adoption of the least expensive alternative if the benefits are deemed to be close and the estimated costs are widely divergent. By submitting Alternative 4 with an estimated cost that is 10 times more expensive than Alternative #6, Chevron is almost forcing Ecology to accept Alternative 6 as the preferred option, even though it is less permanent, less protective, and less effective in the long term.

7. Tribal interests and rights need to be considered.

Ecology states that they have notified tribes of the opportunity to comment but according to the amended MTCA rules, which is not sufficient. The updates require Ecology to consider the rights and interests of Indian tribes when evaluating cleanup action alternatives in the feasibility study and in the cost analysis. There is no mention of these in the current feasibility study. The Unocal property was used traditionally by the Tulalip tribes as a "usual and

accustomed” gathering and fishing place. Tribal concerns about depleted salmon populations are well known. Tribal interest in reconnecting the Edmonds Marsh to Puget Sound to aid salmon recovery has been affirmed by their letters of support for the city’s MOU with WSDOT and for the current NOAA Coastal Resiliency grant. These interests and rights are long standing and should be included in Ecology’s and Chevron’s analyses. **WAC 173-340-620 (3) and (4)**

8. Updated soil samples are needed before the updated feasibility study is completed.

Most soil samples were collected during excavations in 2001, 2003, and 2008. Since the site contaminants have been subject to natural attenuation over the intervening years, there may be substantial changes to the number of areas that do not meet cleanup limits. This added information could have an impact on the ranking of the benefits of each proposed remedial action alternative and the cost of their implementation. If new remedial action alternatives combining engineered covers with excavation are considered, updated soil sampling will be particularly important. The disproportionate cost analysis will change based on how much of the site remains contaminated. The results of the additional soil sampling that is planned need to be incorporated into the Ecology’s updated feasibility study.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), [H. Future Planning & Long-Term Risks](#), and [J. Opposition to Alternative 6 and Support of Alternative 4](#).

149. Comment from: Chris Altwegg, 11.24.24

To Washington State Department of Ecology, Regarding the Unocal Cleanup

Thanks for the opportunity to comment.

I believe that the disproportionate cost analysis regarding cleanup of the Unocal property is flawed – it’s missing several items. Including those items (which are listed in Washington State guidelines) would bring the costs of Alternative 4 and 6 much closer. Items that are missing are:

- Public concern – this was thoroughly displayed at the meetings earlier this year, particularly the one in September. The vast majority of attendees were clearly in favor of a more intensive cleanup. Tulalip Tribes and other local tribes are also concerned. Have their concerns been addressed?
- Future use – According to the WACs, future uses include "habitat restoration and resource recovery." Neither of these was mentioned in the DCA.

- Issues of sea level rise and climate change – these are not theoretical! They WILL happen! They are happening. And they were not mentioned in the DCA, even though they are central to the "cap and cover" approach.
- There are more...

Chevron needs to take updated soil samples and do a new feasibility study. THEN revise the earlier DCA and include the items mentioned above. We might well learn that the actual cost of Alternative 4 is not that far from that of Alternative 6.

Response

Thank you for your comment. Please see Summarized Topical Responses [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

150. Comment from: Lora Petso, 11.24.24

These comments are as a citizen of Edmonds, not as a representative of any government or group.

I do not have the depth of knowledge on this topic that other Edmonds residents have, but I am attempting to support their efforts to obtain a real cleanup of this site for its obvious best use -- as a restored estuary.

Why is a cover up even an option? Bulk fuel terminal sites are known as massive sources of persistent toxic chemicals that are bioaccumulative and highly mobile in the environment. Several have been recently added to CERCLA. Have those been tested for and cleaned? Please add them to your work, test, and order them cleaned up. It is too late to pretend they aren't listed.

Why use a "residential" clean up standard? The area is largely inappropriate for residential due to frequent flooding, potential sea level rise, and earthquake liquifaction. Can you use an aquatic life standard?

Please do the right thing. It seems like a real clean up makes restoration possible, and a mere cover up creates a massive risk to the State, to any future purchaser, and to any proposed use. Under the circumstances, we can't assume the highly mobile chemicals are likely to just sit there, even if capped.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#) and [B. Model Toxics Control Act Cleanup Regulation](#). Based on historic Site activities

analysis of contaminants at the Site included gasoline, diesel, and oil range total petroleum hydrocarbons, 72 volatile organic compounds, 11 semi-volatile organic compounds, 16 polyaromatic hydrocarbons, 8 metals, and the fertilizer glyphosate. Site history was reviewed in 2022 to evaluate if recently identified environmental contaminants were used at the Site.

151. Comment from: Alan Mearns, 11.24.24

Please consider a cleanup alternative that takes advantage of natural processes coupled with ecological risk assessment. Before I retired from NOAA I was part of a team that provided guidance to the US Coast Guard during responses to oil and chemical spills including the Exxon Cldez and the Deepwater Horizon. Hydrocarbons, including diesel and PAHs degrade rapidly once exposed to water and the atmosphere. Addition of nutrients helps enhance hydrocarbon degrading microorganisms. Planting native vegetation also helps accelerate degradation of hydrocarbons when planted in the exposed soils. There is abundant literature supporting this approach. There is also abundant literature supporting ecological risk assessment using tools such as Species Sensitivity Distributions as well as soil and pore water toxicity tests during cleanups. Subsurface contaminated soil and sediments can be excavated, spread over a portion of the Lower Yard surface, tilled, treated with nutrients as appropriate, and monitored to document the rapid decline of diesel, benzene, other hydrocarbons. Additional monitoring with soil chemical measurements and toxicity tests can document the rates of contaminant loss and reductions in toxicity. This approach would mitigate shipping soils off site and be much better approach than capping. Please consider an approach that makes use, on site, of natural processes coupled with ecological risk assessment and chemical and ecotoxicity monitoring using using plant, animal and life stagea of organisms expected to proliferate in the area once cleanup is completed.

Response

Thank you for your comment. Ecology agrees that phytoremediation, bioremediation, and landfarming are great options for cleaning up contaminated sites. The majority of contamination at the Unocal Edmonds Site is between 4 and 12 feet below grade. Use of vegetation to treat deep contamination has shown limited success due to difficulty in establishing root systems at depth. Additionally, establishing roots around the WSDOT stormwater line risks damage to the pipe. Landfarming contaminated soil at the surface in the wet coastal weather presents a challenge in preventing contaminated water and sediment runoff from getting into the adjacent marsh and creeks. The active DPE system is designed to subject contaminated areas to similar conditions as landfarming without the need to disturb the soil and bring it to the surface. The active DPE system was proposed by Chevron and approved by Ecology as an Interim Action to remove contamination prior to completion of the final cleanup action plan for the Site.

152. Comment from: Susan Schlosser, 11.24.24

Please consider the following in order to make the area safe for all:

1. Chevron Corporation made the mess — they should clean it up.
2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound needs to be included in a revised feasibility study.
3. A more accurate cost-benefit calculation is needed.
4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup plan decision making.
5. Public Concern has not been properly weighted.
6. A cleanup plan between Alternative 4, complete excavation, and Alternative 6, no excavation, should be considered.
7. Tribal rights and interests must be included in the feasibility study.
8. Updated soil samples are needed before the feasibility study is completed.

Sincerely, Susan Schlosser

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), and [F. Revised Disproportionate Cost Analysis / Feasibility Study](#).

153. Comment from: Laura Walls, 11.24.24

To the Department of Ecology:

The current draft feasibility study for completing the cleanup of the Unocal parcel in the Edmonds Marsh has presented us with only two viable alternatives. #4 removes all the remaining contaminated soil, but at a cost of \$11 million, which we were told fails to meet the cost-benefit analysis. #6, which is far cheaper, simply caps the remaining contaminated soil, leaving future costs and risks to whoever buys the Unocal land. This was, we were also told, the only alternative that would meet all necessary requirements.

Yet Alternative #6 is not acceptable and should be removed from consideration. It fails to address planned public use of this site, namely, to restore it to a fully-functioning marsh-

estuary ecosystem capable of supporting salmon recovery (which requires daylighting the present culverted tidal connection) as part of a regional public park. These plans matured in the wake of WashDOT's decision to withdraw plans to use this site as a ferry terminal, which made the Unocal site available for habitat recovery and development as a public park. In the years since WasDOT's decision, this planned future use has been abundantly documented at the local and state level, and it has been expressed loudly, clearly, and repeatedly by the local community, including by the City of Edmonds, by the Edmonds Marsh-Estuary Advocates, and by the Point Edwards Owners Association Board, representing the hundreds of residents whose property literally abuts the Unocal parcel. Yet despite this documentation and these many voices stating the planned future use of the Unocal parcel, this fact has been neither included nor considered in the Revised Draft Feasibility Study, as required by law.

Nor has Ecology considered the rights and interests of Indian tribes, for whom the Edmonds Marsh-Estuary was a traditional resource base for fishing and gathering. These tribal rights and interests are clearly established by the Boldt Decision of 1975, as well as by the Culvert Case of 2017, which mandates the removal of culverts that impede the passage of salmon to their spawning grounds.

Given these facts, Alternative #6, or a revision of it, is the only remaining acceptable alternative. Yet it was rejected. Why? On the basis of a cost/benefit analysis that failed to consider either public plans and concerns, or tribal rights and interests. Nor, apparently, did the feasibility study consider the decaying condition of the fifty-year-old storm pipe that bisects the contaminated site; digging out and replacing this pipe was, we were told, a major reason for the additional expense of completing the cleanup. Yet the likely necessity of replacing this pipe in the near future in any case, given its age and the extreme pressure of high levels of water runoff associated with climate change, was not taken into consideration in the cost/benefit analysis. Nor, for that matter, were the environmental hazards caused by climate change and the resulting sea level rise, which some decades from now will cover this site entirely.

The question is: Will Chevron be required to complete the Unocal cleanup of the Marsh or be allowed to walk away with the job unfinished? It's important to state the big picture here: It was Unocal's decision to cover the Edmonds Marsh with landfill and build on it an oil terminal and an asphalt plant. For seven decades, from 1921 until 1991, Unocal, then Chevron, freely contaminated the land in and around the Marsh, directly adjacent to downtown Edmonds, with toxic petroleum and heavy metals, all the while reaping extraordinary profits. It has been extraordinarily expensive to clean up the mess Chevron left behind, and it will be more expensive still to finish the cleanup rather than allowing Chevron to cap the remaining contamination and walk away, leaving to the site's future owners the final expenses of cleanup and remediation of the damage they have done. But given Chevron's history on this site, they have the moral and legal responsibility to make whole again the land they used and polluted for so many years. We, the citizens of Edmonds, are willing to do the work to reopen the Marsh to

the Sound and restore it for future generations. But why should the Department of Ecology allow Chevron to walk away now, leaving additional expenses, and additional risks as well, for us to bear, when it is Chevron and their predecessors who reaped the profits from so brazenly closing off and poisoning our land and waterways?

Laura D. Walls
Edmonds, WA 98020

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), and [I. Washington State Department of Transportation Stormwater Pipe](#).

154. Comment from: Edmonds Marsh Estuary Advocates, 11.24.24

See the original comment in Appendix A (PDF).

Comment submitted by: Edmonds Marsh Estuary Advocates (EMEA)

Endorsed by: Sno-Isle Sierra Club, Interfaith Climate Action, Edmonds Climate Advisory Board

We appreciate the progress that Ecology and Chevron have made in cleaning up the Unocal site. However, the Draft Feasibility Study Addendum and the Disproportionate Cost Analysis (DCA) need to be amended to more fully comply with the Model Toxics Control Act (MTCA) and with Ecology guidance. Before a final cleanup plan is selected, we urge Ecology to thoroughly consider the following points.

1. Climate change and sea level rise are required to be included in the feasibility study but are not mentioned in the current documents.

WAC 173-340-360(3)(a) lists the following requirements for cleanup action plans:

- (iv) Prevent or minimize present and future releases and migration of hazardous substances in the environment;
- (v) Provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness;
- (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

Climate change and sea level rise pose significant environmental risks that must be considered. Sea level rise will increase groundwater levels and flood waters will more frequently inundate

the site. These factors may mobilize contamination and cause it to migrate toward Willow Creek and Puget Sound through groundwater.

Sea level rise, stormwater flooding, and waves washing over the railroad tracks will also increase risks of erosion. Then the likelihood that the long-term effectiveness of the engineered covers will be compromised, especially in the southwest corner of the site where flood flows pass under the BNSF railroad bridge before returning to Puget Sound.

The Unocal property's location in a seismic hazard zone, which has a high likelihood of earthquake damage, further increases the potential risk to engineered covers.

2. A more accurate cost-benefit calculation is needed.

Currently, permanently removing all contamination through excavation (Alternative 4) is rated only 12.3% more beneficial than capping and covering it (Alternative 6). Ecology guidance has confirmed that the cost analysis needs to consider both quantitative and qualitative estimates and the use of best professional judgment. The extensive benefits of a cleanup level that enables estuary restoration, wetland expansion, and salmon resource recovery should be included in the analysis of benefits. (Concise Explanatory Statement: Chapter 173-340 WAC (pages 119-120)

Cost should be a ratio to other factors, not the primary determining factor. The current DCA comparison overemphasizes cost and undervalues permanence, protectiveness, and long-term effectiveness. When considering future land and resource uses, Alternative 6 is not protective, permanent, or effective in the long term. The benefit scores for Alternative 6 should be adjusted to reflect this.

3. Public Concern has not been properly weighted.

Chevron lists noise, traffic, short- and long-term risks, and time frame as the most common community concerns. They assert that complete excavation, Alternative 4, will be most disruptive to the public. This is an inaccurate assessment of the public's concern about Unocal cleanup. Of the approximately one hundred people who attended Ecology's September 2024 public meeting, no one mentioned those concerns. Instead, the primary concern expressed was that cleanup be sufficient to make reconnecting the Edmonds Marsh to Puget Sound feasible.

4. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound should be considered.

Future use: The MTCA WACs do not specify that planned or future uses are limited to the current landowner. **WAC 173-340-351(6)(a)** states: *Include any planned future uses of the site or any habitat restoration or resource recovery goals for the site.*

The potential use of the Unocal site for estuary reconnection, habitat restoration, and salmon resource recovery is well documented. A Memorandum of Understanding (MOU) between WSDOT and the City of Edmonds and a state legislative budget line item give the City of Edmonds the first right of purchase for the intended use of the property to rehabilitate near-shore habitat for salmon and related species. (MOU 2.8)

Additional documents confirming the city's intent:

- Edmonds City Council Resolution 1508
- The City of Edmonds 2022-2027 Parks Recreation and Open Space (PROS) Plan (page 116)
- The City of Edmonds Parks Department 2024-2029 Capital Facilities and Capital Investment Plan (page 30)

5. Tribal interests and rights need to be considered.

Ecology states that they have notified tribes of the opportunity to comment but according to the amended MTCA rules, that is insufficient. The updates require Ecology to *consider the rights and interests* of Indian tribes when evaluating cleanup action alternatives in the feasibility study and in the cost analysis, yet there is no mention of these in the current documents.

The Unocal property was used traditionally by the Tulalip Tribes as a “usual and accustomed” gathering and fishing place. Tribal concerns about depleted salmon populations and their interest in reconnecting the Edmonds Marsh to Puget Sound to aid in salmon recovery are well known. Their letters of support for the city’s MOU with WSDOT and for the city’s current NOAA Coastal Resiliency grant confirm that tribal interests are long standing and should be included in Ecology’s and Chevron’s analyses.

The Boldt decision and the resulting 2013 federal fish passage injunction confirmed that Washington State has a *treaty-based duty* to preserve fish runs. This requires that blockages that impede salmon migration be repaired or removed. This court order will apply to the equitable title holder, WSDOT. Replacement of the impassable Willow Creek pipeline will require the excavation of an open channel through the Unocal parcel.

6. Chevron Corporation made the mess — they need to clean it up.

Unocal (Chevron) reaped significant financial gain from their use of the property as a bulk fuel terminal. The public, the City of Edmonds, and the Tulalip Tribes are not asking Chevron to restore the wetland or reconnect the marsh estuary to Puget Sound but simply to clean up the property to a level that will enable a future landowner to do so without incurring additional cleanup costs. Alternative 6 is unacceptable because it leaves contamination in place that would need to be removed before a channel to Puget Sound could be excavated.

7. Alternative cleanup plans between complete excavation (Alternative 4) and no excavation (Alternative 6) should be considered.

Chevron estimates the cost of removing all remaining contamination (Alternative 4) to be 10 times more expensive than the cost of capping and covering the contamination (Alternative 6). This sets up Ecology to accept Alternative 6 as the preferred option even though it is less permanent, less protective, and less effective in the long term.

Chevron’s alternatives were to completely remove all contamination or cap and cover it — nothing in between. Complete removal was not selected due to the prohibitive cost. An alternative that is a *combination of the two* is reasonable and should be considered. It would also better address future land use, public and tribal concerns, and the environmental hazards of the site at a cost much closer to Alternative 6.

8. Soil samples must be updated before the revised feasibility study is completed.

Most of the soil samples referred to in the feasibility study are 15-20 years old. New soil testing is planned, and selection of a final cleanup plan should be delayed until these results can be considered. Natural attenuation over the intervening years may result in fewer contaminated areas. This would impact the cost of each alternative and would be particularly important in evaluating alternatives that combine excavation and engineered covers.

Respectfully submitted by:

Kathleen Sears, for Edmonds Marsh Estuary Advocates

Nancy Johnson, Cynthia Jones, Bill Trueit, and Malcolm Cummings, for Sno-Isle Sierra Club

Gayla Shoemake, for Interfaith Climate Action

Georgina Armstrong, for the Edmonds Climate Advisory Board

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), and [H. Future Planning & Long-Term Risks](#).

155. Comment from: Sierra Rudnick, 11.24.24

I vote on step number 4 to completely remove all contaminated in the Edmonds's Marsh. Leave no trace of contaminated soil left behind!

Response

Thank you for your comment. Please see Summarized Topical Response [Topic J: Opposition to Alternative 6 and Support for Alternative 4](#).

156. Comment from: DC Miller, 11.24.24

In the Feasibility study nor its Addendum(s), I couldn't find any mention of significant support for a salmon recovery estuary, yet salmon are a key-stone species and as such should cause everyone to highly value habitat that enables them to thrive. The Edmonds marsh needs Chevron to pay to clean it up so no more contaminants remain, allowing salmon and many other types of flora and fauna to thrive there. Please ensure the billions upon billions in profit that were reaped from the processing plants in Edmonds are used to pay to clean up the marsh.

The former Marsh areas should NOT be paved over; they must be cleaned up at Chevron/UNOCAL's expense so salmon can safely live in a restored marsh.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

157. Comment from: Rick Miller, 11.24.24

My family and I have lived in Edmonds since 1981, and previously, my wife and I lived in north Seattle. We enjoyed the natural habitat of the Edmonds Marsh area for years before moving to Edmonds, and again once we lived in Edmonds with our children. The marsh was a key factor in our decision to live in Edmonds.

Furthermore, while I served in the U.S. Coast Guard in the 1970's, enforcing the federal "Boldt Decision" on Puget Sound fisheries allocations, I realized how critical preservation of our fisheries are to the existence and future of our local Native American tribes.

To preserve our fisheries in Puget Sound, it is imperative that Chevron clean up, rather than cover up, the remaining pollutants at the Unocal Site. As a corporation, Chevron generated many millions, if not billions, of dollars in revenue from the products processed through this site. Chevron must therefore be held responsible to pay for a complete cleanup of the site, the cost of which would be minor compared to the revenue that they site generated.

The Revised Draft Feasibility Study 2024 is not acceptable in considering all the issues that need to be addressed to ensure a proper and complete cleanup. And Alternative #6, with no excavation to remove pollutants, is completely unacceptable. Some key questions that must be addressed are:

1. Why does Ecology say that they support salmon restoration but will not say that one planned use of the Unocal site is as a salmon estuary?
2. Why does Ecology say that they do not want to dictate the use of the Unocal cite when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?
3. What objectives were set for public concerns and Tribal rights and interests?
4. Why is there no documentation on what invitations were sent to the tribes and their responses?
5. What tribal engagement plan was developed for the Unocal site and why is it not listed in the feasibility study?
6. Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), [B. Model Toxics Control Act Cleanup Regulation](#), [C. Tribal Rights and Interests](#), [D. Feasibility Study Alternatives](#), , and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

3) Both public concerns and Tribal rights and interests are considered when evaluating the benefits of the cleanup alternatives in the Feasibility Study (FS). As noted above, the Public Concerns section of the FS and the weighting and scoring of each alternative's benefits will be revised to reflect the public's concern for marsh and creek restoration.

In addition, public participation is required at specific steps during the [MTCA cleanup process](#)³⁰. The [Public Engagement Plan](#)³¹ outlines this process and discusses how the community can participate. To date, we've provided public input opportunities for legal agreements, interim actions, the remedial investigation, and the FS. We've also held community meetings to provide updates and answer questions. We will hold a future comment period for the draft cleanup action plan and provide additional outreach as needed and subject to Ecology's availability of staff and resources.

Regarding Tribal rights and interests, Ecology's Northwest Toxics Cleanup Program is currently in the process of meeting with all Tribes in the region to understand their priority concerns for toxic cleanup sites. Ecology is fully committed to working with the Tribes in a government-to-government relationship to protect and manage shared natural resources. For more information, please see Summarized Topical Response [C. Tribal Rights and Interests](#).

4 and 5) Please see Summarized Topical Response [C. Tribal Rights and Interests](#).

6) While a FS needs to evaluate the cleanup technologies that may be used to clean up the Site, the alternatives cannot always include every possible combination of those technologies (in this case, every combination of spot excavations and institutional controls). That does not eliminate the possibility of a combination

158. Comment from: Derek Benedict, 11.24.24

You MUST make UNOCAL pay for the FULL restoration of the mess that they created.

They took the profits, and then walked away without any regret or responsibility!

Response

³⁰ <https://ecology.wa.gov/mtca-process>

³¹ <https://apps.ecology.wa.gov/cleanupsearch/document/145524>

Thank you for your comment. Please see Summarized Topical Response [A. Model Toxics Control Act](#).

159. Comment from: Don J Miller, 11.24.24

This estuary needs to be restored. We have lost too much of our wetlands. Salmon are struggling. Wetlands rank among the highest ecosystems for carbon sequestration. It is irresponsible to not hold corporations accountable for the pollution they cause. Hold them accountable.

Response

Thank you for your comment. Please see Summarized Topical Responses [A. Model Toxics Control Act](#), and [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#).

160. Comment from: Ronald Eber, 11.24.24

Earlier today I submitted comments about the clean-up of the Unocal property. I misspoke and referred to the wrong Alternative as my preference.

I support Alternative #4 and NOT # 6. Chevron has a responsibility and duty to completely clean the site of the contamination they made.

Please correct the record on this and my choice.

Thank you

Response

Thank you for your comment clarification.

161. Comment from: Diane Martin Rudnick, 11.24.24

I grew up in Tampa.

With back-to-back to back hurricanes, Helene and Milton, the Tampa Bay area, provides an opportunity for us in Edmonds to consider how much flooding would impact us all.

My daughter, Sierra, and I are proud Edmonds March Estuary Advocates members. Especially because Sierra volunteered with Earth Corps at the Edmonds Marsh by removing invasive species of plants, area is special for us as longtime Edmonds residents. The Unocal cleanup site provides all Edmonds residents an opportunity not only to protect our marsh, but to move towards returning the property to a fully functioning estuary.

I believe that we need nothing less than option #4, removing ALL contaminated soil. Chevron created this mess. Time to for them to fully clean it up.

Response

Thank you for your comment. Your comment will be incorporated into the public concerns section of the Feasibility Study.

162. Comment from: Neil Gilham, 11.24.24

See the original comment in Appendix A (PDF).

Neil Gilham - Comments on Unocal Edmonds Bulk Fuel Terminal 0178 (second comment)

With the understanding that the comment period has expired, I wanted to add one more comment (my second) for consideration. I want to echo the comment submitted by Alan Mearns on November 24, 2024. Alan's comment was regarding a cleanup action alternative that was not considered or performed in any of the previous cleanup actions conducted at the Unocal site and was not presented as an alternative in the recent Public Review Draft Final Feasibility Study Addendum (FS) prepared by Arcadis.

I recommend that Chevron and their consultant Arcadis consider as a cleanup action alternative the use of onsite biotreatment of the petroleum-contaminated soils. The site has adequate space for constructing treatment cells and there is sufficient time when considered with the approximate 5-year timeframe presented in Alternative 6. There are no if this-then that contingencies as in Alternative 6. I know that Arcadis and Ecology are familiar with this approach, so I don't need to go into detail about how to do it. It has been done and I know of at least one site where it was done successfully (<https://apps.ecology.wa.gov/cleanupsearch/site/10915#site-documents>). I was involved with this project, coming in several years after the onsite biotreatment was completed.

I've been an environmental consultant for over 35 years (retired, mostly). I understand the mindset among consultants (me included) that "dig and dump" is a simple and effective approach in most cases where time and space are not available. Or the ease of putting in place an environmental covenant (and walking away?). It would be great to break out of that mold and look at the feasibility of biotreatment onsite. Whether some or all the contaminated soil is removed from the 22 identified PCS areas, the excavations could be left open, some or all could be connected to the inflow/outflow of an estuary system. The treated soil could be left in place on or near the treatment area or distributed in other places onsite as needed.

The use of onsite bioremediation at the Lower Yard could be a showcase of what can be done in an environmentally conscious way.

Thank you for the opportunity to comment (again) on the Unocal Site FS.

Sincerely,
Neil R. Gilham, LG

Response

Thank you for your comment. Landfarming contaminated soil at the surface in the wet coastal weather presents a challenge in preventing contaminated water and sediment runoff from getting into the adjacent marsh and creeks. The active DPE system is designed to subject contaminated areas to similar conditions as landfarming without the need to disturb the soil and bring it to the surface. Additionally, since a purchase and sale agreement is already in place for the property, open excavations may not align with WSDOT's planned use of the area.

Summarized Topical Responses

This section provides responses to the following main topics addressed by the commenters.

- A. Model Toxics Control Act
- B. Model Toxics Control Act Cleanup Regulation
- C. Tribal Rights and Interests
- D. Feasibility Study Alternatives
- E. Updated Soil Sampling
- F. Revised Disproportionate Cost Analysis / Feasibility Study
- G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage
- H. Future Planning and Long-Term Risks
- I. Washington State Department of Transportation Stormwater Pipe
- J. Opposition to Alternative 6 and Support for Alternative 4

Topic A: Model Toxics Control Act

This topic discusses the roles and responsibilities of the Washington State Department of Ecology (Ecology) and the Potential Liable Person (PLP) under the [Model Toxics Control Act \(MTCA\)](#)³² law. It also expands on the purpose and goals of the Feasibility Study (FS) and Cleanup Action Plan (CAP) as defined in the [MTCA cleanup process](#).³³

Response:

Ecology is overseeing cleanup work at the Site under MTCA to ensure the contamination released from operations at the property is not a risk to human health or the environment.

Roles and Responsibility of Ecology under MTCA

- Ecology oversees the PLP to ensure the cleanup effectively eliminates exposure to contaminants above Cleanup Levels (CULs). CULs are defined as the concentration of a hazardous substance in soil, water, air, or sediment that is determined to be protective of human health and the environment under specified exposure conditions.
- Ecology implements and enforces MTCA, which directs the cleanup of contaminated property to ensure established CULs are met. Ecology cannot direct restoration activities under MTCA, meaning that Ecology has no legal authority over the property's use after

³² <https://ecology.wa.gov/MTCA>

³³ <https://ecology.wa.gov/MTCA-process>

cleanup. However, when identifying cleanup goals for the Site, Ecology must consider future plans for the Site, including goals for habitat restoration.

Roles and Responsibility of the PLP under MTCA

- The PLP refers to any person who Ecology finds, based on credible evidence, to be liable for the contamination under [RCW 70A.305.040](https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.040).³⁴ For this Site, the PLP is Unocal.
- All PLPs are treated equally under the law, regardless of their background or financial assets. There is no provision in MTCA to consider a PLPs financial situation when selecting a cleanup action.
- PLPs have the option to set site-specific CULs for contaminants or use pre-established levels under MTCA. The CULs presented in the draft FS are based on both methods. CULs were established based on the protection of all receptors and exposure routes. State and federal standards, site-specific tests, and risk equations (when available) were used to determine CULs.
- Under MTCA, Unocal is NOT responsible for restoring the land to its “original condition” before it took ownership. Instead, it is responsible for cleaning up the existing land to eliminate exposure to contaminants above CULs for the Site.

Purpose and Goals of the FS under MTCA

- The purpose of the FS is to develop and evaluate cleanup action alternatives to enable the selection of a cleanup action that meets the requirements in [WAC 173-340-360](https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360).³⁵ and conforms, as appropriate, to the expectations in [WAC 173-340-370](https://app.leg.wa.gov/wac/default.aspx?cite=173-340-370).³⁶ The alternatives are evaluated against the requirements and expectations for cleanup actions in WAC 173-340-360 and 173-340-370. Alternatives presented in the FS must meet minimum cleanup standards as described in [WAC 173-340-360\(3\)](https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360(3)).³⁷
- The FS uses the Disproportionate Cost Analysis (DCA) to compare potential clean up remedies. The DCA compares the costs vs benefits of each cleanup action alternative and determines which alternative uses permanent solutions to the maximum extent practicable. The benefits to evaluate include protectiveness, permanence, cost, effectiveness over the long-term, management of implementation risks, and technical and administrative implementability. These benefits are specific to eliminating exposure to contaminants. The DCA does not consider the benefit of habitat restoration as a scored criterion. Costs included in the DCA are those needed to sufficiently clean up contaminants to eliminate exposure to human health and the environment. Costs for habitat restoration are not included in the DCA, unless habitat was impacted by construction during the cleanup.

³⁴ <https://app.leg.wa.gov/rcw/default.aspx?cite=70A.305.040>

³⁵ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

³⁶ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-370>

³⁷ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

- MTCA was updated in 2024, including some updates to requirements for the FS and DCA. Ecology used the previous requirements in all draft FS reports that were completed prior to January 1, 2024, including the draft FS for this site.
- Ecology cannot require a more expensive cleanup, unless it can be shown that it offers incrementally more benefits relative to the cost.
- The results of the FS are used to help select the cleanup action for a site.
- It is important to understand that the recommended preferred alternative in the FS is NOT a final determination of the CAP for the Site. Instead, the recommended preferred alternative considers the different technologies and possible approaches that can be used to clean up the Site. As more information is understood from additional soil sampling, Ecology will reevaluate the various cleanup technologies and approaches used in the recommended preferred alternative to determine the best path forward for the CAP.

Purpose and Goals of the CAP under MTCA

- The purpose of a CAP is to document the selected cleanup action and to specify the cleanup standards and other requirements the cleanup action must meet.
- The public will have the opportunity to comment on the draft CAP before it is finalized.

Ensuring cleanups protect human health and the environment

- It may seem counterintuitive that leaving contamination on site protects human health and the environment. However, under MTCA, contamination can be left on site if the cleanup action presented in the CAP is permanent to the maximum extent practicable. The FS identifies if contamination can safely be left on site, and the DCA determines if it would be more beneficial to remove the contamination from the site through excavation or treatment.

Topic B: Model Toxics Control Act Cleanup Regulation

This topic expands on compliance with the Model Toxics Control Act (MTCA) Cleanup Regulation ([Chapter 173-340 WAC](#)³⁸) requirements. This includes potential future uses of cleanup site properties, climate change considerations, the Disproportionate Cost Analysis (DCA) process, the selection of reasonable cleanup alternatives, public concerns, and the contingency action as it applies to this site.

Response:

Cleanup for Future Site Use

³⁸ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340>

Ecology is committed to developing a Cleanup Action Plan (CAP) that is protective of human health and the environment so the Site can be used for any potential future use, including the goals of restoring the marsh and wetland. Under MTCA, the cleanup goal for the site is to allow ‘unrestricted land use’—see [WAC 173-340-740](#).³⁹ Unrestricted land use means there are no specific restrictions on how the land can be used, such as for residential, commercial, or habitat restoration, as long as cleanup standards are met. At this point, the future Site use of the Unocal property has not been determined. Communications in 2024 from WSDOT to Ecology clarified the potential future use of the Lower Yard is not determined, therefore, Ecology must consider all possible future Site uses when determining the final CAP for the Site.

The Cleanup Levels (CULs) proposed in the Feasibility Study (FS) were established to protect humans, wildlife on land and in water, plants, and organisms living in soil such as worms and insects. However, two common exposure routes were not considered when establishing CULs: 1) drinking water for humans, due to brackish (salty) groundwater and surface water at the Site, making it unsuitable for drinking, and 2) indoor air, as no buildings are present at the Site. Therefore, depending on the future use of the site, construction of buildings would require an additional vapor assessment.

When contaminants exceed CULs and are contained on site, the cleanup action can still meet MTCA cleanup standards—see [WAC 173-340-700](#).⁴⁰ (4)(c). Based on the MTCA rule, Alternative 6 may meet cleanup standards.

FS Revision Process

As described in the various Topical Responses ([D. Feasibility Study Alternatives](#), [E. Updated Soil Sampling](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), [H. Future Planning and Long-Term Risks](#), [I. Washington State Department of Transportation Stormwater Pipe](#), and [J. Opposition to Alternative 6 and Support of Alternative 4](#)), several updates to the draft FS will be made in response to public comments received.

The process outlined in the FS will continue to be followed, as described in the MTCA Cleanup Regulations used to select a cleanup action for a site. A cleanup action cannot be selected based solely on public preference. Ecology’s Toxics Cleanup Program will continue to use cost information, public input, and other factors to assess cleanup alternatives that include removal or partial removal of the isolated areas of contamination. While an FS evaluates the cleanup technologies that may be used to clean up the Site, the alternatives cannot always include every possible combination of those technologies (in this case, every combination of spot excavations and institutional controls). That does not eliminate the possibility of a combination of technologies being selected as the final cleanup in the CAP.

³⁹ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-740>

⁴⁰ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-700>

The draft FS for the Site identified CULs and cleanup alternatives that are protective of human health and the environment, including salmon and other aquatic and terrestrial organisms. Only those alternatives that are protective were considered as feasible cleanup actions in the report.

Disproportionate Cost Analysis (DCA) Process

Ecology recognizes that the DCA puts a significant emphasis on the cost of the cleanup. The DCA is the final step of the FS. Prior steps in the FS determine if cleanup options are protective of human health and the environment. As noted above, only those cleanup options that are protective are considered in the DCA step. The DCA is a tool Ecology uses to select the most practicable alternative. [WAC 173-340-360](#)⁴¹(5)(c)(iv)(A)(II) states alternatives are compared to “determine whether the incremental costs ... are disproportionate to the incremental degree of benefits.”

The DCA benefit scoring focuses on evaluating the costs and benefits of actions that protect people, plants, and animals from exposure to Site contamination. While the DCA does not consider potential habitat restoration when evaluating the benefits of a cleanup action alternative, alternatives that satisfy the DCA and align with MTCA are likely to support such activities.

[WAC 173-340-360](#)⁴²(5)(c)(i)(c)(I) states that public concerns and Tribal rights and interests will be considered when weighting benefits in the DCA. See Topics [C. Tribal Rights and Interests](#), [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), [G. Marsh Restoration / Habitat Protection / Salmon / Fish Passage](#), and [J. Opposition to Alternative 6 and Support for Alternative 4](#), for explanations on how Tribal rights and interests and public concerns will be revised in the FS. Additionally, consideration of public concerns and Tribal rights and interests for each benefit criteria will be added to the FS.

In the original 2017 FS, Alternatives 1, 2, and 3 proposed different cleanup methods to clean up the historical Detention Basin 2 area, but all proposed using an Environmental Covenant to manage the WSDOT stormwater pipe area. The Detention Basin 2 area was excavated in 2017, therefore Alternatives 1, 2, and 3 effectively became the same and are represented by Alternative 1 in the 2024 FS Addendum. Alternative 5 proposed in-situ stabilization of contaminated soil in the WSDOT stormwater pipe area, which was rejected by Ecology as it would create a barrier to future access to the stormwater pipe. Alternative 1 was originally rejected by Ecology in 2017 due to the long-estimated restoration timeframe. Alternative 1 will be retained until current soil samples are assessed and a new estimate for restoration timeframe can be made.

Final FS Review

While there are situations where a change to a document following public comment is substantial enough to warrant a second comment period on the revised document (i.e. significant change to the cleanup alternatives considered), it is an infrequent occurrence.

⁴¹ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

⁴² <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

Additional soil sampling results are under review (see Topical Response [E. Updated Soil Sampling](#)), and the extent of changes to the FS depends on these results. It is too early to know with any certainty if the changes to this draft FS will result in an additional comment period on this document. If it does not, we will address public concerns in the draft CAP and welcome your comments when it is made available for public review and comment.

Climate Change Vulnerability

For a detailed explanation of how climate change will influence changes to the FS see Topical Responses [F. Revised Disproportionate Cost Analysis / Feasibility Study](#), and [H. Future Planning and Long-Term Risks](#).

Based on historical sampling data, contamination at the Site ranges from approximately 1 foot below ground surface to 15 feet below ground surface. Contamination exceeding concentrations protective of human health ranges from 3.75 feet to 15 feet below ground surface. While this may change with updated soil sampling, climate change impacts must consider the depth of remaining contamination. The impact of sea level rise on flooding and wave erosion will be investigated further in the revised FS. Additionally, the impact of a potential increase in flooding on the stormwater pipe will be addressed in the revised FS.

Contingency Action

A contingency plan will be implemented if compliance monitoring conducted after the selected cleanup action indicates that CULs are not met for more than 3 quarters within a 2-year period.

The FS will also be updated to include targeted excavation near MW-101 and MW-518 as a new alternative or potential contingency for all alternatives.

MTCA Updates (August 2023-January 2024)

Originally, draft Feasibility Studies were prepared for the Site in 2014 and 2017. Since the preparation of these previous draft Feasibility Studies, updates to the cleanup regulation (MTCA) and the expected future Site use have occurred.

Relevant MTCA updates included the following:

- A new section ([WAC173-340-620](#)⁴³) was added to the rule to clearly identify Ecology's responsibilities for engagement and consultation with Tribes, distinct from our responsibilities for public engagement.
- Resilience was added to climate change impacts as a requirement of cleanup actions.
- Distinct procedural steps were added for conducting a DCA. Public concerns and Tribal rights and interests must be considered when determining and weighting each of the five benefit criteria (protectiveness, permanence, long-term effectiveness, management of short-term risks, and implementability). This replaced the separate "public concerns" DCA criterion.

⁴³ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-620>

The FS will be updated to clearly describe how Tribal rights and interests, public concerns, and climate resiliency were taken into consideration when selecting a preferred cleanup alternative.

Topic C: Tribal Rights and Interests

This topic addresses how Ecology interacts with the Tribes on a government-to-government basis and how Tribal rights and interests are considered when cleaning up contaminated sites under the Model Toxics Control Act (MTCA).

Response:

The Washington State Department of Ecology (Ecology) has informed Tribes with interest in the area on the status of the Site cleanup and requested input on the Feasibility Study (FS). The Tulalip Tribe has submitted a public comment on the FS as presented in this document.

Ecology has been meeting with all Tribes whose area of interest may include this site, with the goal of understanding the engagement process that best meets the needs of each Tribe in regards to cleanup sites. These meetings provide key information needed to complete a Tribal Engagement Plan document. The Tribal Engagement Plan document for this site is under development and should be completed in 2026, at which point it will be visible in the cleanup site documents on the site webpage.

The FS will be updated to include specific sections to discuss Indian Tribes' rights and interests. See the response to the comment from the Tulalip Tribe on page 22.

With respect to Tribal treaty rights, the alternatives presented in the FS reduce barriers to restoring fish passage to the Edmonds Marsh with the exception of Alternative 5, which was rejected by Ecology. Pavement or impermeable membrane caps were not considered as engineered controls for the Site because they would reduce habitat and impede habitat restoration efforts.

Note: Ecology's role is to ensure cleanup of the Site meets MTCA regulations. Ecology cannot comment on the legal implications of the 2013 federal culvert injunction on current or future property owners.

Topic D: Feasibility Study Alternatives

In an effort to offer viable options for marsh restoration, this topic discusses adding a third Alternative to the Feasibility Study (FS).

Response:

Based on available data presented in the FS, Ecology agrees that an additional intermediate cleanup action alternative would more closely meet the intent of the DCA. The data used to

estimate the volume of soil to be removed in Alternative 4, and the area of engineered cover in Alternative 6 was obtained as early as 2001. As described in Topical Response [E. Updated Soil Sampling](#) within this document, additional soil sampling was conducted at the Site to obtain current data.

The alternatives presented in the FS will be updated based on the new soil data. If Alternative 6 no longer satisfies the requirements for cleanup actions under MTCA, and if the incremental costs of Alternative 4 remain disproportionate to the incremental degree of its benefits, an additional intermediate alternative will be added to the FS. The intermediate alternative will include excavation of impacted soils above their respective CUL/PSV outside of the WSDOT stormwater easement, and an Engineered cover system over the soils within the WSDOT utility easement. Soils under the cap and utility easement will be addressed in a revised Contingency Plan, which will provide for removal when WSDOT repairs or replaces its stormwater line.

Topic E: Updated Soil Sampling

This topic discusses how updated soil sampling data will accurately inform the Feasibility Study (FS) alternatives, as well as the future Cleanup Action Plan (CAP).

Response:

Section 9 of the FS notes that additional soil sampling will be conducted prior to selecting a preferred cleanup approach to include in the draft CAP. The soil sampling was conducted in November 2025 in areas with previous cleanup level (CUL) exceedances. This was done to understand where soil contamination remains. The primary goal of the sampling is to directly compare current conditions to Site CULs through laboratory analytical testing.

The results of the November 2025 soil sampling event are being processed. If results indicate a change in areas with CUL exceedances, the FS, including the Alternative 6 engineered cover system locations and the Disproportionate Cost Analysis (DCA), will be updated.

See Topical Response [D. Feasibility Study Alternatives](#) for how the results may affect alternatives presented in the DCA.

See Topical Response [F. Revised Disproportionate Cost Analysis / Feasibility Study](#) on how the results may affect the DCA/FS revisions.

Topic F: Revised Disproportionate Cost Analysis / Feasibility Study

This topic details proposed revisions to the Feasibility Study (FS), including considerations for climate change and updates to the Disproportionate Cost Analysis (DCA).

Response:

The most common revision request was to include that the community's goal is to restore Edmonds Marsh and daylight the connection of Willow Creek to Puget Sound. The Public Concerns section of the FS and the weighting and scoring will be reviewed to ensure that these concerns are reflected in the final FS.

Another common comment was that Tribal interests were not discussed in the FS, and therefore likely not incorporated into benefit scores. A section on Tribal rights and interests will be added to the FS, and if necessary, the DCA scores will be adjusted accordingly.

Many comments were connected to climate change. Comments noted that the FS did not consider climate change, particularly sea level rise and flooding due to the location of the Site. Comments pointed out that protections to make the engineered caps resilient to sea level rise and erosion should be included in the cost of Alternative 6. Comments also pointed out that sea level rise would result in elevated groundwater elevations that would inundate contaminated soil previously not in contact with groundwater. Our response regarding these comments is as follows:

- The engineered soil covers described in Alternative 6 are intended to protect soil biota from contacting contaminated soil identified to be harmful to terrestrial organisms through the Terrestrial Ecological Evaluation (TEE). The TEE assessment is based on highly conservative published data considering soil biota living within the contaminated soil. The Cleanup Levels (CULs) based on the TEE are generally considered non-toxic for soil biota exposed to petroleum contaminants. The CULs are not based specifically on the degraded petroleum contaminants at the Site. Bioassays have been conducted exposing five different aquatic organisms to contaminated media collected from the Site. The bioassays were conducted to determine Site-specific contaminant levels protective of marine organisms. An assessment of remaining contamination at the Site will be completed to determine if there are areas that would be toxic to marine organisms if flooding or sea level rise were to cause erosion and uncover contaminated soil. The cost of armoring the engineered cover will be included in the DCA, if the assessment indicates it is needed. This description of climate change-related risks will be added to Section 6 of the FS. Appendix D of the FS includes a brief discussion of climate change risks for Alternatives 4 and 6, but additional detail will be added to the main text. Adjustment to the Permanence and Long-term effectiveness scores for Alternative 6 will be made if needed.
- As described in Topical Response [E. Updated Soil Sampling](#), additional soil sampling was conducted at the Site. The results of the soil sampling may further affect benefit scoring and the potential need to include climate change mitigation costs in the DCA.
- The highest concentrations of petroleum contaminants at the Site are in the saturated zone. An increase in groundwater elevation is not expected to increase contaminant concentrations in groundwater.
- Based on the simplicity of the design of cleanup options, seismic activity and on-property stormwater infrastructure is not considered in the DCA.

Lastly, a lot of comments requested a more accurate DCA. More details will be added to Section 6 of the FS, the benefit criteria scores will be adjusted, and if necessary, the cost of Alternative 6 will be adjusted as noted above. Otherwise the FS follows the steps of completing a DCA as described in [WAC 173-340-360](https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360)⁴⁴(5)(c). Additionally, Tables 6-2 through 6-4 in the FS contain a high level of detail estimating the costs of implementing each cleanup Alternative.

See Topical Response [D. Feasibility Study Alternatives](#) for more DCA / FS revisions.

Note: Throughout the FS, a potential future use of the Site is referenced as “Open Space.” City of Edmonds documents ([PROS](#)⁴⁵ and [Resolution 1508](#)⁴⁶) classify the marsh area as open space, therefore that term will continue to be used in the FS. In MTCA terms, the cleanup goal for the site is to allow ‘unrestricted land use’—see [WAC 173-340-740](https://app.leg.wa.gov/wac/default.aspx?cite=173-340-740).⁴⁷ Unrestricted land use means there are no specific restrictions on how the land can be used, such as for residential, commercial, or mixed purposes, as long as cleanup standards are met.

Topic G: Marsh Restoration / Habitat Protection / Salmon / Fish Passage

This topic discusses restoration efforts coupled with the management of petroleum contaminated soil.

Response:

Ecology is committed to developing a Cleanup Action Plan (CAP) that is protective of human health and the environment so the Site can be used for any planned future use, including any goals associated with marsh, wetland, and habitat restoration. We are looking at variations of the cleanup technologies included in the Feasibility Study (FS) as we work to finalize the FS and develop the draft CAP.

The draft FS for the Site identified CULs and cleanup action alternatives that are protective of human health and the environment, including salmon and other aquatic and terrestrial organisms. Only those alternatives that are protective were considered as feasible cleanup alternatives in the report.

Ecology supports salmon habitat restoration projects. Nevertheless, Ecology does not dictate how property is used by the property owner – so long as that use does not impact the cleanup.

⁴⁴ <https://app.leg.wa.gov/wac/default.aspx?cite=173-340-360>

⁴⁵

https://www.edmondswa.gov/government/departments/parks_and_recreation/planning_projects/2022_parks_recreation___open_space

⁴⁶ <https://weblink.edmondswa.gov/WebLink/DocView.aspx?id=1571520&dbid=0&repo=Edmonds&cr=1>

⁴⁷ <https://app.leg.wa.gov/WAC/default.aspx?cite=173-340-740>

The cleanup of the Site is intended to be protective of people, plants, and animals in all planned future uses of the Site. It is not appropriate under the Model Toxics Cleanup Act (MTCA) to design cleanup alternatives specific to habitat restoration or resource recovery goals without also considering other planned future uses of the Site. However, there is a clear trend in the feedback received during the public comment period indicating more weight should be placed on the concern for marsh and creek restoration. Therefore, the Public Concerns section of the FS will be revised to reflect this concern and, if necessary, changes will be made to the scoring of the DCA.

Depending on the location of any future stream channel or marsh restoration, the party performing the work may need to manage petroleum contaminated soil as part of restoration construction. Additional soil sampling was conducted, as described in Topical Response [E. Updated Soil Sampling](#). This will provide current data on areas of contamination that may need to be worked around or removed to accommodate restoration. The remaining contamination above CULs at the Site are from petroleum products. Petroleum is comprised of organic chemicals that break down naturally in the environment. The process can be very slow particularly in low oxygen environments and for long chain hydrocarbons found in diesel fuel and oil. Alternative 1 in the FS estimates the remaining petroleum contamination may take up to 60 years to degrade naturally. This estimate will be revised based on the results of the updated soil sampling.

Topic H: Future Planning and Long-Term Risks

This topic responds to concerns about leaving contamination in place (particularly around the WSDOT stormwater pipe), future sea level rise, Environmental Covenants (EC), and future financial responsibilities.

Response:

Ecology recognizes that there is a concern with leaving contamination in place. Concerns include the condition of the WSDOT stormwater pipe, the effectiveness of capping and ECs, and the responsibility for managing contamination when work is required on the WSDOT stormwater pipe.

See the Topical Response [I. Washington State Department of Transportation Stormwater Pipe](#) below for responses related to the WSDOT stormwater pipe.

ECs are commonly used by Ecology to manage contamination left at sites. An EC is attached to the deed of the property and therefore is identified in a title report when a property is sold to ensure future property owners are aware of restrictions included in the EC. Additionally, Ecology conducts periodic reviews on sites with ECs to ensure the covenant is still effective.

WSDOT has an easement agreement with Unocal that allows WSDOT to maintain its stormwater pipe. The future Consent Decree and Cleanup Action Plan (CAP) for the Site will

establish a plan to ensure that if contaminated soil is encountered during pipe maintenance, the soil is managed and disposed of safely. Under MTCA, if an EC is used to manage contamination remaining on the property the covenant requirements apply to the property and the current property owner. Ecology and the [Uniform Environmental Covenants Act](#)⁴⁸ view the property owner as responsible for ensuring the terms of an EC be met.

Unocal's cleanup responsibilities will be described in a Consent Decree (CD) and CAP for the Site. Remedial actions beyond what is specified in the CD and CAP between Ecology and Unocal would be the responsibility of the party conducting the work. Depending on the extent of proposed remedial actions, entering into an Agreed Order (AO) with Ecology may be required to ensure exposure risk is not increased.

The Site's location adjacent to Puget Sound does pose a risk to erosion and elevated groundwater due to sea level rise and flooding. A sea level rise of approximately 4 feet would be required for intermittent inundation. Based on the University of Washington [Interactive Sea Level Rise Data Visualizations](#),⁴⁹ there is a 1% likelihood of a sea level rise of over 4 feet at the Site by 2090, assuming a high projection of greenhouse gas emissions. The UW tool estimates a 50% likelihood that the sea level will rise by 2 feet by 2090. The Site is currently within the Federal Emergency Management Agency (FEMA) 100-year storm inundation area, without considering sea level rise. Therefore, while it is unlikely that sea level rise alone will impact the Site, the combination of sea level rise and heavy storms do have potential to impact the Site prior to contamination attenuating (or decreasing). Estimates in the FS suggest that contamination at the Site will naturally break down to below Cleanup Levels (CULs) within approximately 60 years.

The aggregate cap described in Alternative 6 is intended to protect soil biota (insects, worms, etc.). The CULs set for the protection of soil biota are very conservative, non-site-specific values from the Model Toxics Control Act (MTCA). In 1995 and 2003, bioassays were conducted using sediment from the Site to determine Site-specific contaminant levels protective of marine organisms that could come into contact with sediment. An assessment of remaining contamination at the Site will be completed to determine if there are areas that would be toxic to marine organisms if flooding or sea level rise were to cause erosion and uncover contaminated soil. Unocal, as a signatory to the future CD for the Site, would be responsible for maintaining remedial infrastructure described in the CD – such as repairing damages to soil caps caused by intermittent flooding.

Ecology recognizes the support of the City of Edmonds, local Tribes, and other agencies for the restoration of the Edmonds Marsh and daylighting Willow Creek. Based on the level of support, the use of all or a portion of the cleanup Site for creek and marsh restoration is recognized as a potential future use of the Unocal Edmonds Bulk Fuel Terminal property.

⁴⁸ <https://app.leg.wa.gov/rcw/default.aspx?cite=64.70&full=true>

⁴⁹ <https://cig.uw.edu/projects/interactive-sea-level-rise-data-visualizations/>

Topic I: Washington State Department of Transportation Stormwater Pipe

This topic acknowledges the public concern around the aging Washington State Department of Transportation (WSDOT) stormwater pipe as well as the role of the Washington State Department of Ecology (Ecology) relative to WSDOT.

Response:

Ecology agrees that the condition of the WSDOT stormwater pipe is a factor in preventing contaminated soil from being transported from the Site into Puget Sound. The pipe creates a barrier between contaminated soil and the flow of stormwater into Puget Sound. The pipe must continue to serve as an effective barrier as long as soil contamination posing a risk to marine receptors remains adjacent to the pipe. It is the responsibility of the PLP to ensure the stormwater pipe is in acceptable condition.

The plan for additional soil sampling at the Site described in Topical Response [E. Updated Soil Sampling](#) will assess remaining soil contamination concentrations and depth adjacent to the stormwater pipe. Based on the current soil contamination data, Ecology will work with WSDOT to determine an appropriate option to address the concern of contaminated soil entering stormwater due to a failed pipe. The option will consider the projected life-span of the stormwater pipe, WSDOT stormwater pipe maintenance practices, and potential climate change impacts on the pipe. If needed, the Feasibility Study (FS) will be updated to ensure all alternatives meet cleanup standards.

WSDOT recognizes that the stormwater pipe will need to be replaced in the future and that contaminated soil around the pipe will need to be removed and disposed of in the future.

Topic J: Opposition to Alternative 6 and Support for Alternative 4

This topic addresses the public's consistent opposition to Alternative 6 and support for Alternative 4.

Response:

Ecology recognizes that there is strong opposition to leaving contamination in place and managing the contamination with institutional controls (Alternative 6). The Public Concerns section of the Feasibility Study (FS) points out this concern, but it does not identify it as the primary concern of the public. Therefore, the Public Concerns section will be updated to highlight the public's interest in preparing the property for creek and marsh restoration activities. In addition, disruptions to the public and the carbon footprint of Alternative 4 have not been expressed as a concern and will therefore be removed from the Public Concerns section.

Between 2001 and 2017 most of the contamination (including Light Non-Aqueous Phase Liquids and soil) were removed from the Site using the most aggressive and permanent cleanup methods. Excavations targeted areas posing the highest risk to human health and the environment. The remaining contamination is either difficult to access, particularly along the WSDOT stormwater pipe where accessing the contamination would pose a significant risk of damage to the stormwater pipe or has low concentrations that did not exceed previous screening levels.

The DCA was completed to identify which alternative in the FS best meets the requirements of MTCA by effectively eliminating exposure to humans and environmental receptors. The DCA found that Alternative 4 (removing remaining contamination) did not justify the risk and cost, due to trucking excavated soil and managing it with institutional controls at a landfill. The DCA did however recommend Alternative 6 (capping remaining contaminated soil), because restricting contact with the contaminated soil eliminates the risk of negatively impacting human health and other living organisms.

The presence of contaminated soil does not block the possibility of alternative future uses of the Site, such as the potential goal of the Site for marsh and creek restoration. Ecology recognizes that the presence of contamination could increase the cost of restoration and should be considered with any such future work.

As described in Topical Responses [D. Feasibility Study Alternatives](#) and [E. Updated Soil Sampling](#), Alternatives 4 and 6 will be updated with current soil contamination data, and an additional alternative will be added to the FS if necessary. See Topical Response *D. Feasibility Study Alternatives* for more details on a potential additional alternative.

Appendix A

PDF comments in original format

Comment from Todd Zackey, Tulalip Tribe



Natural Resources Department
Environmental Division
6406 Marine DR NW
Tulalip, WA 98271

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November 24, 2024

Mr. Tanner Bushnell
Toxics Cleanup Program
Washington State Department of Ecology
Northwest Regional Office

Dear Mr. Tanner:

In 1855, representatives of the several tribes that are now known as the Tulalip Tribes were among the signers of the Treaty of Point Elliot made with the United States. As part of this treaty, Tribes ceded millions of acres of their land in exchange for the tribes retaining their fishing, hunting and gathering rights within their usual and accustomed areas. The federal court decision in *United States v. Washington* – known as the Boldt decision – affirmed the tribes’ treaty right to half of the harvestable fish and shellfish in the State, and established the tribes as co-managers of Washington fisheries. In Phase II of the case it was found that, “the State must also bear the burden to demonstrate that any environmental degradation of the fish habitat proximately caused by the State’s actions (including the authorization of third parties’ activities) will not impair the tribes’ ability to satisfy their moderate living needs.”

The current preferred alternative 6 as determined from the disproportionate cost analysis conducted by the Department of Ecology does not take into account the continued impact and the impediment to restoring the Tribes’ treaty right resources at the Edmonds Marsh, specifically daylighting and rerouting of the tidal channel to the Edmonds Marsh and its tributaries, Willow and Shellabarger Creeks. Alternative 6 purposefully leaves toxic contamination in areas that preclude the ability to restore a natural tidal channel to the Edmonds Marsh, which would provide both salmon rearing habitat and access to the Marsh’s tributaries.

The Department of Ecology’s preferred alternative 6 is an instance where Washington State’s actions allow for continued degradation of fish habitat and we strongly suggest that the Department of Ecology re-evaluate its disproportionate cost analysis to take into consideration impacts to the Tribes’ treaty resources. We’d recommend selecting alternative 4 as the preferred alternative or work directly with the Tulalip Tribes to design a clean-up alternative that allows for restoration of a natural tidal channel to Edmonds Marsh.

Sincerely,

Todd Zackey
Field Studies Program Manager
Tulalip Tribes Natural and Cultural Resources Dept.

The Tulalip Tribes are federally recognized successors in the interest to the Snohomish, Snoqualmie, Skykomish, and other allied tribes and bands signatory to the Treaty of Point Elliott.

Comment #4, Clinton Wright

Public Comment Form

1 Comment

2 Review

3 Your Copy

Commenting open: **September 9, 12:00 AM PT—October 24, 2024 11:59 PM PT.**

Unocal Edmonds Bulk Fuel Terminal 0178 Cleanup Site: Revised Draft Feasibility Study and Updated Public Participation Plan

Please note that this comment form is for the purpose of submitting a comment to the Washington State Department of Ecology. Commenter contact information is optional. Contact information is necessary if you want to receive future notices or responses related to this topic.

The Department of Ecology invites you to review and comment on the Revised Draft Feasibility Study and the Updated Public Participation Plan related to the cleanup of the Unocal Edmonds Bulk Fuel Terminal 0178 cleanup site. Access these documents and learn more on the cleanup site's webpage at <https://go.ecology.wa.gov/UnocalEdmonds> or scan the QR code below.



Contact Information

All fields are optional unless otherwise indicated.

Submitted by: (Check one and write name)

☒ Individual (add name below)

☐ Organization: _____

☐ Agency: _____

☐ Other _____

☐ Business: _____

First Name

CLINTON

Last Name

WRIGHT

Address

206 8TH AVE. NORTH

City/Town

EDMONDS

Country

SNOWHOMISH

State/Province

WA.

ZIP

98020

Email

clint_patwright@comcast.net

Please write comment clearly
on other side:



Public Comment Form

1 Comment

2 Review

3 Your Copy

Your Comment

Comments are due by **October 24, 2024 at 11:59 p.m.**

Please enter comments in the text area. To submit attachments please visit Ecology's online comment form at <https://go.ecology.wa.gov/UnocalEdmondsComments>.

Any information (e.g., personal or contact) you provide on this comment form or in an attachment may be publicly disclosed and posted on the Internet.

To submit comments for a group please visit our "Commenting Tips" webpage at <https://ecology.wa.gov/About-us/Get-involved/Public-input-events/Commenting-tips>.

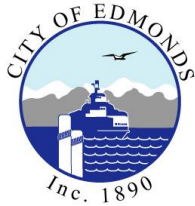
Next Steps: After the close of the comment period, Ecology will review and consider all comments received as we finalize the documents and respond accordingly.

ALTERNATIVE # 6 IS UNEXCEPTABLE AND
IS NOT CONDUCTIVE FOR ALL POSSIBLE
FUTURE USES, ESPECIALLY MARSH RESTORATION.
ALT. # 4 SHOULD BE DEMANDED OF
CHEVRON BEFORE THE STATE TAKES
POSSESSION.

clw



Comment #22, City of Edmonds



CITY OF EDMONDS

121 5TH AVENUE NORTH · EDMONDS, WA 98020 · 425-775-7724 · FAX 425-771-0252
Website: www.edmondswa.gov

Community | Culture | Economic Development

MIKE ROSEN
MAYOR

October 1, 2024

Department of Ecology
Northwest Regional Office
15700 Dayton Ave N
Shoreline, WA 98133

Dear Mr. Bushnell,

RE: COMMENTS ON UNOCAL EDMONDS DRAFT FINAL FEASIBILITY STUDY REPORT

We are writing to provide comments on Chevron's Draft Final Feasibility Study Report Addendum. Our comments focus around two primary areas: the suitability of Alternative 6's reliance on the WSDOT stormwater pipe, and the broad use of environmental covenants (ECs).

Stormwater Pipe

WAC 173-340-360(5) outlines procedures to determine whether a cleanup action uses permanent solutions to the maximum extent practicable. Practicable means "capable of being designed, constructed, and implemented in a reliable and effective manner including consideration of cost."

We contend that Alternative 6 does not use a permanent solution to the maximum extent practicable. Its recommended action ensures a temporary solution which has a considerable likelihood of failing in the near term due to the age of the pipe (approx. 50 years) and the type of pipe installed here. This is asphalt-lined corrugated metal pipe sitting in soils that are intermittently wetted each day, i.e., a corrosive environment. An almost identical pipe in identical soils, of the same age, also under tidal influences, is located less than 50 yards from the WSDOT pipe. That pipe has already failed structurally. The entire bottom of this comparable pipe has corroded to the extent that large sections have no bottom at all. Should that happen to the WSDOT pipe it would wash contaminated soils we already know are there into Puget Sound. Worse yet, in a big enough storm, the pipe could completely fail and destroy the expensive soil cap relied on to isolate remaining contamination in the marsh.

Step 4 in determining whether a cleanup action uses permanent solutions to the maximum extent practicable requires a "disproportionate cost analysis" (DCA) which includes a comparison of the costs and benefits of the baseline alternative with the next most permanent alternative.

We contend that the DCA did not adequately compare the costs and benefits of Alternative 6. It ignores the costs of a likely and foreseeable collapse of the WSDOT storm line and subsequent release of toxins into the environment.

We'd also like to highlight that Chevron's own analysis indicates that WSDOT's stormwater pipe is fragile and likely to collapse if surrounding soil is disturbed. Surrounding soil will certainly be disturbed during any breach in the pipe – foreseen or not – and dramatically increase the likelihood of the entire system failing.

Costs are also supposed to address design life in the analysis. In para 5.vi.B.I. "Design Life," there is a requirement to estimate the design life of cleanup action components, including engineered controls. If the period of time in which a component is needed exceeds the design life of the component, the cost of replacing or repairing the component in the cost estimate must be included.

The condition of WSDOT's stormwater pipe represents a critical risk in the design of Alternative 6. A failure of the stormwater pipe will likely result in a complete failure of the system. It is essential to account for the real conditions facing the stormwater infrastructure onsite. WSDOT has not assessed the condition of their pipe for over 14 years. Section 4 discusses a "contingency action(s) such as installation of a cast-in-place pipe (CIPP) liner within the stormwater line." We request this action be moved into alternative 6 as the baseline. If the stormwater pipe should fail due to age, intensity of storms, or any other reason, the result would be a catastrophic failure of the entire system. There is no reason to not implement this solution now.

Environmental Covenants

The Revised Draft Feasibility Study envisions Environmental Covenants (ECs) across the entire site despite the decades-long cleanup and the equally long intent of the City of Edmonds to restore the site to a functioning estuary.

The Study refers to ECs being the preferred remedial alternative in section 1.2 and calls out the "entire site" as the location of the ECs (section 4.3.1). This disregards the local public and municipality's desires for the site for the sake of convenience of Chevron, pushes additional costs onto entities conducting future remediation, and limits the types of remediation and restoration that will be economically feasible in the future.

Additionally, as discussed in our comments regarding the WSDOT stormwater line's ability to serve as a long-term solution to containment of remaining toxins, we contend that ECs are far less effective than stated by Chevron when the likelihood of failure of this critical component is considered. ECs would be essentially useless when the pipe fails, would impede restoration of stormwater function, and impose additional costs on both WSDOT and any future landowners.

We request that environmental covenants be used sparingly on the site and only in areas where contaminants remain. As stated, we disagree with Chevron's Study's recommendation to leave the contaminants in place due to the age of the WSDOT stormwater pipe and the stresses placed upon it by climate change driven increases in storm surges.

Please feel free to reach out if you have additional questions. Emails or calls should be addressed to Todd Tatum at todd.tatum@edmondswa.gov and Phil Williams at phil.williams@edmondswa.gov.

RE: COMMENTS ON UNOCAL EDMONDS DRAFT FINAL FEASIBILITY STUDY REPORT

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Sincerely,

A handwritten signature in black ink that reads "Todd Tatum". The script is cursive and fluid.

Todd Tatum
Director
Community | Culture | Economic Development
(425) 758-1908
Todd.tatum@edmondswa.gov

City of Edmonds

We are writing to provide comments on Chevron's Draft Final Feasibility Study Report Addendum. Our comments focus around two primary areas: the suitability of Alternative 6's reliance on the WSDOT stormwater pipe, and the broad use of environmental covenants (ECs).

Stormwater Pipe

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WAC 173-340-360(5)(d) requires the following when assessing the long-term effectiveness of the alternative:

- The degree of certainty that the alternative will be successful;
- The reliability of the alternative during the period of time hazardous substances are expected to remain on-site at concentrations that exceed cleanup levels;
- The resilience of the alternative to climate change impacts;
- The magnitude of residual risk with the alternative in place.
- The effectiveness of controls required to manage treatment residues or remaining waste.

We contend that the proposed Alternative 6 is:

- Not reliable given known weaknesses with similar infrastructure nearby;
- Not resilient to impacts of climate change, and disregards current conditions;
- Retains significant residual risk;
- The containment option (leaving the soil in place around an aged and over capacity storm pipe) is likely to fail in whole or in part.

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Comment [#35, 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.”¹

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

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

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.

Management of Short-term Risks

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.

Technical and Administrative Implementability

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.

Consideration of Public Concerns

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.

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						
Step 1: Determine costs and benefits of each cleanup action alternative							
Relative Benefit analysis				Alternative 4		Alternative 6	
		Weightings		score	score*weighting	score	score*weighting
Criteria							
	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		

Comment #36, Greg Ferguson

Draft Feasibility Study Addendum Input, 11/5/24
Greg Ferguson

Thanks to Chevron and Ecology for the work completed on this site so far. Most of the site is clean, however, contaminated soil in critical areas remains. A permanent cleanup method is urged for these areas - excavation and removal.

The Draft Feasibility Study Addendum and Disproportionate Cost Analysis should be amended to fully comply with the Model Toxics Control Act Cleanup Regulations (MTCA). The existing draft did not consider several key elements required by the MTCA and did not fully consider others. Elements not considered in the draft include climate change, other reasonable alternatives, tribal input, public input, updated soil samples, future use of the site, and future costs. These elements are important parts in selecting a preferred cleanup action.

Proposed is a disproportionate cost benefit analysis that considers these elements and does not overemphasize cost.

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3. Tribal input.....	4
4. New soil samples	5
5. Future use of the site.	5
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1. Climate change impacts.

Model Toxics Control Act Cleanup Regulations require that climate change be considered. Climate must be included in remedial investigations [*WAC 173-340-350 (6)(f)*] and for cleanup actions [*WAC 173-340-360 (3)(a)(v)* and *WAC 173-340-360 (5)(d)(iii)(A)(III)*]. Climate change was not considered in the evaluation of cleanup alternatives.

Climate change, including sea level rise, can substantially impact the cleanup. The erosion potential for ground near the southwest corner of the site will increase, wave energy can damage soil covers, and rising ground water levels can mobilize remaining contamination.

Current 100 year flood levels are 12.4 ft (all elevations reference the NAVD88 datum) and the southwest part of the Unocal site is in flood Zone VE where wave runoff adds another 3.6 ft of potential impact (Flood insurance Study, FEMA, Snohomish County, June 19, 2020). There is a 35% chance that sea levels will be 1 ft higher by 2050 (UW Climate Impacts Groups Sea Level Rise Visualizations). Near term future sea level rise and wave impacts then reach up to an elevation of 17 ft at this location.

BNSF railroad bridges near the southwest corner of the site provide a potential path for water to flow back and forth from the Unocal property to Puget Sound. The bottom of the bridge girders are at 12.7 ft. The potential currently exists for this flow to occur.

This flood flow will occur more frequently and severely as sea levels rise and storms increase in intensity. Floodwater will enter the Unocal site from the Marsh pipeline, SR104 stormdrain, the Point Edwards stormdrain, and Marsh creeks. When tides recede, this floodwater can flow back to the Sound under the railroad bridges (see drawing below) as the Marsh pipe flow capacity is exceeded. This flood flow will cause erosion near the southwest property corner, potentially damaging engineered covers if they are installed there.



The southwest corner of the site will encounter high waves as sea levels rise. This wave energy will extend farther inland and overtop the railroad tracks (16 ft). Waves will increase the potential for damage to cap and covers.

Finally, increasing sea levels will cause the groundwater table elevation to rise. This will put more of the contaminated soil in contact with groundwater. The vertical and horizontal motion of groundwater can mobilize contamination and move it to the Willow Creek channel and to Puget Sound.

These mechanisms decrease the Protectiveness, Permanence, Long-term Effectiveness and increase the future costs of cleanup solutions that use caps and covers.

2. Additional remedial action alternatives

The Edmonds community and the Edmonds Marsh Estuary Advocates prefer that all the remaining contamination be removed. However, if the current comparison method that strongly emphasizes cost (the cost/benefit ratio) continues to be used, other alternatives that are less expensive should be considered.

WAC 173-340-351 (6)(b) supports this suggestion by directing that reasonable cleanup action alternatives be identified and evaluated. These other reasonable alternatives are intermediate between alternatives 4 and 6. Alternative 4 proposes excavation of all remaining contaminated soil areas. Alternative 6 proposes engineered covers for all remaining contaminated soil, continued operation of the dual-phase extraction (DPE) system, contingency plan, and environmental covenant. Intermediate remedial actions combining both excavation and containment should be considered [as described in WAC 173-340-351 (6)(b)(v)].

A proposed new Alternative 7 is shown in the diagram below. The red circles identify contaminated areas that would be capped and covered. The remaining contaminated soil areas would be excavated. Most of the cost of Alternative 4 is excavating around the SR104 pipeline. Leaving these areas with covers is significantly less expensive.

Alternative 7 reduces but does not eliminate the risks of future ground and surface water contamination, future sea level rise impacts, and allows for the eventual reconnection of the Marsh to Puget Sound and restoration of the site to salt water estuary habitat without the cost of further contaminated soil excavation.

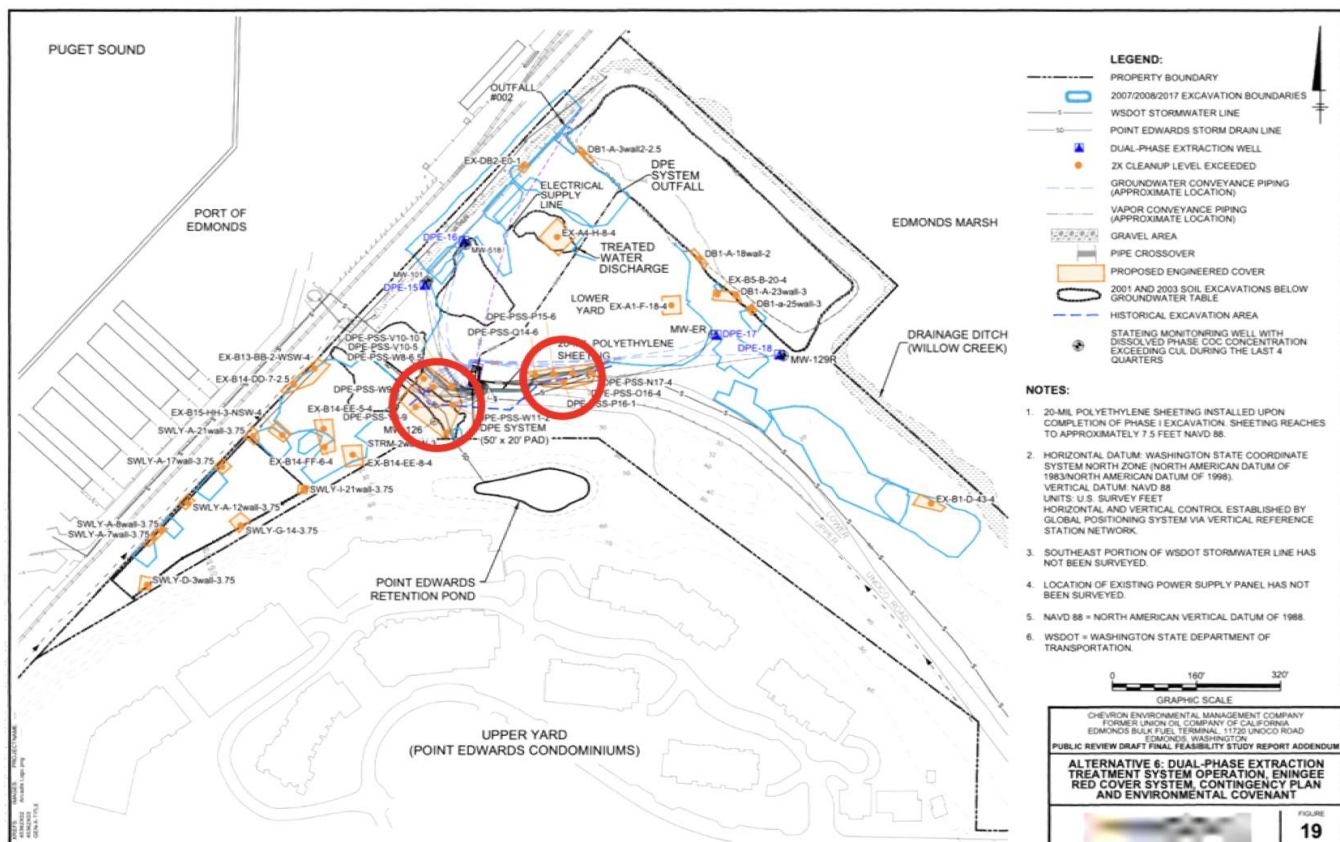


Illustration of proposed Alternative 7

Proposed Alternative 8 is shown below, again the red circles would be capped and covered. This alternative leaves more areas with engineered covers and would be less expensive than Alternative 7.

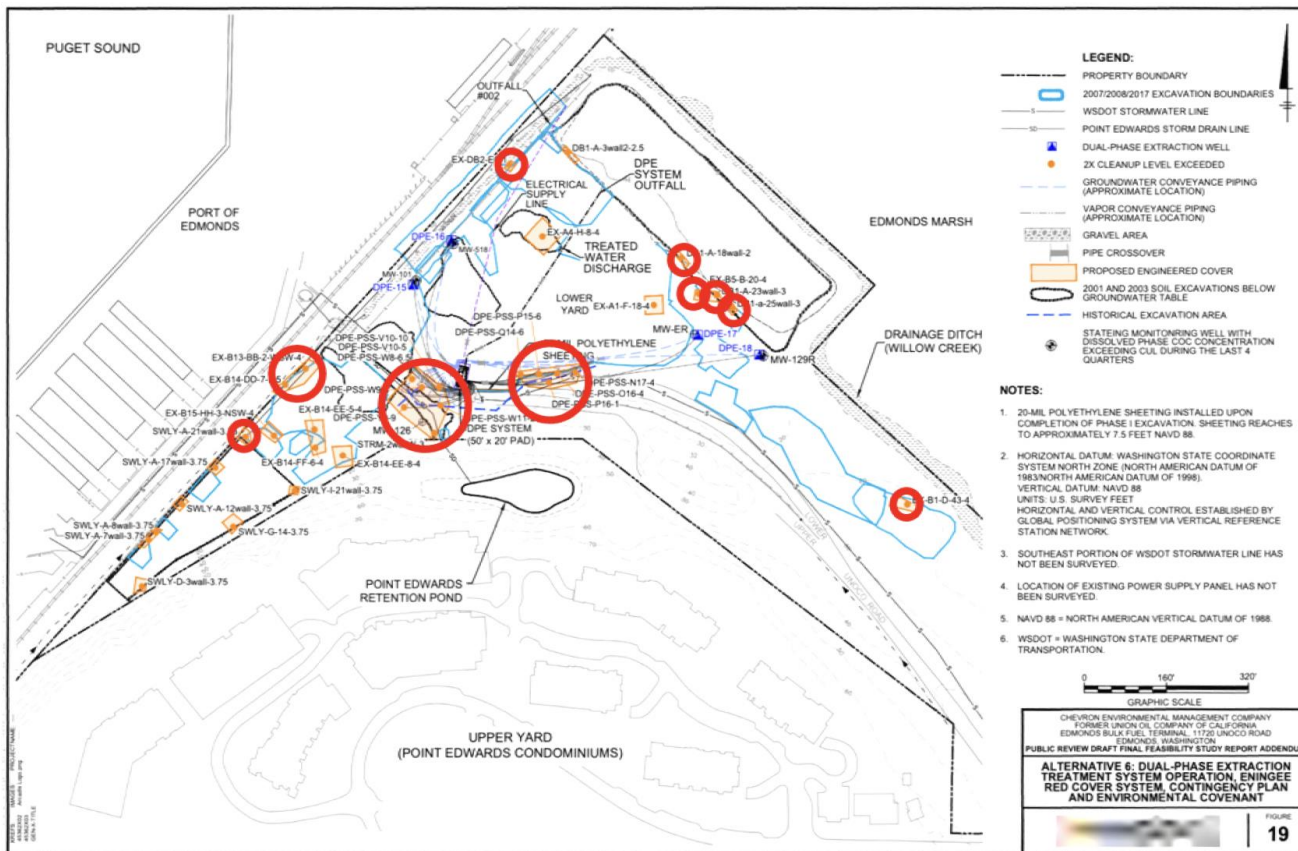


Illustration of proposed Alternative 8

These alternatives should be fully considered through an updated disproportionate cost analysis in the feasibility study (see below).

3. Tribal input

Indian tribes' rights and interests have not been considered in the feasibility study as required in WAC 173-340-360 (3)(d)(iii). Also, WAC 173-340-620 (3) directs that a Tribal engagement plan be developed. The Unocal site is within the adjudicated usual and accustomed fishing area of the Tulalip Tribes. An engagement plan should include phone calls and visits to tribal headquarters to solicit input on the Unocal cleanup.

The tribal engagement and input adoption plans should also incorporate existing documentation. The Tulalip Tribes website, under "Treaty Rights and Government Affairs" includes restoration of natural resources as a tribal mission. A future use of the Unocal site for habitat restoration would help meet this goal.

Another important source for tribal input is the 1974 Boldt case affirming rights granted in the 1855 Treaty of Point Elliott. Later cases have affirmed treaty rights against destruction of habitat necessary to support the salmon runs. As a result, WSDOT, under a 2013 federal culvert injunction, has a tribal treaty-based duty to remove barriers to fish passage. The repair of the Marsh pipeline fish passage barrier will require a surface

water channel on Unocal property. Since WSDOT holds the equitable title to the property, reconnection will be a required future use under this federal injunction.

The existing Marsh pipeline blocks salmon passage and violates tribal treaty rights. Future use of the site for a surface water connection meets court orders to remove fish passage barriers. Contamination left on the site that would impede efforts to restore fish passage.

Feasibility study benefit calculations should consider tribal rights and resulting court mandated orders. The benefit rank of solutions that leave contamination in the way of reconnecting the Edmonds Marsh to Puget Sound should be lowered.

4. New soil samples

Most soil samples were collected during remedial excavations in 2001, 2003, and 2008. Since the site contaminants have been subject to natural attenuation over the intervening years, there may be substantial changes in the number and extent of remaining areas that do not meet cleanup limits.

This new information could have an impact on the ranking of the benefits of each proposed remedial action alternative and their costs of implementation.

If new remedial action alternatives combining engineered covers with excavation are considered, updated soil sampling will be particularly important. The disproportionate cost analysis will change depending on how much of the site remains contaminated.

Accurate information delineating current soil contamination is needed before alternatives are selected in the feasibility study process.

5. Future use of the site.

Future use of the site for reconnection of the Edmonds Marsh to Puget Sound must be considered in the evaluation of alternative cleanup methods.

The existing Marsh pipeline blocks salmon passage and violates tribal treaty rights. Future use of the site for a connection meets a court order (the 2013 federal culvert injunction) that requires the removal of fish passage barriers. Contamination left on the site would impede efforts to restore fish passage. The surface water channel replacing the pipeline would be on the Unocal site. Since WSDOT holds equitable title to the property, reconnection will be a required future use under this federal injunction.

Also, WSDOT proposed replacement of the Marsh pipeline with a surface water reconnection when planning for a ferry terminal on the site. The terminal project has been abandoned but if WSDOT retains ownership plans would likely still include this reconnection. There are detailed and specific goals and a habitat plan developed for this reconnection.

Future use of the site as a saltwater estuary is the option preferred by the local Edmonds Community.

When these future uses are considered, the Protectiveness, Permanence, Long-term Effectiveness rating of cleanup solutions that leave contaminated soil on the site should be lowered.

6. Future costs.

A cleanup action requirement is that post construction costs are one of the criteria used to evaluate each alternative [WAC 173-340-360 (5)(d)(vi)(B)]. Alternatives that leave contaminated soil on the property are subject to these future costs. They are not included in the current feasibility study.

The costs necessary to maintain the effectiveness of engineered covers include:

- Replacement or repair of covers and caps.
- Compliance monitoring (including sampling and analysis).
- Periodic reviews.
- Regulatory oversight.

Major potential future costs include:

- The added cost of replacing/repairing the SR104 stormdrain due to contaminated soil. The 50 year old pipeline is likely to need repair or replacement soon. The additional cost of dealing with contaminated soils when replacing the stormdrain needs to be estimated. If this cost makes replacement too expensive, repair options such as cast in place pipe would be considered. The additional cost of repair vs replacement should be assigned to cleanup alternatives that leave contaminated soil around the pipe.
- The added costs due to contaminated soil of replacing/repairing the Point Edwards stormdrain and Point Edwards water supply pipe. Both these pipelines are 20 years old and have remaining areas of contamination over and around them. These added costs due to contaminated soil removal are also part of the future cost of remedial action alternatives.
- Impacts due to climate change induced sea level rise:
 - Costs of engineered cover damage resulting from flood flow and wave action near the southeast corner of the Unocal property.
 - The future costs of excavating areas where groundwater level increases and frequent sea water inundation mobilizes and moves contamination toward Willow Creek and Puget Sound.
 - The added cost of overdesigning stormwater management systems and construction of backups to prevent flood damage to engineered covers.
- Repair and remediation due to earthquakes. The loose, saturated soils and fill materials at the marsh are subject to liquefaction. This could potentially mobilize contamination. Typical surface features from liquefaction include "sand boils" that could disrupt a soil cap.
- Repair and remediation due to tsunamis. Engineered covers need to be constructed to withstand high wave forces.

Including these future costs in the disproportionate cost analysis has the potential to result in the selection of a different cleanup alternative.

7. Disproportionate Cost Analysis

Changes are proposed to cost estimates, benefits, and the method used for comparison.

Cost Estimates

1. Include future costs. Engineered cover maintenance; the added costs due to contamination of repair/replacement of the SR104 stormdrain, the Point Edwards stormdrain and the Point Edwards water main; the future costs of climate induced wave and flood damage to covers; future excavations required if rising groundwater levels and frequent flooding mobilize remaining contamination; and earthquake, tsunami, and stormwater flood protection costs should all be estimated and included (see the future costs section above).
2. Include new, combined treatment method alternatives. Alternatives (7 and 8) that do not excavate the SR104 stormdrain are much less costly. The estimated upper cost for the WSDOT stormdrain excavation in Alternative 4 is \$8,620,000 (30% contingency included). Removing that amount from the Alt 4 total results in a cost of \$2,800,000 for Alt 7. Adding future costs to the Alt 6 estimate would then make the costs comparable.
3. Change the way that costs are compared to benefits. Using the Cost/Benefits ratio overvalues the importance of costs. WAC 173-340-360 (5)(d) lists six criteria for comparing alternatives and one of those is cost. There is no rule that requires that cost be considered as significantly more important than the other five criteria. There are two options for aligning the disproportionate cost analysis with the WACs:
 - Do not use Cost/Benefit as the comparison tool. Include cost as one on the 6 criteria and score and weight it as is done with the others.
 - If the Cost/Benefit ratio is used, change the score range from 0-5 to 0-10. Benefits can then be given more relative importance with a wider range of scoring options.

Benefit scoring

Weights are assigned based on the importance of Protectiveness, Permanence, Effectiveness over the long-term and Cost. Cost is not given a significantly higher weight. The scoring assumes a 0 to 10 scale.

Protectiveness (weight 25%). Excavation and engineered covers, while in place, are protective of human health and the environment, reduce existing risks, require similar timeframes for attaining standards, and improve environmental quality. However, leaving contamination on-site means that risks due to engineered cover damage continue over long periods, lowering the score for all those considerations. On-site risks are high when contamination remains. These risks include failure of the SR104 or Point Edwards pipelines and cover damage due to human activities, climate induced flood flow and wave action, tsunamis, earthquakes. The risk to groundwater increases as the water table rises and sea water inundates the site more frequently. Groundwater is also at risk when the DPE system shuts down and contamination around the SR104 pipeline is no longer contained. Public and tribal input favoring excavation is a factor in the scoring.

Alt 4 – score of 10

Alt 6 – score of 5

Alt 7,8 – intermediate between Alt 4 and Alt 6

Permanence (weight 20%). Engineered covers do not permanently destroy or reduce the mass of hazardous substances over a reasonable time frame. They protect ecological receptors while in place and are undamaged and reduce upward but not horizontal mobility. Excavation options more closely align with the public goal of Marsh restoration and with tribal treaty obligations.

Alt 4 – score of 10

Alt 6 – score of 2

Alt 7,8 – intermediate between Alt 4 and Alt 6

Effectiveness over the long term (weight 20%). Engineered covers do not have the certainty of success that excavation has, are less reliable, are not resilient to climate change, leave risk in place, and require long-term maintenance and control. Engineered covers and institutional controls are the lowest ranking components in the hierarchy guide described in the WAC.

Alt 4 – score of 10

Alt 6 – score of 1

Alt 7,8 – intermediate between Alt 4 and Alt 6

Management of implementation risks (weight 5%). Excavation has the greatest potential for exposure of workers to contact contaminants and the largest addition of GHG to the atmosphere.

Alt 4 – score of 1

Alt 6 – score of 10

Alt 7,8 – intermediate between Alt 4 and Alt 6

Technical/administrative implementability (weight 5%). Excavation requires the most technical and administrative overhead but over a shorter time period than engineered covers.

Alt 4 – score of 5

Alt 6 – score of 5

Alt 7,8 – score of 5

Cost (weight 25%). The cost of Alt 4 is currently estimated to be five times higher than Alt 6. Including future costs in the estimate for Alt 6 will bring that difference closer.

Alt 4 – score of 3

Alt 6 – score of 10

Alt 7,8 – intermediate between Alt 4 and Alt 6

8. Conclusion

When climate change, other alternatives, tribal input, public input, updated soil samples, future use of the site, and future costs are fully included in the alternative comparison and when cost is given a weight comparable to the other criteria, Alternative 4 will be the likely preferred alternative. If the cost/benefit ratio continues to be used then proposed Alternative 7 or 8 will likely be the preferred alternative.

Comment [#39, Diane Buckshnis](#)

Proposal for Edmond's Marsh Near-Shore Estuary restoration plan using a Public/Private Partnership Business Plan

Background:

In 2021-2022 WRIA 8 Salmon Recovery Manager Jason Mulvihill Kuntz, Edmonds City Council Member and WRIA 8 delegate Diane Buckshnis, and Edmonds citizen Jack Faris were tasked by Puget Sound Partnership (PSP) Salmon Recovery Council to work on establishing a public/private partnership (PPP) with high wealth donor foundations and/or citizens to obtain a private funding strategy to fund all the delayed costs which was estimated at \$35M. An excellent example of a recent PPP is when Barry Diller and Diane von Furstenberg paid to rehabilitation a dilapidated pier called "Little Island" (www.wsj.com/articles/little-island-park-barry-diller-diane-von-furstenberg-11621508053). Mr. Diller's family foundation spent over \$260M to build Little Island where admission is free and committed another \$120M for the next 10 years for maintenance.

Proposal:

Create a Private Public Partnership to structure the transfer of UNOCAL property (sold in 2005 to WSDOT Ferries for \$8.1M) to the City of Edmonds at no cost to the City. Designing and restoring the near-shore estuary to optimize the native wildlife habitat found on the largest near-shore estuary along the Sound. This proposal will educate concerned environmentalists, youth, and philanthropic foundations who are unfamiliar with this unique saltwater/freshwater estuary. This proposal identifies a few methods to attain an optimal restoration plan that would create a channel from the Puget Sound to the Marsh estuary lagoon. This channel opens a pathway for salmon for spawning and recovery. Meadowdale Beach Park restoration is a perfect example and costs around \$16m with half being City bonds. My proposal relies on Private Donors to take the place of City issued bonds.

Costs, Concepts, and Logistics:

The purchase and restoration of the Unocal Property into a near-shore estuary is expensive and the Department of Ecology has provided six scenarios with estimated costs compared to the Model Toxics Control Act (MTCA) Benefits Ranking. It is complex as there remains about 22 hot spots on the "Unocal Property" and then there is a WSDot stormwater pipe that transverses the property. WSDOT has refused to include the removal of this 52+ year-old pipe. In all the scenarios, the WSDOT owned pipe is combined with the Chevron hot spots. The WSDOT storm pipe removal being the most expensive component.

In an optimal scenario, the lower section of that pipe would be removed and an infiltration side stormwater channel system would be created. This scenario will not happen so DOE has indicated that a restricted covenant would be placed on this pipe. Since the hot spots and the pipe are bundled together, it is obvious part of the decree would include the hot spots. Both components as part of the decree means future costs of any clean-up when the pipe fails may fall onto the purchaser or the City of Edmonds. The hot spots are obvious a bonus for Chevron as they will remain hot spots forever which should not be acceptable to anyone that is part of this MTCA process.

DOE chose option #6 due to the lowest cost factor and as mentioned it combines Chevron's hot spots with WSDOT's pipe. The public liked scenario #4 which had the best environmental benefit but the highest costs as it would clean up everything through excavation.

Based on all the variables and knowledge of dealing with contaminated properties through my WRIA 8 grant funding work, it is HIGHLY RECOMMENDED that DOE require a NEW scenario or Scenario #7 that would bifurcate

the WSDOT pipe from the hot spots. This scenario places clean-up responsibility solely with Chevron to clean-up those hot spots. The restricted covenant would not even contain this scientific problem as the clean-up costs will be bore onto who created the contamination.

The separation of these two ownership issues would be beneficial on so many factors with costs being the most significant. But from an environmental standpoint, the daylighting of the channel and lagoon could be designed to be completely separated from the WSDOT pipe which could remain in place for another 50 years. In this new scenario, the restrictive covenant would only be placed on the WSDOT pipe. With the marsh estuary restoration the channel would be diverted more south of the WSDOT pipe and/or the pipe could be lined.

The City of Edmonds has the right of first refusal in the 2024-2025 State Transportation Budget. Additionally, the City entered in a memorandum of understanding with WSDOT-Ferries in 2023 to purchase the property. The City of Edmonds does not have the money to purchase the property. Nor has the City developed a full restoration plan since restoration and design for the beach area to the railroad was denied by WRIA 8 in 2020. State grant funding agencies will have issues with the contaminated property if the hot spots remain, so again Chevron should be held financial responsible for cleaning up these areas.

The cost to purchase the property should look at the environmental intent of State and Federal agencies goals which area “net ecological gain” and this near-shore estuary restoration should be a Top priority. Since the property was purchased by “taxpayers’ gas taxes”, WSDOT and the Governor Ferguson should truly show their environmental intent and transfer the property at no costs to the City.

Because of the MOU’s language of payment being based “on fair value” of the property which currently is zoned commercial real estate, the City of Edmonds should also downzone to open space. While this seems like a lot of “throwing money away” due WSDOT because of the fabricated cost created from a fair market valuation, the environmental moral compass should be restore and allow the City of Edmonds to manage the restoration process and maintain the optimal urban near-shore estuary.

All costs and scope of an “optimal” restoration scenarios are simple: 1) Chevron “cleans the hot spots” and is noted to be part of this historic partnership and WSDOT removes the aged WSDOT stormwater pipe. WSDOT’s acknowledgement the aged stormwater pipe needs to be replaced and designs a modernized stormwater infiltration side channel. WSDOT transfers title to the City of Edmonds at a cost factor of zero as citizens have already paid for this purchase through gas tax. Private donor(s) become a part of a historic partnership that supports both State and Federal goals of salmon recovery. 2) Chevron cleans hot spots and WSDOT’s pipe remains with a restrictive covenant. WSDOT transfers title to City at zero costs. The daylighted channel and lagoon are designed north creating a near-shore estuary avoiding the WSDOT pipe. As seal-level rise is expected, the pipe can either be lined or some new technology used so that when the channel expands or when the pipe fails, it will not impact on the newly restored near-shore estuary. Both scenarios include a “environmental capital raising committee to seek private funding and partnership support.

Goal: Optimal restoration of the Edmonds near-shore Marsh Estuary.

To achieve this goal the following needs to be addressed. 1) create a new scenario #7 to address Chevron’s responsibilities for clean-up; 2) create a private/public partnership to work towards gaining funds and managing the project; 3) resolve the property ownership with WSDOT at no cost to the City; 4) create a restoration team to include local scientists like Joe Scordino and State agencies; 4) create a private sector funding team that could include citizens like Diane Buckshnis and Jack Faris who many State and Federal legislators and agencies heads met during the WRIA 8’s Ballard Locks pilot project; 5) create Governor’s team to keep apprised of what could

be a monumental example of private sector funding local environmental needs; 6) ensure donors know the City of Edmonds has an already established restricted funding depository (fund #017) for marsh restoration.

Objectives:

This PPP would have a potential consortium of members or representatives from the Governor's Office, DOE, WSDOT, Chevron, WRIA-8, Tulalip Tribes, the City and Port of Edmonds, the town of Woodway and any other stakeholder or key players.

The key to all of this is willingness of all parties to think outside the box and tap into that private donor base since many citizens of Edmonds are all in for seeing this project happen. Time will be needed to pull the teams together for the varying tasks as scientist will need to model for the threats of excess stormwater and sea-level rise occurring faster than anticipated. The creation of this historic partnership may spur other private donors to assist other Cities in restoration projects as the environmental impacts from density and growth are not being considered and Federal and State funding remains focused on growth and density.

Future generations need this to happen as well as our Orca Whales and salmon.

As noted, DOE has provided their clean-up plan and accompanying documents that are required per MTCA process (<https://apps.ecology.wa.gov/cleanupsearch/site/5180>) and an open house was held in September and comments are due by November 26, 2024. Please provide comments to support the need for a new scenario #7 and hold Chevron accountable for its' financial responsibility.

Prepared by Diane Buckshnis

Edmonds City Council and WRIA 8 Salmon Recovery Council - 13 years: Grant Funding Committee – 14 years

Puget Sound Partnership Salmon Recovery Council - 8 years

Comment #41, David Richman - Appendix B

A REPORT ON THE INSECTS AND ARACHNIDS OF EDMONDS MARSH

By David B. Richman, Ph.D.

College Professor and Curator of the Arthropod Museum Emeritus

New Mexico State University

Las Cruces, New Mexico

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Over the last five years I have been accumulating observations and photographs of the arthropods associated with the Edmonds Marsh. I have limited this inquiry to what I could observe so as to disturb the area as little as possible and my identifications of samples taken by a survey of the area under city contract to Windward Environmental LLC . This does pose some limitations and the documentation that I have done is thus very incomplete and totally dependent on chance and a short trapping period. Despite this I hope to at least give some indication of the underlying complexity of this important phylum. I believe that a thorough census of the arthropod fauna would include at least 500 species, and my ca. 105 species is thus only about 20% at best. This is not an exaggeration as Frank E. Lutz found 1500 species of insects in his suburban yard in New York City (See: *A Lot of Insects* published in 1941). The arthropods found in the Marsh, Willow Creek, and nearby areas form part of the necessary basis of the food web that supports fish, reptiles, amphibians, birds and mammals. They also provide pollination services for the seed plants and these are also part of the vital food web of the Marsh. Thus the arthropods are far from unimportant to what we consider wildlife, and in fact are part of the wildlife of the Marsh. The more obvious and larger arthropods include dragonflies and damselflies, butterflies and moths, larger beetles, and larger wasps and bees, but the smaller arthropods such as flies, true bugs, small wasp, bees, ants, beetles and members of minor orders are probably more numerous. With the exception of dragonflies, damselflies, a waterstrider, and a few flies I did not observe insects that have aquatic immatures or adults, so there are no stoneflies, mayflies or caddisflies in the list and primitive arthropods such as springtails, are not included, although they are all likely present. A few showy insects that should be at the Marsh (I have found them in nearby areas in Edmonds) are also not listed. These include the West Coast Lady and Red Admiral butterflies, as well as the Ten-lined June Beetle.

Bumble Bees are numerous on easily accessible sides of the Marsh and, along with other bees and wasps, increase when nectar and pollen sources are available. As these are important pollinators it is gratifying to note that three species (and possibly more) are found in the area.

Identifications are based on photographs for the most part (except for specimens collected in pan traps by Windward) and are thus not always certain, as determinations in some groups require examination of the anatomy of a given specimen. Generally I identified the arthropod in the photos, but on a few occasions I had help from various people associated with inaturalist on the Internet. The Cardinal Meadowhawk was observed and photographed by Bill

Anderson and the Zephyr Anglewing and California Spreadwing were observed and photographed by Alan Mearns. Both were identified by me.

**Insects and Arachnids observed in the area of Edmonds Marsh, many of which were photographed.
Identifications based on Windward samples are in bold.**

Non-Insect Hexapods

Elongate-bodied Springtails (Family Entomobryidae) (1 species)

Globular Springtails (Family Sminthuridae) (1 species)

Insecta

Odonata

Paddle-tailed Darner, *Aeshna palmate* (Family Aeshnidae)

California Darner, *Rhionaeschnia californica* (Family Aeshnidae)

Common Whitetail, *Plathemis Lydia* (Family Libellulidae)

Eight-Spotted Skimmer, *Libellula forensis* (Family Libellulidae)

Cardinal Meadowhawk, *Sympetrum illotum* (Family Libellulidae)

Striped Meadowhawk, *Sympetrum pallipes* (Family Libellulidae)

Pacific Forktail, *Ischnura cervula* (Family Coenagrionidae)

Tule Bluet, *Enallagma carunculatum* (Family Coenagrionidae)

California Spreadwing, *Archilestes californica* (Family Lestidae)

Orthoptera

Carolina Grasshopper, *Dissosteira carolina*, (Family Acrididae)

Spur-throat Grasshopper, *Melanoplus sanguinipes* (Family Acrididae)

Small Katydid (found dead on path) (Family Tettigoniidae)

Dermaptera

European Earwig, *Forficula auricularia* (Family Forficulidae)

Plecoptera

Unidentified family

Psocoptera

Unknown winged species

Unknown wingless species

Hemiptera

Waterstrider, *Aquarius* sp. (Family Gerridae)
Terrestrial nymph of unknown family
Leaf Bug (Family Miridae)? (2 species)
Planthopper (Superfamily Fulgoroidea) (1 species)
Aphids (Family Aphidae) (1 species)
Leafhopper (Family Cicadellidae) (1 species)
Froghopper or Spittle Bug (Family Cercopidae)
Mealy Bug (Unknown species and family)

Coleoptera

Asian Lady Beetle, *Harmonia axyridis* (Family Coccinellidae)
Red Soldier Beetle, *Rhagonycha fulva* (Family Cantharidae)
Native Soldier Beetle? (Family Cantharidae)
Flower Long-horned Beetle, *Pidonias scripta* (Family Cerambycidae)
Diurnal Firefly, *Ellychnia* sp. (Family Lampyridae)
Firefly? (Family Lampyridae) (1 species)
Rove Beetles (Family Staphylinidae) (1 species)
Leaf Beetles (Family Chrysomelidae)? (1 species)
Unknown beetle (2 species)

Lepidoptera

Western Tiger Swallowtail, *Papilio rutulus* (Family Papilionidae)
Lorquin's Admiral, *Limenitis lorquini* (Family Nymphalidae)
Painted Lady, *Vanessa cardui* (Family Nymphalidae)
Milbert's Tortoiseshell, *Aglais milberti* (Family Nymphalidae)
California Tortoiseshell *Nymphalis californica* (Family Nymphalidae)
Satyr Anglewing, *Polygonia satyrus* (Family Nymphalidae)
Cabbage Butterfly, *Pieris rapae* (Family Pieridae)
Echo Azure, *Celastrina echo* (Family Lycaenidae)
Isabella Moth, *Pyrrharctia Isabella* (Family Arctiidae)
Silver-spotted Tiger Moth, *Lophocampa argentata* (Family Arctiidae)
At least two caterpillars of one species of moth?

Diptera

Small-headed Fly, *Eulonchus tristis* (Family Acroceridae)
Syrphid Fly, *Sericomyia chalcopyga* (Family Syrphidae)
Syrphid fly, Subtribe Helophilina (Family Syrphidae)
Undetermined small Syrphid Fly (1 species) (Family Syrphidae)
Unknown Calyptrate Fly
Green Bottle Fly, *Lucilia sericata* (Family Calliphoridae)
Large Crane fly (Family Tipulidae)
Crane Flies (Family Tipulidae) (2 species- intermediate and smaller species)
Midges (Family Chronomidae) (at least 2 species of midge)
Humpbacked Flies (Family Phoridae) (1 species)

Gall Gnats (Family Cecidomyiidae) (1 species)
Dark-winged Fungus Gnats (Family Sciaridae) (1 species)
Fungus Gnats (Family Mycetophilidae)? (1 species)
Dixid Midges (Family Dixidae) (1 species, possibly a second species)
Blow Flies (Family Callophoridae)? (1 species)
House Flies (Family Muscidae) (1 species)
Dung Flies (Family Scathophagidae)? (1 species)
Snipe Flies (Family Rhagionidae) (1 species)
Anthomyzid Flies (Family Anthomyzidae) (1 species)
Anthomyiid Flies (Family Anthomyiidae) (1 species)
Marsh Flies (Family Sciomyzidae) (1 species)
Mosquitoes (Family Culicidae) (1 species)
Heleomyzid Flies (Family Heleomyzidae)? (1 species)
Long-legged Flies (Family Dolichopodidae)(1 species)
Moth Flies (Family Psychodidae) (1 species)
Diastatid Flies (Family Diastatidae) (1 species)
At least 3 species of unknown families

Several other flies were seen or photographed, but not identified. Identification of flies is difficult and often requires obtaining specimens.

Hymenoptera

Sawfly larva (1 species) (Family not certain)
 Willow Redgall Sawfly, *Euura proxima* (Family Tenthredinidae)
 Rose Hip Torymid Wasp, *Megastigmus aculeatus* (Family Torymidae)
Chalcidoid Wasp (1 tiny species) (Family not certain)
Tiny Ichneumonid Wasp (1 species – *Netella* sp?) (Family Ichneumonidae)
 Large Ichneumon Wasp, species undetermined (Family Ichneumonidae)
 European Paper Wasp, *Polistes dominula* (Family Vespidae)
 Yellow jacket, *Vespula* or *Dolichovespula* (Family Vespidae)
 Muddauber, *Sceliphron caementarium* (Family Sphecidae)
 Beewolf, *Philanthus* sp. (Family Crabronidae)
 Great Golden Digger Wasp, *Sphex ichneumoneus* (Family Sphecidae)
 Formicinae ant (Family Formicidae) (1 species)
Myrmicinae ant (Family Formicidae)(1 species)
 Halictid Bee, *Agapostemon* sp. (Family Halictidae)
 Furrow Bee, *Halictus* sp. (Family Halictidae)
 Yellow-faced Bumble Bee, *Bombus vosnesenskii* (Family Apidae)
 Fuzzy-horned Bumble Bee, *Bombus mixtus* (Family Apidae)
 Black-tailed Bumble Bee, *Bombus melanopygus* (Family Apidae)
 Western Honey Bee, *Apis mellifera* (Family Apidae)

Arachnida – Araneae

Bowl and Doily Spider, *Frontinella pyramitela* (Family Linyphiidae)
Linyphiinae spider (1 species – native) (Family Linyphiidae)

Erigoninae spider (1 species) (Family Linyphiidae)

Spiny-jawed Orb-weaver, *Metellina segmentata* (Family Tetragnathidae)

Cross Spider, *Araneus diadematus* (Family Araneidae)

Wolf Spiders (Family Lycosidae) – immature seen on platform

Zebra Spider, *Salticus scenicus* (Family Salticidae)

3 unknown species of spiders (immature)

Arachnida – Opiliones

2 species of Undetermined Harvestman.

Arachnida – Acarina

Small mite in sample, unknown family

Arachnida- Pseudoscorpiones

Pseudoscorpion, unknown family

Comment #52, Neil Gilham

Neil Gilham - Comments on Unocal Edmonds Bulk Fuel Terminal 0178

First, I want to thank Ecology for the work they do in fulfilling the mandate to “protect human health and the environment” in accordance with the Model Toxics Control Act Regulation (MTCA). On the flip side, Chevron and their consultant Arcadis have missed the mark for several reasons that I’ll touch upon. From a high-level view, my impression about the Public Review Draft Final Feasibility Study Addendum (FS) is that it reads to me like “let’s frame the DCA for the outcome we really want and then we can dust our hands off and walk away” while in the future, others must deal with the contamination left in place, only protected by piece of paper known as a “covenant” and, well, the five-year review thing that Ecology does. The desire of most Edmonds citizens is to have all contamination removed and have the Marsh restored to a functioning estuary. This is the only reasonable, practical, and permanent outcome.

The FS selects Alternative 6 as the preferred alternative. Alternative 6 includes the following elements:

- Continued operation of the dual-phase extraction (DPE) system for one year following optimization.
- Installation of an engineered cover system.
- Contingency Plan (or plans, depending on the number of contingencies that occur)
- Environmental Covenant

Alternative 6 is fraught with “if this, then that” contingencies. Is Alternative 6 an Interim Action or is it a permanent cleanup action? How many contingencies can one lump on to Alternative 6. Is there an end to this cleanup action? What is the expected timeframe for completion? Does the disproportionate cost analysis (DPA) consider these contingencies and the seemingly never-ending timeframe?

The DPA system has apparently not functioned as intended. The DPA system has operated only 30 percent of the time during its five years of operation. Does Ecology have confidence that further and continued operation of the DPA system will be more effective in the future considering its limited success so far?

Figure 19 in the FS depicts approximately 22 separate contaminated soil areas for the installation of an engineered cover system. Most of those areas are outside of the WSDOT storm drain line or away from the base of the Point Edwards slope, areas with inherent geologic hazards (e.g. slope stability). Why can’t these easily accessible outlying contaminated soil areas be excavated instead of capped?

If a functioning estuary is restored in the future, some of remaining 22 contaminated soil areas could require excavation and a reopening of involvement with Ecology. In addition, the cost to remove the capped contaminated soil would fall on a future landowner. This is an unreasonable burden on future landowners with a goal toward estuary restoration.

The 22 capped soil areas would be vulnerable to climate change induced sea level rise that could disrupt the covers and remobilize the contamination. Sea level rise will impact the long-term effectiveness and protectiveness of the proposed engineered covers under Alternative 6. Climate resilience must be separated out as an explicit factor in the DCA when evaluating the long-term effectiveness of a cleanup action alternative.

The Unocal Site is underlain by a mix of unconsolidated sand, silt, clay and sand/gravel fill. The water table is high. These saturated materials are subject to liquefaction during a large earthquake which could disrupt the engineered covers, including the emergence of sand boils through the contaminated soil.

The FS describes the WSDOT storm drain line condition as “adequate.” This is not a very reassuring description of the pipe’s condition. The pipe is over 50 years old and likely near the end of its useful life. The City of Edmonds has commented in detail on the concerns with the aging pipe and the contaminated soil that surrounds it.

My hope and desire, along with my fellow citizens, is that the Unocal Site as part of the Edmonds Marsh system be restored to a fully functioning estuary with connection to Puget Sound. Removal of all or most of the remaining contamination is a critical step toward achieving that goal.

Thank you for the opportunity to comment on the Unocal Site FS.

Sincerely,

Neil R. Gilham, LG

Comment #65, Jim Skadan

From: jimskadan@comcast.net
To: [Forkeutis, Kristen \(ECY\)](#)
Subject: Point Edwards Unocal Review
Date: Wednesday, November 13, 2024 4:26:38 PM

External Email

Dear Ms Forkeutis,

I have read the "Comments to the Revised Draft Feasibility Study 2024" prepared by our Point Edwards Unocal Review Committee and approved by our Point Edwards board of directors, and I am concerned about the fact that Chevron is proposing to allow toxic waste to remain on the Unocal site. This will complicate development of a salmon recovery estuary.

I am presenting the following questions and comments about how this decision was reached.

1. Why was the Memorandum of Understanding between the City of Edmonds and WSDOT not mentioned to show our concerns and plans?
2. Why was the fact that the state legislature gave the City of Edmonds a right of first refusal to purchase the Unocal site not used to show our concerns?
3. Why was the fact there has been **significant** support for a salmon recovery estuary not commented upon in the Feasibility study or Addendum.
4. Why does Ecology say that the future use of the Unocal site is as an ecological habitat?
5. Why does Ecology say that they support salmon restoration but will not say that one planned use of the Unocal site is as a salmon estuary?
6. Why does Ecology say that they do not want to dictate the use of the Unocal site when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?
7. In the 2017 Feasibility study what percentage weight was given to public concerns?
8. In the 2017 Feasibility Study what weight was given to Tribal concerns?
9. What objectives were set for public concerns and Tribal rights and interests?
10. Why is there no documentation on what invitations were sent to the tribes and their responses?
11. What tribal engagement plan was developed for the Unocal site and why is it not listed in the feasibility study?
12. Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?

The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers **billions** of dollars. Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

Thank you for your attention to my concerns,
Jim Skadan
Point Edwards

Comment #66, Sarah Boyd

From: [Sarah Boyd](#)
To: [Forkeutis, Kristen \(ECY\)](#)
Subject: Future of Unocal Area
Date: Wednesday, November 13, 2024 5:32:47 PM

External Email

TO: Kristen.Forkeutis@ecy.wa.gov

I have read the "Comments to the Revised Draft Feasibility Study 2024" prepared by our Point Edwards Unocal Review Committee and approved by our Point Edwards board of directors, and I am concerned about the fact that Chevron is proposing to allow toxic waste to remain on the Unocal site. This will complicate development of a salmon recovery estuary.

I am presenting the following questions and comments about how this decision was reached.

The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers **billions** of dollars. Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

It is my hope that sufficient toxic waste can be removed so that a salmon recovery estuary can be created efficiently and cost-effectively. I appreciate your consideration of these important issues.

Regards,

Sarah Boyd
41 Pine Street #211
Edmonds WA 98020

Comment #84, Sarah Boyd

From: [Sarah Boyd](#)
To: [Forkeutis, Kristen \(ECY\)](#)
Subject: Re: Future of Unocal Area
Date: Saturday, November 16, 2024 3:36:37 PM

External Email

Kristen,

I also think Unocal should be responsible for the complete, more expensive cleanup. The land must be returned to the public in as fine shape it was in when Unocal

Started to use it.

Sarah Boyd

On Nov 14, 2024, at 4:31 PM, Forkeutis, Kristen (ECY) <kfor461@ecy.wa.gov> wrote:

Hello Sarah,

Thank you for providing questions and comments for the [Unocal Edmonds Bulk Fuel Terminal 0178 cleanup site](#) public comment period. Your submission will be uploaded to our [online comment portal](https://tcp.ecology.commentinput.com/?id=JVTuG) (<https://tcp.ecology.commentinput.com/?id=JVTuG>), so it is included in the public record of comments.

After the conclusion of the comment period on November 24, 2024, at 11:59 pm, Ecology will review all the comments and assemble a Response to Comments Summary document. Once the document is complete, it will be posted to the webpage and shared with all the commenters by email. Please be aware this process will take a fair amount of time to complete.

Please let me know if you have any questions about this process.

Thank you for your concern and feedback.

Kristen

Kristen Forkeutis (she/her)
Community Outreach & Environmental Education Specialist
Washington State Department of Ecology
[Northwest Regional Office](#) | Toxics Cleanup Program
Cell: 425-240-4353 | kristen.forkeutis@ecy.wa.gov

Comment #96, Point Edwards Owners Association

Comments to the Revised Draft Feasibility Study 2024

Submitted by the Point Edwards Unocal Review Committee
and the Point Edwards Owners Association Board

I. Introduction

The Department of Ecology should substitute a new alternative for the current Alternative 6, which is Chevron's recommended remedial alternative for the Unocal site cleanup. That new alternative would excavate sufficient newly identified locations of contaminated soil to allow a path for Willow Creek to reach Puget Sound. This would allow salmon migration and restoration. The remaining contaminated soil, including that beneath the WSDOT storm drain line, would remain on site. That contaminated soil would be contained by an engineered cover and an environmental covenant.

The current Alternative 6 does not meet the requirements of the MTCA and must be removed because it fails to meet any of these six administrative requirements:

- properly consider Public Concerns;
- properly consider Tribal Interests;
- properly consider Future Uses; or
- present data in a manner that allows the public to comment on selected Alternatives;
- Failed to consider all reasonable alternatives;
- Did not consider climate change.

The need for a new Alternative instead of the current Alternative 6, does not preclude Ecology from selecting Alternative 4, the total removal of all toxic waste from the Unocal site. The newly substituted Alternative would replace the current Alternative 6 for analysis and comparison with Alternative 4 in the Disproportionate Cost Analysis selection process.

II. Reasons to Substitute Alternative 6 with a New Alternative

A. The 2024 Addendum to the 2017 Draft Feasibility Study failed to properly select the appropriate alternative actions for remediation.

1. Legal Requirements under the MTCA

The 2024 Addendum should have substituted a new alternative for the 2017 Alternative in order to meet the changed conditions surrounding the Unocal site. The Department of Ecology requested the addendum to "reevaluate remedial alternatives..." Addendum 1-1.

Remedial alternatives are analyzed and selected as a part of a process governed by WAC 173-340: the crafting of a feasibility study.

The purpose of the feasibility study is to develop and evaluate cleanup action alternatives to enable the selection of a cleanup action that meets the requirements in WAC **173-340-360** and conforms to the expectations in WAC 173-340-370.

WAC 173-340-351(1).

What is to be evaluated in the feasibility study, or its scope, depends upon many factors, including the “characteristics of the site.” WAC 173-340-351(5). Additionally, when developing a feasibility study, specific steps must be taken.

Steps. Except as otherwise directed by ecology, a feasibility study of cleanup action alternatives must be conducted in accordance with the following steps. The study should remain flexible to avoid collecting unnecessary information or conducting unnecessary evaluations.

(a) **Step 1: Identify cleanup goals.** Identify the goals for the cleanup action, in addition to compliance with the requirements in WAC **173-340-360**. Include any planned future uses of the site and any habitat restoration or resource recovery goals for the site.

(b) **Step 2: Identify alternatives.** Identify cleanup action alternatives for evaluation in the study. The alternatives must achieve the goals identified in Step 1 and comply with the requirements in WAC **173-340-360**.

WAC 173-340-351(6) (emphasis added).

After evaluating alternative remedial actions and in making its selections, the Department of Ecology must consider non-quantitative factors.

Public concerns and tribal rights and interests. For ecology-conducted or ecology-supervised remedial actions, ecology will consider the following when selecting a cleanup action:

(i) Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified under WAC **173-340-600** (13) and (14); and

(ii) Indian tribes' rights and interests identified under WAC **173-340-620**.

WAC 173-340-360(3)(d).

The 2017 Draft Feasibility Study (2017 FS Study) failed to properly meet the requirements of WAC 173-340 351, and the 2024 Addendum failed to correct those errors to meet the changed conditions in the environment.

2. Characteristics

Chevron accurately defined the characteristics of the site. The Unocal site is very near Puget Sound, bordering a marsh that has some access to Puget Sound. Willow Creek runs through the site and contains a salmon hatchery. Willow Creek also has access to Puget Sound. The 2017 Draft Feasibility Study and the 2024 Addendum also accurately describe the site.

3. Goals

Chevron listed cleanup goals in its Final Feasibility Study Work Plan dated October 5, 2012, at p. 14, and the Final Interim Action Work Plan dated July 19, 2016, at pp. 14-15. The objectives listed in 2012 and 2016 did not include future uses or habitat restoration as required by WAC 173-340-351(6)(a) or comply with WAC 173-340-360(3)(d), which requires consideration of public concerns and tribal rights and interests. The 2017 Draft Feasibility Study and the 2024 Addendum added nothing to Chevron's objectives.

While Alternative 6 as drafted may meet the objectives listed in 2012 and 2016, Alternative 6 cannot achieve any goal related to public concerns, tribal rights, future use, or habitat restoration, because the Department of Ecology did not consider or set these goals. Ecology also admits that Chevron has deliberately ignored the MTCA requirements that future uses and habitat restoration which are required by WAC 173-340-351(6)(a).

The Cleanup Action Plan is designed for the remedy to be protective of human health and the environment. The current draft Cleanup Action Plan was not designed to incorporate needs of habitat restoration or daylighting tidal connection.

Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, July 2020, Publication 20-09-152, p. 5 (emphasis added).

4. Future Uses

Chevron's position on future uses is as follows:

Since 2022, Ecology has stated that the potential future use for the Lower Yard is Open Space. Presumably, Ecology reconsidered the Lower Yard Future Use based on current use, comments received from WSDOT, as well as publicly available information from the City of Edmonds.

Addendum, Land Use and Zoning, page 1-3.

Yet, Ecology claims that land use was determined by Chevron. Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178 July 2020, Publication 20-09-152, p. 5.

Since WSDOT made the decision to abandon the use of the Unocal site as a ferry terminal, neither Chevron nor Ecology has come to terms with what the potential future use of the Unocal site might be. The best that can be said is that Ecology considers the future use to be open space available as an ecological habitat. "Due to the expected future use of this Site as" Open Space

available as ecological habitat." Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, January 2024.

In plain dictionary language, Ecology considers the use of the Unocal site as a space where plants and some types of animals might live. There is no mention how Ecology reached its decision or why it did not consider a salmon recovery estuary. A mere statement that the Unocal site can be used as open space that plants and animals can live in does not meet the Department of Ecology's obligations under the MTCA.

5. Public Concerns

The most complete description of Chevron's understanding of public concerns is in the 2024 Addendum, 6.1.6, Public Concerns, page. 6-6. The Addendum notes that public concerns relating to noise, traffic, risks, and impacted soil and water remaining on the site have been melded into Alternatives 4 and 6. There is no mention of public concern over the future use of the site. Yet, the MTCA includes in public concerns the "future land use" of the site. WAC 173-340-600(9)(e).

There has been ample public planning on the future use of the Unocal site as a salmon recovery estuary. See paragraph 3(b) below. There have been strong and vocal public efforts to promote consideration of the future use of the Unocal site as a salmon recovery estuary at the public hearings and open houses conducted by Ecology. However, **there is no mention** of salmon or an estuary in the 2017 FS Study or the 2024 Addendum. The only comment is contained in the Question and Answer Sheet of July 5, 2020:

The City of Edmonds and community groups have expressed an interest in a portion of the Site being used as part of a marsh restoration project to daylight tidal connections between Edmonds Marsh (not part of the Site) and Puget Sound, making the marsh accessible for migrating salmon, including the endangered juvenile Chinook.

Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, July 2020, Publication 20-09-152, p. 3.

But when asked about Ecology's position on this public concern, Ecology only said:

Ecology supports habitat restoration projects that actively preserve, restore, and enhance existing wetlands throughout the state. Nevertheless, Ecology does not dictate how property is used by the property owner ...

Id. at p. 4.

The issue is not whether Ecology supports salmon recovery estuary as a public concern, but whether Ecology should consider a salmon recovery estuary and include a salmon recovery estuary as a public concern in the Revised Draft Feasibility Study.

6. Tribal Interests

Ecology also did not mention tribal interests in the Revised Draft Feasibility Study. Ecology says that they invite tribal participation. Public Participation Plan August 2024, p. 14. But there is no discussion of how the invitations were made or the results of any such invitations.

When selecting alternatives for a cleanup plan, the feasibility study must identify goals for habitat restoration and comply with WAC 173-340-360, which requires that any cleanup action consider Indian tribes' rights and interests identified under WAC **173-340-620**. WAC 173-340-351(6).

WAC 173-340-620 states:

Tribal engagement.

- (1) **Purpose.** Tribal engagement is an integral part of ecology's responsibilities under chapter **70A.305** RCW, the Model Toxics Control Act. Ecology's goal is to provide Indian tribes with timely information, effective communication, continuous opportunities for collaboration and, when necessary, government-to-government consultation, as appropriate for each site.

...

- (3) **Tribal engagement plan.**

- (a) Ecology will develop a site tribal engagement plan that identifies Indian tribes that may be adversely affected by the site, opportunities for government-to-government collaboration and consultation, and protocols for communication.

- (b) Ecology will seek to initiate meaningful engagement with affected Indian tribes before initiating a remedial investigation or an interim action at a site. Ecology will maintain meaningful engagement with Indian tribes throughout the cleanup process.

There appears to be no tribal engagement plan establishing or discussing meaningful engagement over tribal interests.

7. Failure to meet with the requirements of the MTCA

Alternative 6 cannot comply with the required consideration of public concerns and tribal rights, because there was no mention of tribal rights. Any discussion of public concerns was limited to dust, dirt, and noise, as well as containing and not removing contamination. There was a deliberate refusal to consider future uses. Put simply, Alternative 6 cannot be used as a remedial option because it fails to comply with the MTCA. A new Alternative is necessary.

B. What considerations should go into selecting a replacement for Alternative 6?

1. The future use of the site *must* be considered.

Plans exist for the use of the Unocal site as a salmon recovery estuary. The Washington State Legislature in a budget note gave the COE the right of first refusal to purchase the Unocal

site from WSDOT to “rehabilitate near-shore habitat for salmon and related species.” The COE and WSDOT entered into a Memorandum of Understanding (MOU) on the procedures for the purchase of the Unocal site from WSDOT. The Edmonds Marsh Estuary Advocates (EMEA) has circulated a vision of a possible salmon recovery estuary, which is one possible outcome for the Unocal site. EMEA has also helped the COE to obtain a National Fish and Wildlife grant to study sea level rise and use of the Unocal site for salmon recovery.

These plans should have been mentioned in at least the 2024 Addendum. The MTCA does not require consideration of future use be based upon use by current owners or a prospective purchaser. The MTCA speaks of “**any planned future uses** of the site and **any habitat** restoration or resource recovery goals of the site.” WAC 173-340-351(6)(a) (*emphasis added*). WAC 173-340-708(a and b) speak of “potential future site use.” These plans for future use will support a new alternative to Alternative 6.

2. Public concern must be properly addressed.

The purpose of the MTCA is the protection of human health and the environment. The Revised Draft Feasibility Study properly supports that purpose. But public concern is required to be considered in achieving that purpose and public concern encompasses more than human health and the environment.

WAC 173-340-360 governs the evaluation and selection of cleanup action alternatives:

... ecology will consider the following when selecting a cleanup action:

- (i) Public concerns, including the concerns of likely vulnerable populations and overburdened communities, identified under WAC 173-340-600_(13) and (14) ...
- (ii) (ii) Indian tribes' rights and interests identified under WAC **173-340-620**.

WAC 173-340-360(d) (*in part*).

The concerns of vulnerable populations, overburdened communities, and tribal interests extend beyond human health and the environment. It is important to note that public concerns are specified as a separate and individual concept and not restricted to vulnerable populations, overburdened communities, and tribal rights and interests. The MTCA puts future use of the site into play.

The work by the Edmonds Marsh Estuary Advocates, the Point Edwards Unocal Review Committee, the Edmonds City Council, the Edmonds Mayor’s Office, and the state legislature, all directed towards the Unocal site becoming a salmon estuary, must be included in the selection of alternatives for the cleanup of the Unocal site.

3. Tribal interests must be Considered.

Even if tribal interests cannot be identified through the use of a Tribal Engagement Plan under WAC 173-340-620, known tribal interests must be considered, because they are intertwined with the interests of all citizens of the State of Washington.

In *United States v. State of Washington*, 384 F. Supp. 312 (W.D. Wash. 1974), *aff'd and remanded*, 520 F.2d 676 (9th Cir.1975), commonly known as the *Boldt Decision*, the courts recognized that, under federal treaties with the tribes, Native American tribes were entitled to take 50% of the salmon and to co-manage the salmon fisheries. In *United States v. Washington*, 853 F.3d 946 (9th Cir. 2017), commonly known as the *Culvert Case*, the court required Washington to replace designated culverts under its highways that impeded the passage of salmon to spawning grounds. In doing so, the court spoke of the decline in salmon stock:

A primary cause of this decline is habitat degradation, both in breeding habitat (freshwater) and feeding habitat (freshwater and marine areas) . . . One cause of the degradation of salmon habitat is . . . culverts which do not allow the free passage of both adult and juvenile salmon upstream and downstream.” The “consequent reduction in tribal harvests has damaged tribal economies, has left individual tribal members unable to earn a living by fishing, and has caused cultural and social harm to the Tribes in addition to the economic harm.

Id. at 961.

The Seattle Times reported on November 19, 2023, that the 20-year cost to remedy the culverts that were barriers to salmon was between 7.3 to 7.8 billion dollars.

These tribal interests are common knowledge. Both Chevron and Ecology are charged with knowing these interests. The cost of ignoring Tribal rights is a public concern. As the Feasibility Study is designed to develop and evaluate cleanup action alternatives, the study must review and consider Public Concerns including Tribal Interests.

- 4. The 2024 Addendum DCA (Disproportionate Cost Analysis) fails to separate the costs for excavating those newly identified locations exceeding 2x the approved CULs from the costs of excavating contamination around the WSDOT storm line, thus preventing the public from making informed comments on the DCA and any possible new Alternatives.**

It appears that there are cost effective alternatives to the cleanup of the Unocal Site that have not been studied and evaluated by Chevron. The manner in which Chevron reported the costs for Alternative 4 and Alternative 6 prevents the public from adequately commenting on the Alternatives or adequately exploring alternatives not considered by Chevron.

The costs of total excavation under Alternate 4 have risen. In 2024, the site-specific TEE that was directed by Ecology after WSDOT abandoned its planned ferry terminal and Ecology became uncertain as to the site’s future use was released. Addendum, p. 1-2. A TEE determines

whether the release of a hazardous substance in the soil poses a threat to plants, animals, or humans. A TEE will set site specific cleanup standards for the site. The data collected from the study will be used in determining cleanup standards for the site. The specific procedures prescribed for a TEE are not suitable for evaluating wetlands or surface water. WAC 173-340-7490(1). The new TEE was requested by Ecology because Ecology did not recognize that the potential future use of the site could be a salmon recovery estuary, and the site was bordered by plants and animals. Addendum, pp.1-2 and 2.2. (With this uncertainty in proposed end use for the Lower Yard) and (A site-specific TEE is required if a site is located on, or directly adjacent to, a natural area.)

In 2017, when the DCA was estimating the cost of excavation for Alternative 4, the areas subject to excavation were a large area near the WSDOT Storm Drain and 4 small locations labeled “statistically insignificant.” The estimates ranged from a low of 5.473 million dollars to a high of 8.645 million dollars. In 2024, when doing the same cost analysis for Alternative 4, nothing had changed except that the new TEE had exposed about 16 new locations of contamination. These new locations increased the 2024 cost estimates for Alternative 4 from a low of 8.021 million dollars to a high of 11.427 million dollars. The 16 new locations had increased the low estimated cost of excavation by 2.568 million dollars and the high estimated cost by 2.782 million dollars. The average cost of excavating the 16 new locations of contamination is \$167,187.

But the cost of excavating the new locations of contamination is not equal. The 2024 Addendum speaking of the high excavation costs for Alternative 4 notes:

Excavation of additional areas where COPECs exceed the site CULs will also require shoring to protect the BNSF ROW (Right of Way) and the toe of the northwest slope of the lower Yard. These requirements contribute to the significant cost of these alternatives.

Addendum, page 6.7.

At the public hearing on September 16, 2024, the contaminated soil was reported as being “very shallow.” The Questions and Answers Sheet Unocal Edmonds Bulk Fuel Terminal 0178, Question 7 reported that the contamination was within 4 feet of the surface.

So, there are locations that are high cost to excavate and those that appear lower in cost. But Chevron has not reported the cost to excavate the individual locations of contamination. Perhaps this can be done as the 2024 revision of Alternative 6 includes Chevron conducting additional soil sampling of the new locations. If so, the public can estimate the cost of excavation a channel through the contaminated locations.

The calculations in this comment indicate that there is room for viewing other possible alternatives for cleanup. It very well may be possible to excavate a portion of the newly identified impacted soil and meet the requirements of the MTCA. These possible alternatives should have been considered in the 2024 Addendum.

5. The Public is unable to properly comment on key portions of the Revised Draft Feasibility Study because of the way essential data or information is presented or not discussed.

The MTCA is replete with requirements that the public be allowed to comment on the analysis and decision made in cleaning up a toxic waste site. However, the Revised Draft Feasibility Study does not allow appropriate public comment on some key points.

- The weight given to public concern and Tribal Interests is unknown. When objectives were set for Alternative 6, public concern and tribal interests were not mentioned. Final Interim Action Work Plan dated July 19, 2016, pp.14-15. This is not to say that the objectives were wrong, they were just inadequate. When Public Concerns were finally discussed, they remained limited to Chevron's 2012 and 2016 vision of the Unocal site. New issues were brought to Chevron and Ecology around a salmon recovery estuary, and they remained silent. That silence raises concerns over what weight they were given in the Disproportionate Cost Analysis. All that the feasibility study can say is that the old views were considered in Alternatives 4 and 6. But what weight in the Disproportionate Cost Analysis was it given to the concerns of the citizens who attended meetings, the concerns of the City of Edmonds and the concerns of the tribes? If any weight was given, it is unknown.
- Also unknown is what the cost would be to excavate some of the newly identified locations of contamination produced by the 2024 TEE. Without this information, no appropriate comment can be made about the selection of alternatives. The feasibility study is designed to review reasonable alternatives. Without looking at the cost of excavating individual locations of newly identified toxic waste (SWLY A 12WALL, EXB14-FF-6-4, etc.), no real comment can be made on whether or not all reasonable alternatives have been explored.
- The Revised Draft Feasibility Study does not discuss climate leaving the public unable to comment on whether climate change has been properly considered.
 - (a) WAC 173-340-360 (6)(f) requires that the remedial investigation of the site include the effect of climate change.
 - (b) WAC 173-340-360 (3)(a)(v) requires that cleanup actions have resilience to climate change.
 - (c) WAC 173-340-(360)(d)(5)(iii)(A)(III) require that when doing a DCA for a cleanup action selection when evaluating long term effectiveness, the feasibility and cleanup action must consider the resilience to climate change impacts.

The Revised Draft Feasibility Study does not consider these factors.

Given the fact that the Unocal site is a low land former marsh bordering the Edmonds Marsh and the critical slope upon which Point Edwards sits as well as very near Puget Sound with its significant wind and wave action, climate change must be considered. The question is not whether these considerations would change the ultimate decision. Rather the public has

a right to comment on why these considerations should or should not impact the ultimate decision.

III. Conclusion

The MTCA guides the selection of alternatives for cleanup of toxic waste sites. Unless the requirements of the act are followed, including consideration of public concerns, future use, tribal interests, and habitat restoration, a skewed result considering only the cost of removal will occur. That is what has happened here.

While Chevron may have been surprised by WSDOT's abandonment of its ferry terminal, there was time and information available to consider the non-quantitative requirements of the MTCA. WSDOT changes in its plans and Ecology changes in regulations could have been handled by the 2020 Addendum. But new issues raised by the public were ignored and tribal interests were not considered.

What Chevron wants to do is to save money by leaving islands of toxic waste within the Unocal site, knowing that these spots of remaining toxic waste will have to be removed in order to create a channel opening the Unocal site to Puget Sound to salmon. Chevron has a duty to remove toxic waste so that the site is not only safe for humans and the environment, but also that the site can be used. While not falling under the explicit rule of *United States v. Washington*, the Culvert Case, what Chevron is doing clearly disregards tribal interests. Chevron is leaving barriers to salmon recovery in place and telling others, "If you want to use the site for salmon recovery, you have pay for the removal of our toxic waste."

If this were a culvert it would not be allowed to happen.

Michael Mitchell, Point Edwards, Unit 31/307

Member. Point Edwards Unocal Review Committee

Member, Edmonds Marsh Estuary Advocates, Technical Team

mtmj1946@gmail.com

Comment #97, Tanya DeMarsh-Dodson

I will be brief, the points I want make are to aid in giving a broad historical perspective to the matter of what we humans can do to create a viable resilient place in which to live.

The restoration of the Edmonds Marsh to an estuary is a localized regional opportunity, a rare one, to restore an estuary and maintain an existing coastal marsh on the shore of Puget Sound. It is a chance to perpetuate a portion of the remarkable ecosystem which Captain Vancouver encountered when he sailed into what is now known as Puget Sound, a place that still bears the name he gave it. The region is much different now than when he sailed into its waters in the late 18th century. Americans from the east of the nation began to settle the area in the mid 19th century have transformed it. The coastal wetlands function now as they did in the 18th century but now are even more significant for human well-being as there are so few of them; they store even more carbon than our precious forests. The economy of Edmonds is made robust by visitors, many of whom are attracted by the opportunity to visit the natural areas adjacent to the city to watch birds or just enjoy the natural spaces. When considering the economic investment in rehabilitating the land contaminated by petrochemical enterprise, there is much that is relevant to consider.

Consulting with people of the tribes who lived and pursued their livelihood in the Edmonds area when the Europeans arrived and began to settle is important also. They live in the area today and have an interest in the ecological health of the coasts of Puget Sound which are still important to them as fishing is important to their economy. Their opinions and suggestions are important to planning for the future of the Edmonds wetlands.

Chevron reaped considerable income from the use of their Edmonds property from the bulk fuel terminal and asphalt factory, is it unreasonable to ask them to be responsible for the population of the land from which they realized their income.

The solution offered as an alternative to restoration, capping the property, could only be successful if climate change were arrested and sea-level rise averted, which is unlikely. Rehabilitation is suggested by scientific study.

Puget Sound is a bountiful region, one that has sustained human population well for many generations. The ecosystem has suffered great damage since the 1850's, we humans need to take care of it if it is to continue to sustain us.

Comment #98, Debora Ashland

Public Comments on the Chevron Environmental Management Company

Public Review Draft Final Feasibility Study Report Addendum, August 19, 2024

Comments submitted by Debora Ashland, Edmonds resident, November 19, 2024

I am providing comments as part of the Public Comment Period for the Chevron Environmental Management Company, Public Review Draft Final Feasibility Study Report Addendum, August 19, 2024. Thank you in advance for your consideration of these comments.

I support Alternative 4 as the most permanent, best solution proposed, and the only alternative meeting the Adjusted Cleanup Standards [WAC 173-340-700(3)] in order to clean-up the contaminants identified in the Lower Yard of the Chevron site.

This site has been used for decades as a business and numerous changes to the site were undertaken during that time by the Owner. Unfortunately, many of those changes modified, filled, and contaminated the site. The current property owner benefitted from the use of the site for decades. During that time, we, as a society, have also learned a great deal about hazardous materials and the need to remove them from our lands to prevent hazards to people and the environment through air, touch, dust, surface water, and groundwater. Owner's that contaminate their sites need to be responsible for cleaning up their mess. While I would like to see the Owner responsible for returning the site to its original condition, I understand that will never happen. Therefore, I support requiring the Owner to remove all known contaminants. Complete the clean-up of this site now and be done with it so the City of Edmonds and community can move on. The only alternative that can provide this is Alternative 4.

Much clean-up has been done, however it is not yet complete, and numerous areas are testing above the acceptable CUL (clean up level) requirements; water and soil. Numerous alternatives have been studied but only one removes the most contaminants as possible and that is Alternative 4. Long term maintenance will be required for Alternatives 1 and 6 but the report does not identify who would conduct this maintenance or how it will be paid for. In some places, the Report identifies 60 years of maintenance. Any future owner will need to be aware of the monitoring and maintenance responsibilities. I support some type of fund be established by the current Owner to fund these future tasks. Funding future work is particularly problematic if a public agency obtains the site. Any costs for funding future clean-up would be paid by tax payers, thereby shifting the burden from the responsible party to those that did not cause the contamination.

This Report identifies a number of categories and evaluates each alternative accordingly. Alternative 4 is the highest ranked alternative in 4 of the 6 categories. The Short Term Risk category, which Alternative 4 did not rank highest, excludes any long-term risks and therefore, does not provide a complete evaluation of the alternatives. Long term risks are evaluated in Section 6.1.3. and Alternative 4 is ranked the Highest.

The final category is costs. I believe the cost comparisons are flawed because they compare apples and oranges. Alternatives 1 and 6 do not clean-up the site, they merely cover it, thereby pushing the contamination to the next Owner. Nor do the estimates indicate the costs for future monitoring and maintenance which would add significantly to the costs listed. Only Alternative 4 cleans up the site "...and is permanent to the maximum extent practicable.

None of the cost evaluation should be a deciding factor for which alternative is required by DOE. The owner of the property contaminated the site while creating profits for their company. They should be held responsible for cleaning up the site. These impacts should not be allowed to remain and become impacts for future generations. The current Owner does not have a hardship that would prohibit them from doing the clean-up identified in Alternative 4.

Please note that the Owner of the property is a multi-billion-dollar company and the cost difference in these alternatives is less than \$10M. According to the Washington Examiner, February 2, 2024, "...Chevron outlined profits of \$21.4 billion in 2023, the second-largest profit in a decade... "In 2023, we returned more cash to shareholders and produced more oil and natural gas than any year in the company's history," said Mike Wirth, Chevron's chairman and chief executive officer." And that is for ONE year.

The following are specific comments on sections in the document. The Report language is repeated here in *italics* with the page number preceding the text in **bold**. Underline has been added to identify the exact text I am commenting on. My comments are in standard text below each item.

P 2-4 2.3.2 Groundwater Quality *CUL exceedances in groundwater from the last four quarterly events are summarized below:*

- GRO concentrations exceeded the CUL of 1,000 µg/L in MW-101, MW-518, and MW-ER....
- DRO and HRO concentrations exceeded the CUL of 500 µg/L in MW-129R, MW-20R, MW-506, MW-507 (duplicate), and MW-E-R....
- The benzene reporting limit for samples collected from LM-2 during the March 7, September 13, and November 15, 2023 groundwater monitoring events exceeded the CUL of 1.6 µg/L...
- Total cPAHs adjusted for toxicity exceeded the CUL of 0.05 µg/L in several wells during the last 4 quarters, ranging from 0.072 µg/L in MW-8R during the March 9, 2023 sampling event to 1.605 µg/L (0.019 µg/L) (duplicate) in MW-14 during the November 16, 2023 sampling event...

Groundwater is a problem in a number of locations on the site. These areas need to be cleaned up. Only Alternative 4 appears to clean-up the MW's identified in the Report by removing the materials. If I am not reading the charts and figures correctly, my comment remains that the groundwater exceedances need to be cleaned up by the current Owner. Table 2-8 indicates the location of these exceedances. The DPE system appears to be helping the contaminated groundwater problem, therefore I believe that should remain. On-going monitoring and maintenance of the DPE system needs to be determined now so that future Owner's understand the responsibility.

P 2-6 2.4 Light Nonaqueous Phase Liquid The DPE system was designed to create an inward groundwater gradient, lowering the groundwater table toward DPE wells and surrounding nearby observation wells. When the groundwater table is lowered, any residual LNAPL in surrounding soils that is typically immobile under static conditions is pulled toward the wells through the change in groundwater gradient and induced vacuum. Observations of LNAPL during discontinuous DPE system operation (static and induced drawdown conditions [i.e., shutdown and following restart]) are therefore to be expected. However, the DPE system was also designed to reduce LNAPL mass through weathering. Under DPE system operation, the LNAPL undergoes biotic and abiotic transformation including volatilization, solubilization, and aerobic biodegradation, which in turn change the characteristics of the LNAPL such as the mass fraction (Johnson et al. 1990). Throughout the remediation timeframe, it is expected that weathering will continue until

LNAPL is no longer measurable. Operation of the DPE system has successfully removed or weathered LNAPL to date as measurable LNAPL (a distinct separate layer) is no longer observed in any of the wells.

The DPE system appears to be helping the groundwater problem, therefore I believe that should remain until the LNAPL is no longer measurable as stated in the Report. On-going monitoring and maintenance of the DPE system needs to be determined now so that future Owner's understand the responsibility.

P 3-1 *3. Adjusted Cleanup Standards A cleanup standard consists of the following three elements [WAC 173-340-700(3)]:*

- CUL, the concentration that must be met to protect human health and the environment.
- POC, the location where the CUL must be achieved...

The Feasibility Study Report indicates that the CUL's must be met to protect human health and the environment. Therefore, by the WAC standard identified, only Alternative 4 meets the legal standard. Alternatives 1 and 6 leave exceedances of the CUL's on-site.

P 4-1 *In addition to the remedial technologies developed in the FS Report (Appendix A), an engineered cover system will be included as part of Alternative 6 to address soils with COC concentrations greater than twice the CUL for the direct-contact pathway from 0 to 15 feet bgs and where PSVs are exceeded, as identified by the TEE.*

If accepted by DOE, any accepted cover system should be used for ALL areas exceeding the CUL, not just areas that are twice the CUL. It doesn't make sense to allow any areas exceeding the CUL's to remain, otherwise why identify a CUL limit. It is not clear what the long-term solution is for an engineered cover. If the engineered cover finish is gravel, I think it would only support future invasives such as blackberries and other non-native species. This does not return the site to any acceptable condition. This comment is the same for Alternatives 1 and 6.

P 4-1 *The engineered cover will consist of a woven geotextile fabric and 6-inch-thick aggregate cover placed over targeted locations. The woven geotextile will be used as a separation layer consisting of Mirafi 125 280i or approved similar fabric.*

Geotextile fabric is not a long-term permanent solution. The geotextile fabric will degrade over time. Any future use will very likely disturb this system. Therefore, it is not a permanent clean-up scenario. The current Owner of the site needs to clean-up the damage they have done to the site.

P 4-2 *Long-term maintenance will be required.*

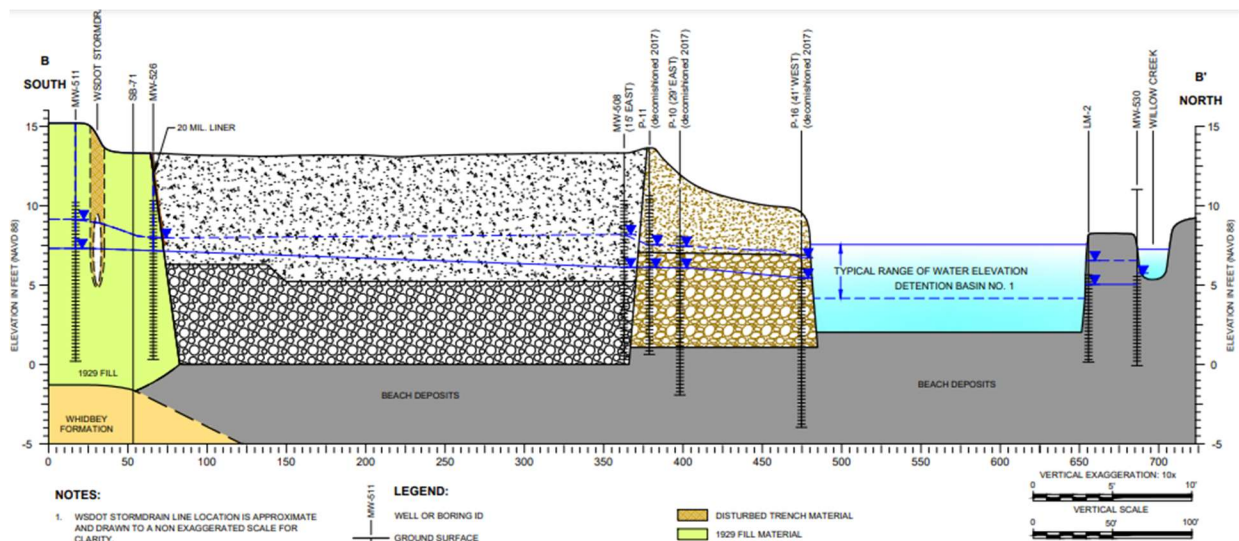
This document acknowledges the engineered cover is not a permanent solution. Maintenance will be required but it does not identify who would conduct this maintenance or pay for it. The current owner of the site needs to clean-up their damage to the site.

P 4-3 thru 4-3 4.3.1 Alternative 1: Monitored Natural Attenuation with Environmental Covenants.

Alternative 1 involves shutdown of the existing DPE system followed by an MNA sampling program to address soil and groundwater impacts along the WSDOT stormwater line and at the site boundary along Willow Creek. The MNA program will include annual sampling and analysis for dissolved-phase COCs and biogeochemical parameters along a transect of wells. This program will be implemented until dissolved-phase COC concentrations are reduced to less than CULs...ECs would be used to protect human health and the environment at the Site and would:

- Cover the entire Site, including the area already covered by the construction easement ...
- Protect against potential direct contact by Site occupants and workers with impacted soil or groundwater remaining at the Site through a Soil Management Plan

This alternative is not acceptable as it keeps all contaminants on site and caps them with engineered cover over the entire site. The DPE system would be shut down and it is not clear who would be conducting or is monitoring the MNA sampling program. The Report admits this alternative will require 60 years of maintenance. That is not acceptable. The alternative does not remove the contaminants and only adds material that cannot be disturbed in the future. However, there is no guarantee the cover would not be disturbed in the future. This cover will also increase the height of the current grade. Figure 6 shows this best. In order for a natural open space to succeed, native soils and plants will be required. If that natural area is to function as an extension of the current marsh, the grade is already too high and likely some of the current fill will need to be removed. Adding yet another layer with engineered cover does not allow for removal of the existing material without disturbing the contaminants. Any engineered cover keeps the grade well above Willow Creek, the Detention Basin, and the current Marsh, essentially rendering the area not part of a marsh environment which would require on-going intermittent flooding to survive. Figure 6 included below



P 4-4 4.3.3. Alternative 6: Dual-Phase Extraction Treatment System Operation, Engineered Cover System, Contingency Plan, and Environmental Covenant: Alternative 6 involves continued operation of the DPE system for one year following additional optimization. Optimization will include focusing system operation of both air and groundwater extraction on areas where groundwater concentrations exceed CULs. Additional soil sampling will also be implemented to confirm areas with previous soil CUL and PSV

exceedances, further refine the boundaries of the engineered cover system, and to confirm the effectiveness of the DPE system. If, following 1 year of DPE system operation, groundwater compliance monitoring indicates that dissolved-phase COC concentrations remain along Willow Creek and near the WSDOT stormwater line, additional compliance monitoring in these areas will be conducted for an additional 2 years...

Alternative 6 is not acceptable as it provides an engineered cover over a portion of the site and also shuts down the DPE system after 1 year with monitoring for only 2 more years. Although a future contingency plan is identified it is not clear who will fund or conduct this. These costs are not evaluated with these alternatives. Similar to Alternative 1, adding a layer of engineered cover to the site creates problems for the future use of the site as potential open space. See comment above for Alternative 1.

P 4-5 Part of Alternative 6 proposal: *The DPE system installed near the WSDOT stormwater line will continue to dewater soil, exposing any remaining soil impacts to volatilization through induced vapor flow and an increase in oxygen concentrations. The DPE system continues to remediate COCs in soil and minimize offsite migration of dissolved-phase COCs in groundwater. The DPE system has also reduced soil vapor concentrations in soils within the WSDOT stormwater line area as evidenced by a reduction in influent vapor concentrations monitored during DPE system operation.*

I agree the continuation of the DPE system should be continued in any scenario to assure the ability to continually monitor the site, therefore I would propose this be added to Alternative 4.

P 6-8 6.2 Final Disproportionate Cost Analysis *The alternative that ranked highest and that Ecology ranked as the most permanent after the first analysis is Alternative 4. Per WAC 173-340-360(3)(c)(i)(A), Alternative 4 was compared to Alternative 6, which is the next most permanent remedy of the updated alternatives presented.*

Comparing costs of alternatives is inconsequential if the less expensive alternatives being compared do not provide permanent solution to cleaning up contaminants on site.

P 8-1 8. Summary and Conclusions *Alternative 6 (DPE Treatment System Operation, Engineered Cover System, Contingency Plan, and Limited ECs) is the alternative that is most permanent to the maximum extent practicable*

I disagree with the conclusion that Alternative 6 is the most permanent to the maximum extent practicable. Other than this alternative being less expensive than Alternative 4, it is not the most permanent solution “to the maximum extent practicable”. Alternative 4 is the best permanent solution and can be implemented.

Comment #108, Donald Ricker

From: [donald ricker](#)
To: [Forkeutis, Kristen \(ECY\)](#)
Subject: Edmonds Marsh
Date: Thursday, November 21, 2024 2:49:07 PM

External Email

Kristen, here are a few questions that I have regarding the Edmonds Marsh:

The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers **billions** of dollars.

Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?

Why does Ecology say that they do not want to dictate the use of the Unocal site when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?

Donald C. Ricker
51 Pine Street #308
Edmonds, WA 98020

Comment #109, Suzanne and Jim Kuhlemeier

From: [JJ Kuhl](#)
To: [Forkeutis, Kristen \(ECY\)](#)
Cc: [Jim Kuhlemeier](#)
Subject: Comments on the Unocal/Chevron Property
Date: Thursday, November 21, 2024 3:24:43 PM

External Email

We are asking Ecology to please consider the use of the subject property as a salmon recovery estuary. There has been continued and dedicated support for Willow Creek and marsh restoration. Providing a salmon recovery estuary provides a unique opportunity for future generations to both enjoy this beautiful marsh and help save Puget Sound from further environmental impacts. Please support salmon restoration by explicitly stating this in the Feasibility Study as a future use of the Unocal/Chevron site. Thank you.

Suzanne and Jim Kuhlemeier

Comment #119, Bernie Zavala

Thank you for the opportunity to provide comments on the draft Feasibility Study Report Addendum - Former Unocal Edmonds Bulk Fuel Terminal, Edmonds, WA 8/19/2024. Interim Actions for this site began in 2001 and have continued to the present. The following text is my understanding of what has taken place regarding the remediation of this MTCA cleanup site in Edmonds, Washington.

Interim actions have taken place in the lower yard of the Edmonds Bulk Fuel Terminal starting in 2001. Additional interim actions will be taking place in the near future per the final report (2024) of this draft Feasibility Study Report Addendum once it's approved.

These past interim actions have included excavation of contaminated soils, and removal of LNAPL floating on the groundwater. Treatment of the soils and groundwater has also taken place through a Dual- Phase Extraction System starting in 2017 to the present. The cleanup levels for soil and groundwater were based on commercial use of the land for a Ferry Terminal which Washington Department of Transportation (WDOT) wanted to relocate from the present Ferry Terminal to the lower yard on Chevron property. WDOT has decided not to move forward on this project and has given the City of Edmonds the rights of first refusal to purchase this property. The residents and the City of Edmonds were enthusiastic about the possibility of "daylighting" Willow Creek through a stream bed instead of a pipeline to Puget Sound. It is not known where this new stream bed will be located but it is most likely will be through the lower yard and above the WDOT stormwater line. This is also the location of the Dual-Phase Extraction System. Chevron has committed to conduct a soil sampling survey to determine the current status of the soil quality based on the new 2024 Cleanup levels (CULs).

I recommend that based on the results of this soil survey that the current Feasibility Study Addendum be revised based on the findings of this soil sampling survey. The following bullets are questions and comments that I would like Ecology or Chevron to address before moving with the next interim action.

- Ecology did change the cleanup (CULs) soil number from commercial use to "Open Space" use. Why weren't "Natural Environment" use numbers used since there may be a possibility that the Willow Creek may be routed within the lower yard and a connection of groundwater and surface water may take place? Will these Open Space CULs be as protective as the Natural Environment CULs? Also, it would be good to take a closer look as a potential future use of this property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound which should be evaluated in a revised feasibility study Addendum.
- The 2017 draft Final Feasibility Study gave a restoration time frame for Alternative 6 as five to six years, with an end date of 2023. Why was Alternative 6 chosen again in the new FS addendum report August 2024? What will be a new restoration time frame and what will be the basis for this time frame? It also appears after five years of operation the Dual-well extraction system only operated approximately 30% of the time (see 2022 GW Monitoring and Dual-Phase Extraction System Operation Report,

October 2023). Will the new optimization of the DPE system be operating in a continuous manner? What is the stated goal for the operation of Dual-Phase Extraction System?

- The WDOT stormwater line is located over the main area of the cleanup in the lower yard. This stormwater line is over 50 years old and it may need replacement or repair in the near future. Consideration should be made for replacement, repair or evaluation every five years. The last evaluation was 13 years ago. The cleanup of the lower yard is still undergoing interim action and if work is needed on this stormwater line it may be a good to conduct this work during this time period.
- Updated soil samples are needed, similar to what took place in 2018. This information or the collection of soil samples in 2018 near the DPE 1-14 extraction wells determined or gave insights to the effectiveness of the DPE system after one year of operation. The results of the soil samples revealed that at nine different locations concentrations exceeded (and in some cases doubled exceeded) the CULs. Four additional DPE 15-18 extraction well were installed to remediate the soils around four monitoring wells MW-101, MW-518, MW-129R and MW-E-R. Soil sample collection should also be collected within these four areas. Also, the 22-locations where the soil concentrations were above the new CULs and the PSVs should be included in the soil sample collection program. The soil sampling program by Arcadis in December 2018 was appropriate and a similar approach can be conducted in the near future (see Dual-Phase Extraction System as-built report addendum 12/2020). A direct push drilling method was used for this soil sampling collection. It is recommend that a Membrane Interphase Probe (MIP) be used with a PID detector along with the Direct Push Rig. This set up would be helpful with the selection for the collection of soil samples to the depth of 15-feet below ground surface (BGS).
- The soil sampling results are important and may have an impact on the re-evaluation of the cleanup alternatives in this feasibility study addendum. Alternative 4, complete excavation, may in fact, have a lower implementation cost compared to Alternative 6 (or even a hybrid between Alternative 4 and 6). I also understand that Tribal rights, climate change, and sea level rise may not have been included in cost-benefit calculations.
- The groundwater quality data may have some seasonality effects. I have only reviewed two groundwater quality data reports (2021 and 2022) that I have obtained from Ecology's website. It appears that for the TPH data there are more detections or concentrations above the CULs in the second and third quarter. It would be good to plot some trend plots (ie time vs concentration) for the monitoring wells of interest to see how the concentrations have changed through the year. Has Arcadis plotted concentration trends per monitoring well? Those would be useful charts. Concentration trends per monitoring well (or at least data from a selected group of monitoring wells) should be plotted time vs concentration per CULs.

- The discussions of both compliance and attainment groundwater monitoring is a bit confusing or not explained properly. Groundwater Compliance monitoring provides data on how effectively the remedy is operating by reducing the concentrations of the contaminants of concern, COCs. Once the COCs have met the cleanup levels, then the remedy can be shut down so the groundwater flow system can go back into equilibrium, and to see if the contaminant migration continues to desorb from the aquifer or the groundwater CULs have been met. Enough groundwater quality data must be collected from the monitoring wells after the DPE system has been shut off. Twelve independent sampling events must be used to show if attainment of the CULs has been achieved, using a statistical analysis method.

If you have any questions on the above comments, please contact me.

Bernie Zavala
Edmonds resident

Comment #129, Edmonds Environmental Council

EDMONDS ENVIRONMENTAL COUNCIL



November 23, 2024

Dear Tanner Bushnell, WA Dept. of Ecology;

The Edmonds Environmental Council (EEC) is concerned that the Draft Feasibility Study is lacking in presentation and analysis of additional Alternatives whose costs and environmental benefits (especially for statewide salmon recovery) may result in Dept of Ecology selecting a preferred cleanup alternative other than Alternative 6.

An obvious missing Alternative is cleanup by excavation of all remaining contaminated sites except for the one site around the WSDOT pipe where the DPE system has operated. The public has understood there are complications with cleanup around the WSDOT pipe, but can't understand why other remaining sites would be left contaminated – the DCA for this Alternative might help explain this (or indicate this should be the preferred Alternative).

Another Alternative that needs analysis would be to require cleanup of all sites necessary to allow an up-to 20-foot wide by 10-foot deep “salmon channel” (and affiliated buffer) to transverse the property without risk of contamination. This Alternative may have sub-alternatives that present different routes for the channel.

It is also not clear if there are some remaining contaminated sites, other than the WSDOT pipe, that have unique aspects that elevate their cleanup cost. If there is such disparity in cleanup costs for the remaining sites, then that should be presented and addressed in Alternatives that leave those sites (as in Alternative 6) but require cleanup of all other less costly sites. Such presentations and respective Alternatives will help the public understand if/why Dept of Ecology would still agree that Alternative 6 should be the preferred Alternative.

The EEC requests that the Feasibility Study be revised to include the above and other Alternatives that the Dept of Ecology (not Chevron) deems necessary for determining a preferred cleanup Alternative. We also request that the DCAs put more weight on benefits to salmon recovery as that is the intended future use of the property. We also request the revised Feasibility Study (as described above) be made available as a draft for public comment.

Joe Scordino, President of the Board
Edmonds Environmental Council

<https://EdmondsEnvironmentalCouncil.org>

Comment #135, Paula Mueller

From: [paula mueller](#)
To: [Forkeutis, Kristen \(ECY\)](#)
Subject: Unocal Site Clean Up Edmonds Washington
Date: Sunday, November 24, 2024 9:20:08 AM

External Email

Ladies and Gentlemen:

The Point Edwards Unocal Review Committee and the Point Edwards Homeowners Association board of directors recently submitted a detailed letter outlining a number of concerns with the most recent proposal for addressing the contamination clean-up for the site adjacent to the Edmonds Marsh.

In support of that letter, I am expressing my own concerns as outlined below.

- <!--[if !supportLists]-->1. Why was the Memorandum of Understanding between the City of Edmonds and WSDOT not mentioned to show our community concerns and plans?
- <!--[if !supportLists]-->2. Why was the fact that the state legislature gave the City of Edmonds a right of first refusal to purchase the Unocal site not used to show our concerns?
- <!--[if !supportLists]-->3. <!--[endif]-->Why was the fact there has been **significant** support for a salmon recovery estuary not commented upon in the Feasibility study or Addendum.
- <!--[if !supportLists]-->4. Why does Ecology say that the future use of the Unocal site is as an ecological habitat?
- <!--[if !supportLists]-->5. Why does Ecology say that they support salmon restoration but will not say that one planned use of the Unocal site is as a salmon estuary?
- <!--[if !supportLists]-->6. Why does Ecology say that they do not want to dictate the use of the Unocal site when the issue is not whether Ecology supports that use (salmon recovery) but whether the Feasibility study should consider a salmon recovery estuary as a potential future use for the site?
- <!--[if !supportLists]-->7. In the 2017 Feasibility study what percentage weight was given to public concerns?
- <!--[if !supportLists]-->8. <!--[endif]-->In the 2017 Feasibility Study what weight was given to Tribal concerns?
- <!--[if !supportLists]-->9. <!--[endif]-->What objectives were set for public concerns and Tribal rights and interests?
- <!--[if !supportLists]-->10. <!--[endif]-->Why is there no documentation on what invitations were sent to the tribes and their responses?
- <!--[if !supportLists]-->11. <!--[endif]-->What tribal engagement plan was developed for the Unocal site and why is it not listed in the feasibility study?
- <!--[if !supportLists]-->12. <!--[endif]-->Why was there no consideration that in order to meet the goals of salmon recovery, perhaps not all of the newly identified locations of toxic waste need be excavated?
- <!--[if !supportLists]-->13. <!--[endif]-->The courts and legislature have adopted a public policy through court orders and budgets mandating that barriers imposed by culverts be rebuilt so that salmon resources can be enhanced. This may cost the taxpayers **billions** of dollars. Why should the DCA weigh costs in a manner that allows Chevron to avoid a few million dollars in cost (well under 11.427 million dollars) that would create a path through the Unocal site for salmon?

At a time when our State, led by Governor Inslee's own efforts, has done much to remove dams, redesign stream flows and remove and enlarge culverts that impede salmon migration, it seems that the Department of Ecology is missing an opportunity to further support for this important restoration in the city of Edmonds.

Respectfully,

Paula L Mueller

paulamueller@comcast.net

206-930-8165

Point Edwards

55 Pine St., Unit 304

Edmonds, WA 98020

Comment #140, Diane Buckshnis

From: d.buckshnis@comcast.net
To: [Buroker, Thomas \(ECY\)](#); [Bradstreet, Laura \(PSP\)](#); [Mulvihill-Kuntz, Jason](#); [Rosen, Mike](#); council@edmondswa.gov; [Bushnell, Tanner \(ECY\)](#); [Forkeutis, Kristen \(ECY\)](#); ["Wilkinson, Jason"](#)
Cc: ["Edmonds Environmental Council"](#); ["Edmonds Marsh-Estuary Advocates"](#); [ACE President](#); [Jack Faris](#); [Marjie Fields](#); [Joan Bloom](#); ["Ken Reidy"](#); ["greg ferguson"](#); [Williams, Phil](#); [Hope, Shane](#); ["Edmonds Stream Team"](#); ["Brian Soergel"](#)
Subject: Public Comment Period for Unocal Property from Edmonds Environmental Council
Date: Sunday, November 24, 2024 2:54:56 PM
Attachments: [241123 EEC Comments to Dept Ecology on Unocal.pdf](#)
[Buckshnis Proposal for Public Private Partnership for Edmonds Marsh restoration.pdf](#)

External Email

Greetings,

Attached is the public comment submitted today by our new non-profit organization known as the Edmonds Environmental Council (EEC). The group was created to combat the bad codes passed by local jurisdictions without using best environmental science or receiving biased reports that cause poor environmental policies and practices. All of which threatened our environment and human health and future generations will suffer considerably from the unintended consequences. Our board understands local legislative decisions facing Administrations with these alarming State housing mandates. Our Board has decades of knowledge about the Edmonds Marsh (backed by science from the Edmonds Stream Team) coupled with state and local legislative knowledge of regulatory requirements. We also understand the agency pressures that come into play when large Corporations want to bury "past bad environmental actions" and can commiserate; but that pressure should not be acceptable action. For those that haven't checked, Chevron's annual revenue in 2023 was \$200.949BB; and year to date, as of 9/2024 was \$197.746BB - so to ignore cleaning those 22 hot spots and make them part of any restrictive covenant is plain wrong. Chevron MUST pay to clean up their hot spots as they created them and this requirement should be a normal course of business.

I also included my Public Private Proposal that I sent a couple of weeks ago as I understand the "Little Island" link was broken. For this proposal to work and enact change, the Governor's Office will need to be actively involved and want to continue to promote Governor's Inslee's initiative of "NET ECOLOGICAL GAIN" and help our environment through restoration programs as the Governor can require the transfer from one agency to the City of Edmonds. So, I am hopeful that once Governor Ferguson takes office, the City of Edmonds will once again meet with the Governor's group to discuss this opportunity.

Thank you for your time,

Diane Buckshnis

Edmonds City Council and WRIA 8 Salmon Recovery Council 2010-2023

Puget Sound Partnership Salmon Recovery Council 2015-2023

WRIA 8 Salmon Recovery Council Grant Funding Committee 2014-2024

Visit www.edmondsenvironmentalcouncil.org for details about our mission.

Proposal for Edmond's Marsh Near-Shore Estuary restoration plan using a Public/Private Partnership Business Plan

Background:

In 2021-2022 WRIA 8 Salmon Recovery Manager Jason Mulvihill Kuntz, Edmonds City Council Member and WRIA 8 delegate Diane Buckshnis, and Edmonds citizen Jack Faris were tasked by Puget Sound Partnership (PSP) Salmon Recovery Council to work on establishing a public/private partnership (PPP) with high wealth donor foundations and/or citizens to obtain a private funding strategy to fund all the delayed costs which was estimated at \$35M. In 2021-2022 WRIA 8 Salmon Recovery Manager Jason Mulvihill Kuntz, Edmonds City Council Member and WRIA 8 delegate Diane Buckshnis, and Edmonds citizen Jack Faris were tasked by Puget Sound Partnership (PSP) Salmon Recovery Council to work on establishing a public/private partnership (PPP) with high wealth donor foundations and/or citizens to obtain a private funding strategy to fund all the delayed costs which was estimated at \$35M. An excellent example of a recent PPP is when Barry Diller and Diane von Furstenberg paid to rehabilitation a dilapidated pier called "[Little Island](#)". Mr. Diller's family foundation spent over \$260M to build Little Island where admission is free and committed another \$120M for the next 10 years for maintenance.

Proposal:

Create a Private Public Partnership to structure the transfer of UNOCAL property (sold in 2005 to WSDOT Ferries for \$8.1M) to the City of Edmonds at no cost to the City. Designing and restoring the near-shore estuary to optimize the native wildlife habitat found on the largest near-shore estuary along the Sound. This proposal will educate concerned environmentalists, youth, and philanthropic foundations who are unfamiliar with this unique saltwater/freshwater estuary. This proposal identifies a few methods to attain an optimal restoration plan that would create a channel from the Puget Sound to the Marsh estuary lagoon. This channel opens a pathway for salmon for spawning and recovery. Meadowdale Beach Park restoration is a perfect example and costs around \$16m with half being City bonds. My proposal relies on Private Donors to take the place of City issued bonds.

Costs, Concepts, and Logistics:

The purchase and restoration of the Unocal Property into a near-shore estuary is expensive and the Department of Ecology has provided six scenarios with estimated costs compared to the Model Toxics Control Act (MTCA) Benefits Ranking. It is complex as there remains about 22 hot spots on the "Unocal Property" and then there is a WSDot stormwater pipe that transverses the property. WSDOT has refused to include the removal of this 52+ year-old pipe. In all the scenarios, the WSDOT owned pipe is combined with the Chevron hot spots. The WSDOT storm pipe removal being the most expensive component.

In an optimal scenario, the lower section of that pipe would be removed and infiltration side stormwater channel system would be created. This scenario will not happen so DOE has indicated that a restricted covenant would be placed on this pipe. Since the hot spots and the pipe are bundled together, it is obvious part of the decree would include the hot spots. Both components as part of the decree means future costs of any clean-up when the pipe fails may fall onto the purchaser or the City of Edmonds. The hot spots are obvious a bonus for Chevron as they will remain hot spots forever which should not be acceptable to anyone that is part of this MTCA process.

DOE chose option #6 due to the lowest cost factor and as mentioned it combines Chevron's hot spots with WSDOT's pipe. The public liked scenario #4 which had the best environmental benefit but the highest costs as it would clean up everything through excavation.

Based on all the variables and knowledge of dealing with contaminated properties through my WRIA 8 grant funding work, it is HIGHLY RECOMMENDED that DOE require a NEW scenario or Scenario #7 that would bifurcate the WSDOT pipe from the hot spots. This scenario places clean-up responsibility solely with Chevron to clean-up those hot spots. The restricted covenant would not even contain this scientific problem as the clean-up costs will be bore onto who created the contamination.

The separation of these two ownership issues would be beneficial on so many factors with costs being the most significant. But from an environmental standpoint, the daylighting of the channel and lagoon could be designed to be completely separated from the WSDOT pipe which could remain in place for another 50 years. In this new scenario, the restrictive covenant would only be placed on the WSDOT pipe. With the marsh estuary restoration the channel would be diverted more south of the WSDOT pipe and/or the pipe could be lined.

The City of Edmonds has the right of first refusal in the 2024-2025 State Transportation Budget.

Additionally, the City entered in a memorandum of understanding with WSDOT-Ferries in 2023 to purchase the property. The City of Edmonds does not have the money to purchase the property. Nor has the City developed a full restoration plan since restoration and design for the beach area to the railroad was denied by WRIA 8 in 2020. State grant funding agencies will have issues with the contaminated property if the hot spots remain, so again Chevron should be held financial responsible for cleaning up these areas.

The cost to purchase the property should look at the environmental intent of State and Federal agencies goals which area "net ecological gain" and this near-shore estuary restoration should be a Top priority. Since the property was purchased by "taxpayers' gas taxes", WSDOT and the Governor Ferguson should truly show their environmental intent and transfer the property at no costs to the City.

Because of the MOU's language of payment being based "on fair value" of the property which currently is zoned commercial real estate, the City of Edmonds should also downzone to open space. While this seems like a lot of "throwing money away" due WSDOT because of the fabricated cost created from a fair market valuation, the environmental moral compass should be restore and allow the City of Edmonds to manage the restoration process and maintain the optimal urban near-shore estuary.

All costs and scope of an "optimal" restoration scenario are simple: 1) Chevron "cleans the hot spots" and is noted to be part of this historic partnership and WSDOT removes the aged WSDOT stormwater pipe. WSDOT's acknowledgement the aged stormwater pipe needs to be replaced and designs a modernized stormwater infiltration side channel. WSDOT transfers title to the City of Edmonds at a cost factor of zero as citizens have already paid for this purchase through gas tax. Private donor(s) become a part of a historic partnership that supports both State and Federal goals of salmon recovery. 2) Chevron cleans hot spots and WSDOT's pipe remains with a restrictive covenant. WSDOT transfers title to City at zero costs. The daylighted channel and lagoon are designed north creating a near-shore estuary avoiding the WSDOT pipe. As sea-level rise is expected, the pipe can either be lined or some new technology used so that when the channel expands or when the pipe fails, it will not impact on the newly restored near-shore estuary. Both scenarios include a "environmental capital raising committee to seek private funding and partnership support.

Goal: Optimal restoration of the Edmonds near-shore Marsh Estuary.

Optimal restoration of the Edmonds near-shore Marsh Estuary. To achieve this goal the following needs to be addressed. 1) create a new scenario #7 to address Chevron's responsibilities for clean-up; 2) create a private/public partnership to work towards gaining funds and managing the project; 3) resolve the property ownership with WSDOT at no cost to the City; 4) create a restoration team to include local scientists like Joe Scordino and State agencies; 4) create a private sector funding team that could include citizens like Diane Buckshnis and Jack Faris who many State and Federal legislators and agencies heads met during the WRIA 8's Ballard Locks pilot project; 5) create Governor's team to keep apprised of what could be a monumental example of private sector funding local environmental needs; 6) ensure donors know the City of Edmonds has an already established restricted funding depository (fund #017) for marsh restoration.

Objectives:

This PPP would have a potential consortium of members or representatives from the Governor's Office, DOE, WSDOT, Chevron, WRIA-8, Tulalip Tribes, the City and Port of Edmonds, the Town of Woodway, and any other stakeholder or key players.

The key to all of this is willingness of all parties to think outside the box and tap into that private donor base since many citizens of Edmonds are all in for seeing this project happen. Time will be needed to pull the teams together for the varying tasks as scientist will need to model for the threats of excess stormwater and sea-level rise occurring faster than anticipated. The creation of this historic partnership may spur other private donors to assist other Cities in restoration projects as the environmental impacts from density and growth are not being considered and Federal and State funding remains focused on growth and density.

Future generations need this to happen as well as our Orca Whales and salmon.

As noted, DOE has provided their clean-up plan and accompanying documents that are required per [MTCA process](#) and an open house was held in September and comments are due by November 26, 2024. Please provide comments to support the need for a new scenario #7 and hold Chevron accountable for its financial responsibility.

Prepared by Diane Buckshnis

Edmonds City Council and WRIA 8 Salmon Recovery Council - 13 years

Grant Funding Committee – 14 years

Puget Sound Partnership Salmon Recovery Council - 8 years

Comment #148, Kathleen Sears

I applaud the considerable progress that has been made during the almost 20 years that the lower yard of the former Unocal Bulk Fuel Terminal 0178 has been undergoing cleanup. Twenty years is a long time, and I can understand why Ecology and Chevron are eager to see it completed. I am writing to urge Ecology and Chevron to not stop now, though. Capping and covering the remaining contamination (Alternative 6) lack the permanence, protectiveness, and long-term effectiveness that is needed to meet both the spirit and the law of the Model Toxics Control Act.

The Draft Feasibility Study and Disproportionate Cost Analysis need to be revised and a more thorough cleanup plan selected.

1. Chevron Corporation made the mess — they need to clean it up.

Unocal (Chevron) reaped significant financial gain from their use of the property as a bulk fuel terminal and created significant environmental contamination in the process. Alternative 6 would pass on to a future owner the cost of removing this contamination for habitat restoration and estuary reconnection. The public, the City of Edmonds, and the Tulalip Tribes are not asking Chevron to restore the wetland or reconnect the estuary- but simply to clean it up to a level closer to how they found it so that a future landowner could do so without incurring additional costs.

2. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound should be considered in the feasibility study.

Future use: The Washington Administrative Codes (WACs) do not specify that planned or future uses are limited to the current landowner. **WAC 173-340-351(6)(a)** states: *Include any planned future uses of the site or any habitat restoration or resource recovery goals for the site.*

WAC 173-340-708(3) Reasonable maximum exposure states:

(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 site use conditions, as specified further in this chapter.

(b) The reasonable maximum exposure is defined as the highest exposure that is reasonably expected to occur at a site under current and potential future site use.

Documents supporting potential future use for estuary reconnection, habitat restoration and salmon resource recovery:

- Memorandum of Understanding between WSDOT and City of Edmonds giving the City of Edmonds the first right of purchase for the *intended use of the property to rehabilitate near-shore habitat for salmon and related species*. (MOU 2.8)
- A state legislature budget line item

- City Resolution 1508
- The 2022-2027 Parks Recreation and Open Space (PROS) Plan (page 116) (a PDF)
- The Parks Department 2022-2027 Capital Facilities and Capital Investment Plan (page 30)
- Memorandum of Understanding between WSDOT and City of Edmonds
- Letters from the Port of Edmonds and the Tulalip Tribes in support of the current NOAA Coastal Resiliency grant also support the potential future use of the site for restoration of the estuary and marsh requiring excavation of the Unocal fill and contamination. (See #5 below, Public Concern, for additional support of this future use.)

WSDOT links to future use: The existing marsh pipeline blocks salmon passage in violation of the 2013 federal culvert injunction that mandates *that the state remove fish passage barriers. The surface water channel replacing the pipeline would be on the Unocal site.* Since WSDOT holds the equitable title to the property, reconnection will be a required future use. Also, WSDOT proposed replacing the marsh pipeline with a surface water reconnection when planning use of the Unocal property for a ferry terminal. The terminal project has been abandoned but there is a detailed and specific habitat plan developed for this reconnection.

3. A more accurate cost-benefit calculation is needed.

Currently, permanently removing all contamination through excavation (Alternative 4) is rated only 12% more beneficial than capping and covering it (Alternative 6). Ecology guidance has confirmed that the cost analysis needs to consider *both quantitative and qualitative estimates and the use of best professional judgment.* The extensive benefits of estuary restoration, wetland expansion, and salmon resource recovery should be included in the analysis of benefits.

(Concise Explanatory Statement: Chapter 173-340 WAC, pages 119-120)

When considering future land and resource uses, Alternative 6 is not protective, permanent, or effective in the long term. The benefit scores for Alternative 6 should be adjusted to reflect this. A DCA comparison method should be used that does not overemphasize cost, which increases the weight given to benefits, and that includes the future costs of engineered covers.

4. Environmental hazards, especially from climate change and sea level rise, are required to be included in cleanup decision making.

The Draft Feasibility Study does not address the significant impacts that climate change and sea level rise will have on the Unocal property. Sea level rise will increase groundwater levels, and flood waters will more frequently inundate the site. These factors may mobilize contamination and allow it to move toward Willow Creek and Puget Sound through groundwater.

Sea level rise and stormwater flooding will also increase the risk that engineered covers will fail in the southwest corner of the site, where flood flows can pass under the BNSF railroad bridges before returning to Puget Sound. The covers are also at risk from waves that will overlap the railroad tracks in the future.

The location of the Unocal property adjacent to Puget Sound and in a seismic hazard zone also necessitates removing rather than covering contamination. **Ecology's current preferred Alternative 6 does not adequately consider the environmental hazards of the Unocal site.**

WAC 173-340-360 (3) (a) (iv) *General Requirements* states: A cleanup action must prevent or minimize present and future releases and migration of hazardous substances in the environment

WAC 173-340-360 (3) (a) (v) *General Requirements* states: A cleanup action must provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness

Ecology's climate change and sea level rise guidance:

- *Ecology believes that climate resilience should be separated out from the threshold protectiveness requirement. Specifying that a cleanup action must be resilient to climate change impacts that have a high likelihood of occurring and severely compromising the action's long-term effectiveness is critical in ensuring the long-term effectiveness and protectiveness of cleanup actions.*
(Concise Explanatory Statement: Chapter 173-340 WAC, pages 51-53)
- *Ecology conducted a vulnerability assessment of the state's cleanup sites to understand the types of sites most vulnerable to climate change impacts. We (Ecology) found that sea level rise poses the highest potential risk to sediment and upland cleanup sites in or near marine and tidally influenced waterbodies.*
This description accurately describes the Unocal site and supports the need for a climate vulnerability assessment prior to selecting the final cleanup plan. (Sustainable Remediation Climate Change Resilience and Green Remediation, Publication No. 17-09-052, 2023, page 1)

5. Public Concern has not been properly weighted.

Chevron lists noise, traffic, short- and long-term risks, and timeframe as the most common community concerns. They assert that complete excavation, Alternative 4, will be most disruptive to the public. This is a flawed assessment of the public's concern about the Unocal cleanup situation. Of the approximately one hundred people who attended Ecology's September 2024 public meeting, no one mentioned those concerns. Instead, the primary concern expressed was that cleanup be sufficient to make reconnecting the Edmonds Marsh to Puget Sound feasible. (Chevron's Feasibility Study Addendum, page 6.6)

6. A cleanup plan between complete excavation (Alternative 4) and no excavation (Alternative 6) should be considered.

Excavating contamination in the areas where the estuary restoration channel will be located and capping and covering contamination elsewhere would better address future land use, public and Tribal concerns, and the environmental hazards of the site at a cost much closer to Alternative 6.

Cost is a significant factor in weighing alternatives and the MTCA cleanup plan selection process favors the adoption of the least expensive alternative if the benefits are deemed to be close and the estimated costs are widely divergent. By submitting Alternative 4 with an estimated cost that is 10 times more expensive than Alternative #6, Chevron is almost forcing Ecology to accept Alternative 6 as the preferred option, even though it is less permanent, less protective, and less effective in the long term.

7. Tribal interests and rights need to be considered.

Ecology states that they have notified tribes of the opportunity to comment but according to the amended MTCA rules, which is not sufficient. The updates require Ecology to *consider the rights and interests* of Indian tribes when evaluating cleanup action alternatives in the feasibility study and in the cost analysis. There is *no mention of these* in the current feasibility study. The Unocal property was used traditionally by the Tulalip tribes as a "usual and accustomed" gathering and fishing place. Tribal concerns about depleted salmon populations are well known. Tribal interest in reconnecting the Edmonds Marsh to Puget Sound to aid salmon recovery has been affirmed by their letters of support for the city's MOU with WSDOT and for the current NOAA Coastal Resiliency grant. These interests and rights are long standing and should be included in Ecology's and Chevron's analyses. **WAC 173-340-620 (3) and (4)**

8. Updated soil samples are needed before the updated feasibility study is completed.

Most soil samples were collected during excavations in 2001, 2003, and 2008. Since the site contaminants have been subject to natural attenuation over the intervening years, there may be substantial changes to the number of areas that do not meet cleanup limits. This added information could have an impact on the ranking of the benefits of each proposed remedial action alternative and the cost of their implementation. If new remedial action alternatives *combining* engineered covers with excavation are considered, updated soil sampling will be particularly important. The disproportionate cost analysis will change based on how much of the site remains contaminated. The results of the additional soil sampling that is planned need to be incorporated into the Ecology's updated feasibility study.

Comment #154, Edmonds Marsh Estuary Advocates

Comment submitted by: Edmonds Marsh Estuary Advocates (EMEA)

Endorsed by: Sno-Isle Sierra Club, Interfaith Climate Action, Edmonds Climate Advisory Board

We appreciate the progress that Ecology and Chevron have made in cleaning up the Unocal site. However, the Draft Feasibility Study Addendum and the Disproportionate Cost Analysis (DCA) need to be amended to more fully comply with the Model Toxics Control Act (MTCA) and with Ecology guidance. Before a final cleanup plan is selected, we urge Ecology to thoroughly consider the following points.

1. Climate change and sea level rise are required to be included in the feasibility study but are not mentioned in the current documents.

WAC 173-340-360(3)(a) lists the following requirements for cleanup action plans:

(iv) Prevent or minimize present and future releases and migration of hazardous substances in the environment;

(v) Provide resilience to climate change impacts that have a high likelihood of occurring and severely compromising its long-term effectiveness;

(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

Climate change and sea level rise pose significant environmental risks that must be considered. Sea level rise will increase groundwater levels and flood waters will more frequently inundate the site. These factors may mobilize contamination and cause it to migrate toward Willow Creek and Puget Sound through groundwater.

Sea level rise, stormwater flooding, and waves washing over the railroad tracks will also increase risks of erosion. Then the likelihood that the long-term effectiveness of the engineered covers will be compromised, especially in the southwest corner of the site where flood flows pass under the BNSF railroad bridge before returning to Puget Sound.

The Unocal property's location in a seismic hazard zone, which has a high likelihood of earthquake damage, further increases the potential risk to engineered covers.

2. A more accurate cost-benefit calculation is needed.

Currently, permanently removing all contamination through excavation (Alternative 4) is rated only 12.3% more beneficial than capping and covering it (Alternative 6). Ecology guidance has confirmed that the cost analysis needs to consider *both quantitative and qualitative estimates and the use of best professional judgment*. The extensive benefits of a cleanup level that enables estuary restoration, wetland expansion, and salmon resource recovery should be included in the analysis of benefits. (Concise Explanatory Statement: Chapter 173-340 WAC (pages 119-120))

Cost should be a *ratio* to other factors, not the primary determining factor. The current DCA comparison overemphasizes cost and undervalues permanence, protectiveness, and long-term effectiveness. When considering future land and resource uses, Alternative 6 is not protective, permanent, or effective in the long term. The benefit scores for Alternative 6 should be adjusted to reflect this.

3. Public Concern has not been properly weighted.

Chevron lists noise, traffic, short- and long-term risks, and time frame as the most common community concerns. They assert that complete excavation, Alternative 4, will be most disruptive to the public. This is an inaccurate assessment of the public's concern about Unocal cleanup. Of the approximately one hundred people who attended Ecology's September 2024 public meeting, no one mentioned those concerns. Instead, the primary concern expressed was that cleanup be sufficient to make reconnecting the Edmonds Marsh to Puget Sound feasible.

4. Potential future use of the property as a restored estuary reconnecting the Edmonds Marsh to Puget Sound should be considered.

Future use: The MTCA WACs do not specify that planned or future uses are limited to the current landowner. **WAC 173-340-351(6)(a)** states: *Include any planned future uses of the site or any habitat restoration or resource recovery goals for the site.*

The potential use of the Unocal site for estuary reconnection, habitat restoration, and salmon resource recovery is well documented. A Memorandum of Understanding (MOU) between WSDOT and the City of Edmonds and a state legislative budget line item give the City of Edmonds the first right of purchase for the intended use of the property to rehabilitate near-shore habitat for salmon and related species. (MOU 2.8)

Additional documents confirming the city's intent:

- Edmonds City Council Resolution 1508
- The City of Edmonds 2022-2027 Parks Recreation and Open Space (PROS) Plan (page 116)
- The City of Edmonds Parks Department 2024-2029 Capital Facilities and Capital Investment Plan (page 30)

5. Tribal interests and rights need to be considered.

Ecology states that they have *notified* tribes of the opportunity to comment but according to the amended MTCA rules, that is insufficient. The updates require Ecology to *consider the rights and interests* of Indian tribes when evaluating cleanup action alternatives in the feasibility study and in the cost analysis, yet there is no mention of these in the current documents.

The Unocal property was used traditionally by the Tulalip Tribes as a "usual and accustomed" gathering and fishing place. Tribal concerns about depleted salmon populations and their interest in reconnecting the Edmonds Marsh to Puget Sound to aid in salmon recovery are well known. Their letters of support for the city's MOU with WSDOT and

for the city's current NOAA Coastal Resiliency grant confirm that tribal interests are long standing and should be included in Ecology's and Chevron's analyses.

The Boldt decision and the resulting 2013 federal fish passage injunction confirmed that Washington State has a *treaty-based duty* to preserve fish runs. This requires that blockages that impede salmon migration be repaired or removed. This court order will apply to the equitable title holder, WSDOT. Replacement of the impassable Willow Creek pipeline will require the excavation of an open channel through the Unocal parcel.

6. Chevron Corporation made the mess — they need to clean it up.

Unocal (Chevron) reaped significant financial gain from their use of the property as a bulk fuel terminal. The public, the City of Edmonds, and the Tulalip Tribes are not asking Chevron to restore the wetland or reconnect the marsh estuary to Puget Sound but simply to clean up the property to a level that will enable a future landowner to do so without incurring additional cleanup costs. Alternative 6 is unacceptable because it leaves contamination in place that would need to be removed before a channel to Puget Sound could be excavated.

7. Alternative cleanup plans between complete excavation (Alternative 4) and no excavation (Alternative 6) should be considered.

Chevron estimates the cost of removing all remaining contamination (Alternative 4) to be 10 times more expensive than the cost of capping and covering the contamination (Alternative 6). This sets up Ecology to accept Alternative 6 as the preferred option even though it is less permanent, less protective, and less effective in the long term.

Chevron's alternatives were to completely remove all contamination or cap and cover it — nothing in between. Complete removal was not selected due to the prohibitive cost. An alternative that is a *combination of the two* is reasonable and should be considered. It would also better address future land use, public and tribal concerns, and the environmental hazards of the site at a cost much closer to Alternative 6.

8. Soil samples must be updated before the revised feasibility study is completed.

Most of the soil samples referred to in the feasibility study are 15-20 years old. New soil testing is planned, and selection of a final cleanup plan should be delayed until these results can be considered. Natural attenuation over the intervening years may result in fewer contaminated areas. This would impact the cost of each alternative and would be particularly important in evaluating alternatives that combine excavation and engineered covers.

Respectfully submitted by:

Kathleen Sears, for Edmonds Marsh Estuary Advocates

Nancy Johnson, Cynthia Jones, Bill Trueit, and Malcolm Cummings, for Sno-Isle Sierra Club

Gayla Shoemake, for Interfaith Climate Action

Georgina Armstrong, for the Edmonds Climate Advisory Board

Comment #162, Neil Gilham

Neil Gilham - Comments on Unocal Edmonds Bulk Fuel Terminal 0178 (second comment)

With the understanding that the comment period has expired, I wanted to add one more comment (my second) for consideration. I want to echo the comment submitted by Alan Mearns on November 24, 2024. Alan's comment was regarding a cleanup action alternative that was not considered or performed in any of the previous cleanup actions conducted at the Unocal site and was not presented as an alternative in the recent Public Review Draft Final Feasibility Study Addendum (FS) prepared by Arcadis.

I recommend that Chevron and their consultant Arcadis consider as a cleanup action alternative the use of onsite biotreatment of the petroleum-contaminated soils. The site has adequate space for constructing treatment cells and there is sufficient time when considered with the approximate 5-year timeframe presented in Alternative 6. There are no if this-then that contingencies as in Alternative 6. I know that Arcadis and Ecology are familiar with this approach, so I don't need to go into detail about how to do it. It has been done and I know of at least one site where it was done successfully (<https://apps.ecology.wa.gov/cleanupsearch/site/10915#site-documents>). I was involved with this project, coming in several years after the onsite biotreatment was completed.

I've been an environmental consultant for over 35 years (retired, mostly). I understand the mindset among consultants (me included) that "dig and dump" is a simple and effective approach in most cases where time and space are not available. Or the ease of putting in place an environmental covenant (and walking away?). It would be great to break out of that mold and look at the feasibility of biotreatment onsite. Whether some or all the contaminated soil is removed from the 22 identified PCS areas, the excavations could be left open, some or all could be connected to the inflow/outflow of an estuary system. The treated soil could be left in place on or near the treatment area or distributed in other places onsite as needed.

The use of onsite bioremediation at the Lower Yard could be a showcase of what can be done in an environmentally conscious way.

Thank you for the opportunity to comment (again) on the Unocal Site FS.

Sincerely,

Neil R. Gilham, LG