DEPARTMENT OF ECOLOGY
State of Washington

Response to Comments

Engineering Design Report
Cornwall Avenue Landfill
Bellingham, WA

Facility Site ID: 2913
Cleanup Site ID: 220

August 2018

Publication 18-09-171

Publication and Contact Information

This document is available on the Department of Ecology's Cornwall Avenue Landfill website at: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=220

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Response to Comments

Engineering Design Report

Cornwall Avenue Landfill
Bellingham, WA

Facility Site ID: 2913
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Toxics Cleanup Program

Northwest Region

Washington State Department of Ecology

Bellevue, Washington

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Public Outreach

On December 18, 2017 a draft Engineering Design Report for the Cornwall Avenue Landfill cleanup site on the Bellingham waterfront was issued for a 45-day public comment period. Ecology received requests for more information and scheduled a public meeting on February 15, 2018 and extended the comment period through February 22, 2018.

Our public involvement activities related to this public comment period included:

- **Fact Sheet:** US mail distribution of a Fact Sheet providing information about the draft Engineering Design Report and public comment period to approximately 3,100 people including neighboring businesses and other interested parties. Email distribution of the Fact Sheet to approximately 250 people, including interested individuals, local/county/state/federal agencies, and interested community groups.
- **First Legal Notice:** Publication of one paid legal ad in *The Bellingham Herald*, dated December 18, 2017.
- **Second Legal Notice:** Publication of one paid legal ad in *The Bellingham Herald*, dated January 31, 2018.
- **Site Register:** Publication of a notice in the Washington State Site Register, on December 7 & 21, 2017; January 4 & 18, 2018; and February 2 & 15, 2018. Visit the site register website here: https://fortress.wa.gov/ecy/publications/UIPages/PublicationList.aspx?IndexTypeName=Program&NameValue=Toxics+Cleanup&DocumentTypeName=Newsletter
- **Website**: Announcement of the public comment period (and extension), public meeting, and posting of the documents on the Department of Ecology website: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=220
- **Document Repositories:** Provided copies of the documents for public review through three information repositories: Ecology's Bellingham Field Office and Northwest Regional Office in Bellevue and the Bellingham Public Library Central Branch.
- **Postcard Mailer:** Due to requests for more information and a public meeting, Ecology scheduled a public meeting, extended the public comment period, and distributed a post card mailer updating approximately 3,100 people of this new public involvement information.
- **Public Meeting:** Hosted an informational public meeting at Ecology's Bellingham Ecology Office on February 15, 2018 from 6-8 p.m.

Comment Summary

Ecology received comments from 26 individuals and organizations during the comment period.

Table 1: List of Commenters

	First Name	Last Name	Submitted By
1	Elizabeth	Hines	Individual
2	Max	Schneider	Individual
3	Seth	Owens	Individual
4	Seth	Owens	Individual
5	Frances	White	Individual
6	Liz	Marshall	Individual
7	Rebecca	Brown	Individual
8	Raymond	Ballweg	Individual
9	Geoffrey	Middaugh	Individual
10	Jean	Waight	Individual
11	Beth	DeWitt	Individual
12	Julia	Sutton	Individual
13	Helga	Aldrich	Individual
14	Pam	Borso	Individual
15	Susan	Tommervik	Individual
16	Robert	Simmons	Individual
17	Tony	Gallina	Individual
18	David	Helm	Individual
19	Suzy	Tonini	Individual
20	Marian	Beddill	Individual
21	Monte	Hokanson	Individual
22	Jean	Hamilton	Individual
23	Terry	Montonye	Individual
24	Judith	Akins	Individual
25	Liz	Marshall	Individual
26	Eleanor	Hines	Organization: RE Sources

Next Steps

Ecology has reviewed and considered all comments received on the Engineering Design Report. Comments are presented below with Ecology's response. No changes were made to the draft documents, and they have been finalized.

Cleanup Timeline:

- 2018-2020: Prepare construction plans and specifications
- 2020/2021: Begin construction

Comments and Responses

Below are Ecology's responses to comments. The original comments received are found in Appendix A beginning on page 27.

Note that the Cornwall Avenue Landfill site is also referred to as "the Site."

Comment from: Elizabeth Hines

Regarding the Cornwall Avenue Landfill Cleanup Site, my comments are as follows: I live in close proximity to this toxic dump area. I have a family, children, grandchildren and neighbors who all agree with me. We were told by the Port of Bellingham that this toxic sludge and waste: metals, ammonia, petroleum compounds, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, among other poisons, would be "TEMPORARILY" placed in the south Cornwall Avenue site to hold until being removed, & transported and relocated to one of several toxic clean up sites, more likely the one in Oregon. [...]

Response

We assume the "sludge and waste" being referred to is the low-permeability fill material contained beneath the white plastic cover. If so, this material is natural bay sediment from the Squalicum Harbor Marina that was amended with 5% cement for strength and handling purposes. The material contains typical urban contaminants, including the compounds you mentioned (except PCBs) and dioxins/furans. Most of these compounds are ubiquitous in the environment, due to both natural processes and human activities, and are present in the material at levels close to urban background soil concentrations. Because the material is slightly contaminated, direct contact with park users needs to be prevented. Therefore, the cleanup action calls for placing the material under a low permeability geomembrane and at least two feet of clean soil.

With regard to the Port of Bellingham (Port) stating that the material was to be temporarily stored at the Cornwall Site prior to disposal, we were not aware of this statement and it is not accurate.

In 2011, the Port placed this material at the Site, with Ecology supervision, as part of an interim action to reduce rainwater infiltration and for potential use as part of the final cleanup action for the Site. In 2013 Ecology issued a draft remedial investigation /feasibility (RI/FS) that incorporated the interim action into a preferred cleanup action for the Site. In 2014, based on the information in the RI/FS, Ecology selected the final cleanup action for the Site which included use of this material as a low-permeability layer within the landfill capping system. The interim action, the RI/FS, and Ecology's selection of the final cleanup action were all subject to public review and comment.

[...]*And now this report of capping the toxic waste site to isolate contamination and control landfill gas. UNBELIEVABLE!!!! And you are actually thinking of putting a park for children to play on on top of!!!!!!! No way! This toxic waste needs to be removed, relocated and cleaned & stored in a proper toxic waste collection site!!!!* [...]

Response
Ecology acknowledges your strong preference for removing the low-permeability fill material, rather than retaining it as part of the cover system. However its low permeability and urban background level of contamination make it useful as part of the compacted-soil barrier layer within the planned multi-layer landfill cover (cap). Specifically it will help to prevent rainfall from infiltrating into the underlying waste fill and leaching contaminants into groundwater.

With respect to children and other park users, the design of the upland cap calls for four separate layers constructed above this layer to isolate the low-permeability fill material from children and other park users. From top to bottom these layers include: Topsoil or pavement, cover soil, a geotextile drainage layer, and a low permeability geomembrane. Beneath the low-permeability fill layer will be a separate gas collection layer that will gather and vent landfill gas in a manner protective of human health. The integrity of all of the layers in the capping system will be maintained essentially in perpetuity through an established operations and maintenance plan and 5-year periodic reviews by Ecology.

[...] *This area, as is, is harmful to people, animals & the environment including the Bellingham Bay just feet away [...]*

Response
Ecology agrees that existing contamination in the area is potentially harmful to people, animals and the environment. Our primary authority and responsibility under state law, the Model Toxics Control Act (MTCA), is to implement cleanups that protect human health and the environment. As such, the cleanup plan developed for the site will protect people, animals, and the environment.

[...] *I am requesting a public hearing about the report, and I plan to be there. Please publicize it well.* [...]

Response
Based on receipt of more than ten requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *The property owners pay dear taxes, and we are helping to pay for the clean up of this mess left by RG Haley, and Georgia-Pacific. Please DO IT RIGHT!!!!!! Elizabeth Hines*

Response
The main contaminants at the Cornwall Avenue Landfill site are from historic municipal refuse disposal activities by the City of Bellingham. RG Haley and Georgia-Pacific were not party to these activities.

We assume that "do it right" indicates your strong preference for removing all of the contaminated fill at the Site. While we understand your preference, Ecology must operate within the scope of its authority for choosing a cleanup action, as defined by the MTCA regulations.

In 2013, Ecology issued a draft remedial investigation/feasibility study for public review (See: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=220). That document contained an evaluation of four cleanup alternatives, including a full removal option. The MTCA required evaluation compared costs and environmental benefits to determine the alternative that is "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b) and WAC 173-340-360(3). For the Cornwall Avenue Landfill site, this evaluation showed a containment alternative (Alternative 2 in the RI/FS) to be permanent to the maximum extent practicable and the preferred cleanup alternative for the site (Section 9.7 of the 2013 RI/FS).

In 2014, using the information in the RI/FS, Ecology issued a draft cleanup action plan for public review. The plan described our selected cleanup action for the Site – the preferred alternative identified in the RI/FS.

Most landfill cleanups/closures in Washington state, have used containment to prevent exposure to potentially harmful levels of contamination, thereby protecting human health and the environment. It has proven itself to be reliable and effective over the long term.

Comment from: Max Schneider

I'm not an ecological or environmental expert, but it's great to see people working on restoring the wonderful Bay area around Bellingham. Seems to me that such prime real estate should have all the fancy buildings and great historical developments, but it just seems kind of neglected. So good for you all and keep up the great work!

Response
Thank you. We appreciate your time, and welcome your participation in the cleanup process.

Comment from: Seth Owens

Concerning the waste stock-piled at the south cornwall site. as it is contaminated soil from previous commercial ventures it would stand to reason the soil be removed to a site that is away from the bay and human development. [...]

Response
We assume the waste stockpile being referred to is the low-permeability fill material contained beneath the white plastic cover. If so, this material is natural bay sediment from the Squalicum Harbor Marina that was amended with 5% cement for strength and handling purposes. The material contains typical urban contaminants. Most of these compounds are ubiquitous in the environment, due to both natural processes and human activities, and are present in the material at levels close to urban background soil concentrations. Because the material is slightly contaminated, direct contact with park users needs to be prevented. Therefore, the cleanup action calls for placing the material under a low –permeability geomembrane layer and at least two feet of clean soil.

Ecology acknowledges your strong preference for removing the low-permeability fill material, rather than retaining it as part of the cover system. However its low permeability and urban background level of contamination make it useful as part of the planned multi-layer landfill cover (cap). Specifically it will help to prevent rainfall from infiltrating into the underlying waste fill and leaching contaminants into groundwater.

The design of the upland cap calls for four separate layers to isolate the low-permeability fill material from future park users. From top to bottom these layers include: Topsoil or pavement, cover soil, a geotextile drainage layer, and a low permeability geomembrane. Beneath the low-permeability fill layer will be a separate gas collection layer that will gather and vent landfill gas in a manner protective of human health. The integrity of all of the layers in the capping system will be maintained essentially in perpetuity through an established operations and maintenance plan and 5-year periodic reviews by Ecology.

[...] *The cost should be assessed to the current owners of the site and commercial ventures that profited from the activities that caused the contamination in the first place.* [...]

Response
Under Washington state law (MTCA), Ecology has determined that the Port of Bellingham (Port), the City of Bellingham (City), and the Washington State Department of Natural Resources (DNR) are potentially liable parties (PLPs) for addressing contamination at the site. These entities either disposed of municipal refuse or allowed municipal refuse to be disposed of, at the site. Specifically, the City operated a municipal dump at the site under a lease with the Port, which in turn was operating under a lease with DNR. As far as the woodwaste portion of the site is concerned, it was likely created by the various now-defunct lumber mills that operated at the property.

As PLPs, these entities entered a legal agreement with Ecology in 2014 to implement (and therefore pay for), Ecology's selected cleanup action for the site.

[...] *As this site is waterfront, the soil there is the filter for run-off to the bay and thus this clean-up would be a first step to attempt to mitigate future contamination. Hopefully the ultimate goal is to make our environment safe for the many flora and fauna of the area.* [...]

Response
Almost all of the "soil" above bedrock at this site is contaminated fill of one kind or another. Consequently it can't be used as a filter for runoff (we assume this means stormwater runoff). In fact, stormwater runoff must be prevented from infiltrating into the soil because when it does, contaminants are leached out and enter groundwater, which then discharges into Bellingham Bay. As a result, the cleanup includes a multi-layer cover system that will be constructed and maintained over the contaminated materials using clean soil and geosynthetic materials, such that future run-off from the site only comes into contact with these uncontaminated materials prior to entering the Bay.

[...] *This site will be a beautiful legacy for future generations and should be a source of pride for all those involved and the city of bellingham as a whole.* [...]

Response
Ecology shares your sentiment.

[...] *As a tax payer for many years in bellingham I feel that the costs associated with removal should be re-visited as a local dumping location might be possible that would satisfy the goal of clean-up of the site , rather than a "cap" that seems to me to be an inadequate solution.*

Response
While we understand your desire to re-consider the Site cleanup action, Ecology has operated within the scope of its authority for choosing a cleanup action, as defined by the MTCA regulations.

In 2013, Ecology issued a draft remedial investigation/feasibility study for public review (See: https://fortress.wa.gov/ecy/gsp/Sitepage.aspx?csid=220). That document contained an evaluation of four cleanup alternatives, including a full removal and off-Site disposal option. The MTCA-required evaluation compared costs and environmental benefits to determine the alternative that is "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b) and WAC 173-340-360(3). For the Cornwall Avenue Landfill site, this evaluation showed a containment alternative (Alternative 2 in the RI/FS) to be permanent to the maximum extent practicable and the preferred cleanup alternative for the site (Section 9.7 of the 2013 RI/FS).

Essentially the analysis showed that full removal costs were disproportionate to the benefits using an existing permitted disposal facility. To create a new disposal facility would be even more expensive, so the outcome of the analysis would not change.

In 2014, using the information in the RI/FS, Ecology issued a draft cleanup action plan for public review. The plan described our selected cleanup action for the Site – the preferred alternative identified in the RI/FS.

Comment from: Seth Owens

I request you set a public hearing for a question/answer discussion on the Cornwall Avenue Landfill Clean-up Site matter. Sincerely, Seth Owens

Response
Based on receipt of more than ten requests for a public meeting. Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Frances White

This refuse needs to be taken off site and properly cleaned and disposed of as the initial cleanup project was intended. [...]

Response
Ecology acknowledges your preference for removing the refuse, but we must operate within the scope of our authority for choosing a cleanup action, as defined by the MTCA regulations. One requirement of MTCA is that the selected cleanup action be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, a disproportionate cost analysis (DCA) is used. WAC 173-340-360(3). For the Site, the DCA (Section 9.7 of the 2013 RI/FS) found containment Alternative 2 to be permanent to the maximum extent practicable.

Containment of hazardous materials is authorized under MTCA, and has been determined to be effective given the circumstances at this Site. *See* WAC 173-340-740(6)(f). Containment has been used to protect human health and the environment at most landfill cleanups/closures in Washington State, and has proven itself to be reliable and effective over the long term.

[...] *A "capped" cover up is in no way ok or safe for this area. Let's learn from our past mistakes and do the job right the first time. This is a beautiful piece of land that needs to be taken care of for our residents to have a healthy environment. This is what we as residents are paying for and deserve.*

Response
The design of the upland cap calls for four separate layers to isolate the low-permeability fill material and refuse and wood waste from future park users. From top to bottom these layers include: Topsoil or pavement, cover soil, a geotextile drainage layer, and a low permeability geomembrane. Beneath these layers is a low-permeability fill layer and a separate gas collection layer that will gather and vent landfill gas in a manner protective of human health. The integrity of all of the layers in the capping system will be maintained essentially in perpetuity through an established operations and maintenance plan and 5-year periodic reviews by Ecology.

Comment from: Liz Marshall

At least one public hearing should be held. This is such a critical topic that several opportunities for current public input should be created.

Response
Based on receipt of more than ten requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Rebecca Brown

Please hold a public hearing on this important project.

Response
Based on receipt of more than ten requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Raymond Ballweg

Please hold a public meeting to review the consequences of not removing the toxic materials at the site. [...]

Response
Based on receipt of more than ten requests for a public meeting. Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We

hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] What is most distressing is not addressing the pollution in Bellingham Bay away from the site until some "future" date. Who are you kidding that something will be done after the park is built when no one can see the pollution under the water. A couple of years ago the City of Bellingham had to mitigate garbage seeping into the bay from the site. Over time it will just reoccur and officials will probably say that they had no idea.

Response
We understand your concern about the apparent delay in cleaning up the MU-3 area, and the implication that environmental harm will continue unabated. In truth, contaminant levels in MU-3 are decreasing. Clean sediment from the Nooksack River naturally deposits over the top of the contaminated sediment, creating clean habitat for aquatic organisms. The rate of deposition in Bellingham Bay is about 1.6 cm per year, and sediment dwelling aquatic organisms live in the top 12 cm.

Moreover, this sedimentation process was selected as the preferred cleanup method for MU-3 in the 2013 Feasibility Study for the Site. Since MU-3 is part of the Cornwall site, it will be addressed under the state cleanup law, the Model Toxics Control Act, through an amendment to the current legal agreement between Ecology, and the Port, City and Department of Natural Resources. The future amendment will require sediment monitoring to confirm this sedimentation process is occurring. If not, additional cleanup measures may be required.

With regard to the garbage seep, you may be referencing a 2013 action conducted at the adjacent RG Haley site to address an oil seep. The City, with Ecology oversight, placed a 6-inch layer of sand with specially treated clay over a 5,000-square-foot area of the shoreline to absorb oil seeping out. The oil is from former wood treatment operations at the RG Haley site.

This work only addressed a small area of the RG Haley site. Cleanup of the entire RG Haley site is slated to occur in 2019/2020.

Comment from: Geoffrey Middaugh

I urge DOE to hold a public hearing on this plan, so the public can see the complexity of the site. I was on the COB Parks and Recreation team working on the plan for the park after the remediation. I will further review the documents provided [...]

Response
Based on receipt of more than ten requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *My concerns relate to the surface flow of water at the site from the neareby hillsides, and the railroad.* [...]

Response
Surface water runoff and shallow groundwater movement down the hillside adjoining the Site is captured and drained, in part, by the ditch extending along the railroad tracks. Improvements to the ditch, along with the installation of a multi-layer upland cap, are planned to reduce or eliminate groundwater recharge at the Site (see Section 5.3 of the Cleanup Action Plan.) Because the majority of groundwater recharge is from infiltrating rainwater, the railroad drainage improvements will not be implemented immediately, but held back as a contingency.

[...] *I am also concerned about the vegetative recovery plan for the site.* [...]

Response
Ecology's primary authority and responsibility under the Model Toxics Control Act (MTCA) is to implement cleanups that protect human health and the environment. While that authority does not extend to habitat restoration, Ecology does consider the habitat benefits of cleanup actions as much as possible.

In addition, habitat enhancement/restoration may be required as a result of the construction permitting process, when state, federal, and tribal agencies responsible for fish and wildlife management conduct detailed reviews of the project. And, the site area is designated for future use as a public park. Conceptual park plans include enhanced/restored habitat. See https://www.cob.org/gov/projects/Completed/Parks/Cornwall%20Beach%20Park%20Master%20Plan.pdf. The cleanup work and park development work may occur at the same time.

[...] *I am also concerned about the full remediation of the organic materials (sawdust) off shore.* [...]

Response
The cleanup plan for in-water portions of the Site involves placing clean sand or other natural materials directly over contaminated sediment, or allowing a layer of clean material to build up over the contaminated sediment via natural sedimentation. Most of the contaminated sediment at this Site has been designated as such because it contains chemicals at potentially harmful concentrations. However, the term contaminated sediment also refers to areas with excessive sawdust or other wood waste (wood debris).

The 2014 Cleanup Action Plan for this Site established a number of physical criteria for wood debris in sediment deemed protective of benthic organisms. The criteria required: (1) No less than 1 foot of clean sediment over sediment with more than 50%

wood debris, or (2) Less than 50% wood debris in the upper foot of sediment, and (3) No detectable refuse.

The first criterion was checked through sediment bioassays completed in support of the EDR (See Section 4.7). Specifically, sediment samples were obtained from 5 locations where at least 1 foot of sediment had been deposited naturally over landfill refuse/woodwaste. The 5 samples passed the bioassay test. Additional testing for the other two criteria was not necessary because the MU-2 sediment cleanup area will ultimately have more than 1 foot of clean material over refuse/woodwaste.

[...] *Respectfully, please hold a public hearing on this complex project. Geoff Middaugh, South Hill*

Response
Please see previous response regarding the public meeting.

Comment from: Jean Waight

I would like there to be a hearing so the public can compare and discuss the current proposal against the years-ago extensive public input that was received on this and the rest of the enveloping waterfront redevelopment project, to see how well the two square . Thank you!

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Beth DeWitt

I'm interested in the current status of the Cornwall Landfill and would appreciate a public meeting in Bellingham to update community members on the progress of the project. [...]

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *I'm interested to know if the project is going as planned, if it's on-schedule, and if any special challenges have come up.* [...]

Response
It's a rarity to have a cleanup project go as planned and this project is no exception. Ecology has experienced multiple changes in project managers during the life of the

project and has had to manage against evolving science and policy. Regardless, we are nearing completion of the design, and permitting and construction will follow.

As far as any special challenges are concerned, one involved understanding the environmental impacts of municipal garbage dumped into open water over top of thick wood waste deposits. Another involved working on sites that overlap (Cornwall and RG Haley adjoin each other and overlap). A future challenge will likely be obtaining permit coverage from the US Corps of Engineers (Corps) for construction of the cleanup action.

[...] *What are the long-term, residual effects at this site?* [...]

Response
We assume this question refers to long-term risks to human health and the environment. If so, the cleanup action is intended to protect human health and the environment in perpetuity. Following completion of construction, the following actions will be taken to ensure the cleanup action remains protective over time:

- Post-construction monitoring. To verify that site cleanup levels established to protect human health and the environment are met.
- Property use restrictions. Prohibitions and restrictions will be placed on the property to ensure the long term integrity of the cleanup action.
- Periodic review. Ecology will review the cleanup action every five years to ensure continued protection of human health and the environment.

[...] *I think it's important that citizens are up-to-date on this project, especially in light of waterfront revitalization plans. I'm not familiar with the big-picture plans for this area, but I would hope it will be a public park with shoreline access, similar to the very popular Boulevard Park. thanks-*

Response
The city is planning to construct a public park covering both this Site and the adjoining RG Haley site. See https://www.cob.org/gov/projects/Completed/Parks/Cornwall%20Beach%20Park%20Master%20Plan.pdf.

Comment from: Julia Sutton

What happens to this site in severe conditions such as an earthquake or tsunami? [...]

Response
The effects of seismic shaking and tsunami run-up were considered in the EDR (see Sections 4.6.5 and 5.1.3).

A design earthquake event was chosen in accordance with the 2012 International Building Code as coming from the closest known fault and having a 2% probability of occurrence within 50 years (that is a recurrence interval of 2,475 years). The acceleration and displacement associated with the design earthquake event were then used to analyze the stability of the existing fill and the overlying cover in the event of an earthquake. The slope stability analysis indicated minimal displacement and factors of safety generally greater than the 1.3 value recommended by EPA. One area had a lower factor of safety (1.1), but the predicted deformation was only 1 inch. The stability of the landfill was therefore considerable acceptable under seismic loading.

For tsunami events, a 1.8-foot estimate of inundation above mean higher high water was provided by the Washington State Department of Natural Resources, Division of Geology and Earth Resources. The shoreline protection system will top out at a minimum of 2.4 feet above mean higher water, indicating that a tsunamis would be unlikely to inundate the Site. However, some damage would likely occur to the shoreline protection system and would need to be repaired. This issue will be addressed in the contingency planning portion of the Monitoring, Maintenance, and Operations Plan to be prepared for future care of the Site.

[...] *While I do agree that something must be done, it would be best to hold a public hearing to address local concerns*.

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Helga Aldrich

I am requesting a public hearing on the Cornwall landfill clean up. [...]

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *To just cover the toxic materials with a thin layer of soil and some plastic does not seem sufficient in my view to protect our precious waters from potential contamination.*

Response
The design of the upland cap calls for four separate layers to isolate contaminated fill materials from future park users. From top to bottom these layers include: Topsoil or pavement, cover soil, a geotextile drainage layer, and a low permeability geomembrane. Underneath these are a low-permeability fill layer and a gas collection layer that will gather and vent landfill gas in a manner protective of human health. The integrity of all of the layers in the capping system will be maintained essentially in perpetuity through an established operations and maintenance plan and 5-year periodic reviews by Ecology.

The upland cap has also been designed to prevent surface water (rainfall) from entering into the waste materials and leaching contaminants.

Comment from: Pam Borso

Please hold a public hearing on this important matter

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Susan Tommervik

I am concerned that these highly toxic substances could end up in the Bay due to natural disasters such as earthquakes or landslides, or even by train derailments. [...]

Response
The effects of seismic shaking were considered in the EDR (see Sections 4.6.5 and 5.1.3). A design earthquake event was chosen in accordance with the 2012 International Building Code as coming from the closest known fault and having a 2% probability of occurrence within 50 years (that is a recurrence interval of 2,475 years). The acceleration and displacement associated with the design earthquake event were then used to analyze the stability of the existing fill and the overlying cover in the event of an earthquake. The slope stability analysis indicated minimal displacement and factors of safety generally greater than the 1.3 value recommended by EPA. One area had a lower factor of safety (1.1), but the predicted deformation was only 1 inch. The stability of the landfill was therefore considerable acceptable under seismic loads.

Other disasters could occur as you point out, including train derailments. Fortunately the components used in the landfill cap and shoreline protection system will be highly durable and made of largely earthen material. As such they should be resistant to most kinds of surface disturbances. However, over time and perhaps during some future event, damage could occur. In these cases, repairs will be necessary. This topic will be

addressed directly in the contingency response planning section of the Monitoring, Maintenance, and Operations Plan to be prepared later as part of final design and construction.

[...] *I think they should be transported elsewhere, with less possibility of toxic pollutants ending up in our waterway, harming our marine ecosystem and industries.* [...]

Response
Ecology acknowledges your preference for removing the contaminated fill and moving it elsewhere. However, we must operate within the scope of our authority for choosing a cleanup action, as defined by the MTCA regulations. Choosing a cleanup action involves comparing different alternatives in terms of cost and environmental benefit. This analysis takes place in a Feasibility Study (FS), which was completed for this Site in 2013. In the FS, one of the alternatives included complete removal of the refuse.

In comparing alternatives, MTCA requires that the cleanup action ultimately selected be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, a disproportionate cost analysis (DCA) is used. WAC 173-340-360(3). For the Cornwall site, the DCA showed containment Alternative 2 to be permanent to the maximum extent practicable (Section 9.7 of the 2013 RI/FS).

Containment of hazardous materials is authorized under MTCA, and should be effective at this Site. *See* WAC 173-340-740(6)(f). Containment has been used to protect human health and the environment at most landfill cleanups/closures in Washington state, and has proven itself to be reliable and effective over the long term.

[...] *Please hold a public hearing on these plans. Thank you.*

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: Robert Simmons

Please schedule a public hearing on the proposed cleanup process at the Cornwall Avenue Landfill Cleanup site. [...]

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *Nothing the Dept. of Ecology has proposed publicly offers assurance that the site can ever be made safe for public activities. This area, as is, is harmful to people, animals & the environment including the Bellingham Bay just feet away*

Response
Ecology agrees that existing contamination in the area is potentially harmful to people, animals and the environment. Our primary authority and responsibility under state law, the Model Toxics Control Act (MTCA), is to implement cleanups that protect human health and the environment. As such, the cleanup plan developed for the site will protect people, animals, and the environment.

The design of the upland cap calls for four separate layers to isolate contaminated fill materials from future park users. From top to bottom these layers include: Topsoil or pavement, cover soil, a geotextile drainage layer, and a low permeability geomembrane. Underneath these are a low-permeability fill layer and a gas collection layer that will gather and vent landfill gas in a manner protective of human health. The integrity of all of the layers in the capping system will be maintained essentially in perpetuity through an established operations and maintenance plan and 5-year periodic reviews by Ecology.

Comment from: Tony Gallina

I would like to have a hearing

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

Comment from: David Helm

Before any decision is made regarding this toxic waste a public hearing needs to be held; and heeded. [...]

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *There have been way to many clean up decisions based on the cheapest, least effective methods.*

Response
Ecology acknowledges your concerns about using cost as a basis for cleanup decisions. However, we must operate within the scope of our authority for choosing a cleanup action, as defined by the MTCA regulations. Choosing a cleanup action involves comparing different alternatives in terms of cost and environmental benefit. This analysis takes place in a Feasibility Study (FS), which was completed for this Site in 2013.

In comparing alternatives, MTCA requires that the cleanup action ultimately selected be "permanent to the maximum extent practicable" WAC 173-340-360(2)(a)-(b). To make this determination, a disproportionate cost analysis (DCA) is used. WAC 173-340-360(3). For the Cornwall site, the DCA showed containment Alternative 2 to be permanent to the maximum extent practicable (Section 9.7 of the 2013 RI/FS).

Comment from: Suzy Tonini

I 200% would like to see a Public Hearing around the Cornwall Avenue Landfill Cleanup Site - Engineering Design Report. [...]

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *Like many of my fellow concerned citizens, and especially Mariann Beddill stated:"That landfill - the Cornwall Avenue Landfill cleanup site on the shoreline - is a serious thing because it is on the shoreline. Even a modest earthquake can move the dangerous contents back into the open waters of the Salish Sea.* [...]

Response
Ecology is also concerned about the potential effects of earthquakes on the stability of the fill comprising this Site. As a result, the effects of seismic shaking were analyzed in the EDR (see Sections 4.6.5 and 5.1.3). First, a design earthquake event was chosen in accordance with the 2012 International Building Code as coming from the closest known fault and having a 2% probability of occurrence within 50 years (that is a recurrence interval of 2,475 years). The acceleration and displacement associated with the design earthquake event were then used to analyze the stability of the existing fill and the overlying cover in the event of an earthquake. The slope stability analysis indicated minimal displacement and factors of safety generally greater than the 1.3 value recommended by EPA. One area had a lower factor of safety (1.1), but the predicted deformation was only 1 inch. The stability of the landfill was therefore considerable acceptable under potential seismic loading.

[...] *I request a public hearing to address the severity of such a shift of those soils, where the most dangerous materials should be moved to, and how to do the transport of them. So I echo these concerns and would like to see a public hearing around this. Thank you, Suzy Tonini* " [...]

Response
Please see the previous response regarding the public meeting.

With regard to re-locating and moving the contaminated fill material, a cleanup method for this Site has already been selected by Ecology. In 2014, after public notice and opportunity to comment, we finalized a cleanup action plan for the site. That plan is now in the process of being implemented under a court order issued to the City, the Port, and DNR. The court order, known as a consent decree, requires these parties to isolate the contaminated fill materials in-place in accordance with a specified schedule.

Comment from: Marian Beddill

That landfill - the Cornwall Avenue Landfill cleanup site on the shoreline - is a serious thing because it is on the shoreline. Even a modest earthquake can move the dangerous contents back into the open waters of the Salish Sea. [...]

Response
Ecology is also concerned about the potential effects of earthquakes on the stability of the fill comprising this Site. As a result, the effects of seismic shaking were analyzed in the EDR (see Sections 4.6.5 and 5.1.3). First, a design earthquake event was chosen in accordance with the 2012 International Building Code as coming from the closest known fault and having a 2% probability of occurrence within 50 years (that is a recurrence interval of 2,475 years). The acceleration and displacement associated with the design earthquake event were then used to analyze the stability of the existing fill and the overlying cover in the event of an earthquake. The slope stability analysis indicated minimal displacement and factors of safety generally greater than the 1.3 value recommended by EPA. One area had a lower factor of safety (1.1), but the predicted deformation was only 1 inch. The stability of the landfill was therefore considerable acceptable under potential seismic loading.

[...] *I request a public hearing to address the likelihood and severity of such a shift of those soils*, [...]

Response
Based upon receipt of ten or more requests for a public meeting, Ecology held a public meeting on February 15, 2018 from 6 - 8 p.m. at our Bellingham Field Office. We hope you were able to attend and learn more about the design of the cleanup action for the Cornwall Avenue Landfill site.

[...] *where the most dangerous materials should be moved to, and how to best do the transport of those soils*.

Response
Ecology acknowledges your preference for re-locating the contaminated fill. However, a cleanup method for this Site has already been selected by Ecology and established in a 2014 Cleanup Action Plan. That cleanup is now in the process of being implemented under a court order issued to the City, the Port, and DNR. The court order, known as a Consent Decree, requires these parties to isolate the contaminated fill materials on site in accordance with a specified schedule.

Comment from: Monte Hokanson

Consider using biochar to detox the contaminated soil. The attached infographic "shows how soils are contaminated, how toxicity can be mitigated and most importantly how biochar can remediate toxic soils." http://fingerlakesbiochar.com/wp-content/uploads/2016/11/Biochar-Remediation-Mechanisms-v2.jpg

Response
Ecology acknowledges your suggestion for considering the biochar cleanup technology. However, a cleanup method for this Site has already been selected by Ecology and established in a 2014 Cleanup Action Plan. That cleanup is now in the process of being implemented under a court order issued to the City, the Port, and DNR. The court order, known as a Consent Decree, requires these parties to isolate the contaminated fill materials on site in accordance with a specified schedule.

Comment from: Jean Hamilton

As a member of the Cornwall Beach Neighborhood Advisory team and as president of the Sehome Neighborhood I am so pleased to see this project moving forward . A great deal of careful thought has gone into ameliorating the harm that former generations did, mostly out of ignorance, by dumping sawmill waste and the community's solid wastes along a vulnerable shoreline. If this project goes forward it will create a park that I predict will be at least as popular and well used as Boulevard Park. At last our children and grandchildren will be able to access the waterfront from Downtown. I could not be more pleased.

Response
Thank you. We appreciate your participation in the cleanup process at this site.

Comment from: Terry Montonye

Mark, Two thoughts: 1. Recreational power boat boatel & launch site at that location (beneath the bluff) subsequent to the work you have described and an increase in the slip rates to cover it? 2. How that section of Cornwall Beach might be used commercially if and when the Jones Act gets repealed? [...]

Response
Ecology's primary authority and responsibility under the Model Toxics Control Act (MTCA) is to implement cleanups that protect human health and the environment. That authority does not extend to land use planning or commercial development, except to require measures that protect the cleanup action and to prohibit activities that could damage the cleanup action. We recommend you contact the City of Bellingham with regard to your suggestions about future use of the Site.

[...] *Otherwise, very impressed!*

Response
Thank you. We appreciate your participation in the cleanup process at this site.

Comment from: Judith Akins

Thank you to Ecology and Port of Bellingham for sponsoring the public meeting on the Cornwall Landfill cleanup site. I have followed this through the beginning cleanup discussions. I realize that there is a balancing act between cost, disturbance of hazardous materials and an acceptable environmentally healthy site. While this plan probably meets all this criteria it is not perfect. I would like to have seen complete removal but realize that was not possible. I only hope that this project does not come back to require further remediation and have the cost far exceed what the top cleanup would have cost. I hope that future generations will not have to pay for our mistakes today.

Response
Ecology acknowledges your comment. As noted in the answers to other commenters, we must operate within the scope of our authority under the MTCA.

Comment from: Liz Marshall

I commend Ecology, the City, the Port, and WADNR for the cleanup. It seems like an engineering miracle to pull off remediation which is satisfactory for both people and the environment. Maybe the project has gone on since 1996 and is two years behind schedule but it is great to correct the contamination. [...]

Response
Thank you. We appreciate your participation in the cleanup process at this site.

[...] *My preference when this phase and park plans take off would be to emphasize construction, topographical features, and abundant native plants that are conducive to aquatic, avian and all creatures. Structure, designs and systems ideally would deter members of the public from harming the acreage both upland and marine. For just one example, people constantly throw rocks into the water for some odd reason - adults and children alike. Landscape rocks are probably bought for a pretty penny from river sources far away, perhaps even overseas. Throwing them into the Bay not only hurts or kills the creatures who are hit, but wastes taxpayers' money and sacrifices those landscapes where the rocks came from. I will be glad if the City's monitoring of shoreline habitat and species shows benefits to birds, fish and terrestrials after the cleanup. Maybe the City, Port, etc. have extermination tendencies with regard to geese, pigeons, gulls and others - I don't know for sure - but in my opinion it would be the correct action to enhance shoreline habitat and respect/protect non-human as well as human animals. Thank you for your science and good works.*

Response

Ecology's primary authority and responsibility under MTCA is to implement cleanups that protect human health and the environment. That authority does not extend to land use planning or setting rules for public use of parks, except to require measures that protect the cleanup action and to prohibit activities that could damage the cleanup action. However, some habitat enhancement may ultimately become part of the cleanup as a result of Bellingham's park planning process, and through the construction permitting process, when agencies and groups responsible for fish and wildlife management conduct their detailed reviews of the proposed cleanup. These agencies may also require some of the rules you suggest for park users.

Comment from: RE Sources

February 22, 2018 RE: Cornwall Avenue Landfill Cleanup Site - Engineering Design Report Dear Mark Adams, Thank you for taking the time to consider our comment on the Cornwall Avenue Landfill Cleanup Site Engineering Design Report managed by the Washington Department of Ecology. RE Sources for Sustainable Communities is a local organization in northwest Washington, founded in 1982. RE Sources works to build sustainable communities and protect the health of northwest Washington's people and ecosystems through the application of science, education, advocacy, and action. Our North Sound Baykeeper program is dedicated to protecting and enhancing the marine and nearshore habitats of northern Puget Sound and the Georgia Strait. Our chief focus is on preventing pollution from entering the North Sound and Strait, while helping our local citizenry better understand the complex connections between prosperity, society, environmental health, and individual wellbeing. Our North Sound Baykeeper is the 43rd member of the Waterkeeper Alliance, with over 300 organizations in 34 countries around the world that promote fishable, swimmable, drinkable water. RE Sources has over 20,000 members in Whatcom, Skagit, and San Juan counties, and we submit these comments on their behalf. We appreciate the time and effort taken to put the Engineering Design Report out to public comment. Overall the Engineering Design Report addresses our concerns for human and ecological health; however, we have a few concerns that we would like considered, outlined below. [...]

Response
Thank you. We appreciate your participation in the cleanup process at this site.

[...] *The grading of the park is designed to have a minimum of a 2% slope to promote drainage. The idea is to mitigate stormwater through sheetflow, this method of stormwater management would promote direct flow of untreated stormwater into Bellingham Bay. Our concern is that the stormwater Will carry nan-point source pollutants such as fecal coliform bacteria and litter, both of which are very common at Bellingham Parks, directly into the Bay without any filtration. Non-point source pollution can have negative effects on the ecosystem and economy. Litter can cause entanglement, malnutrition, and death in wildlife. Fecal coliform bacteria can cause human and pet illness and closure to shellfish harvesting (NOAA 2016). A possible solution to this would be for the future park to include a riparian buffer that would allow for some filtration before the stormwater goes into the Bay; we understand that a decision to include riparian buffers would be made after the cleanup has happened and the City of Bellingham begins park planning and development*. [...]

Response
Ecology is also concerned about the potential for polluted stormwater runoff entering Bellingham Bay, particularly as it relates to the application of landscape chemicals at the future park. Requirements will therefore be established in construction and operational documents (e.g., the Monitoring, Maintenance, and Operations Plan) to prevent the application of fertilizers and other landscape chemicals at rates that could cause leaching into the drainage layer and discharge to the bay (see EDR, Section 5.2.6).

The design of the stormwater drainage system will ultimately need to meet the requirements of the City of Bellingham and the City's General Stormwater Permit issued by Ecology under the National Pollutant Discharge Elimination System (NPDES). Special provisions to limit stormwater pollution will likely be part of permit requirements. In any case, we will convey your concerns to the appropriate City and Ecology staff, and we suggest you contact the City directly as well during the upcoming permitting process.

And just for clarification, the stormwater drainage system is not being designed to discharge directly into Bellingham Bay via overland sheet flow. Instead, two systems are planned. Both start with stormwater infiltration and capture in a subsurface drainage layer. Water in the drainage layer will then reach the bay either through subsurface drain lines discharging into the sand filter layer at the shoreline (see EDR Figure 14, Details 1/10, 2/10), or to an eastern ditch discharging through a dispersion trench at the shoreline (see EDR Figure 6).

[...] *There are still two alternatives to shoreline armoring within the Engineering Design Report with the Groin Alternative being the primary choice over the Baseline Alternative. We support the Groin Alternative. The Groin Alternative allows for a more intact upper intertidal zone, providing forage fish spawning beds and connectivity between pocket beaches within*

Bellingham Bay Oohannessen et al. 2014). We ask that if the final design opts for the secondary choice, the Baseline Alternative, that environmental mitigation be done elsewhere to enhance the upper intertidal zone within Bellingham Bay. Consideration for habitat connectivity should also be taken into account for the Alternative chosen with the possibility for solutions to fish migration impediments as habitat is needed where possible in Bellingham Bay to lessen distances between habitat fragments. [...]

Response
Ecology also prefers the Groin Alternative, however both alternatives meet the requirements of MTCA. The final choice will likely be made during the construction permitting process, when state, federal and tribal agencies responsible for fish and wildlife management conduct detailed reviews of the project.

[...] *We are concerned about the timeframe of the scheduled marine construction phase and the possibilities of weather delays. The Engineering Design Report states a timeline of September 15, 2019 through February 1 5, 2020; this is when Bellingham often gets high wind storms and freezing temperatures. With such a short window, we are concerned about the potential of weather delays which ultimately would delay the final cleanup end date until marine construction can resume during another window of in-water work allowed by the permit(s). A contingency plan for any additional work that is not completed during the permitted timeline is therefore suggested*. [...]

Response
Ecology agrees that delays may occur in completing in-water aspects of the final cleanup due to weather. Contingency plans will be prepared for this potential, as you suggest, in the construction plans and specifications, and ultimately the bid documents.

[...] *Our final concern is the possibility of puncturing the geotextile fabric layer of the semipermeable cap. If the fabric did become punctured, mitigation would be costly and expose humans to potential landfill gas and leachate exposure. Once the site cleanup construction is complete, there are still many ways the fabric could become punctured including humans/animals digging holes down to the fabric, backhoe digging in the park construction phase of the site, boats running aground or dropping and pulling anchors, movement of large rocks within the shoreline armoring due to wave action, and vegetation roots. Signage and enforcement must be stringent to ensure humans are not the cause of the fabric becoming punctured. A wide perimeter designated "no anchoring' to ensure drifting boats do not wash up ashore. And thicker soil layer atop the semipermeable cap where larger vegetation, such as trees, are planted.* [...]

Response
Ecology acknowledges your concerns, and agrees that unless care is taken, tears could occur in one or more of the geotextiles in the cap while being placed and later during Site use. The potential for tears during construction will be addressed through implementing construction quality assurance/quality control plans that mandate inspections and testing (see EDR Section 6.3). The potential for tears during future Site

use will be addressed in the Monitoring, Maintenance, and Operations Plan and in an Environmental Covenant (see EDR Section 7.0). These documents will include requirements for periodic inspection, prohibitions on activities that could damage the upland or in-water caps, and methods for penetrating and then repairing the caps if necessary for future improvements or repairs (e.g., installing a new sanitary line). Upland (and potentially in-water) signage, as you suggested, will also be part of post-construction care, and a "no anchoring zone" will likely be established on relevant navigation charts for both this Site and the adjoining RG Haley site.

[...] *We appreciate the versatility of the design to adapt to sea level rise and a change in landfill gas composition and volume. The Engineering Design Report selected cleanup methods that are above the minimum requirements which ultimately will better protect our environment and citizens. Thank you for your time and consideration. We appreciate this opportunity for public comment and efforts to protect both human and environmental health. Sincerely, Eleanor Hines Lead Scientist RE Sources for Sustainable Communities*

Response

Thank you again for taking the time to comment.

Appendices

Appendix A. Public Comments in Original Format

Elizabeth Hines

Regarding the Cornwall Avenue Landfill Cleanup Site, my comments are as follows:
I live in close proximity to this toxic dump area. I have a family, children, grandchildren and neighbors who all agree with me. We were told by the Port of Bellingham that this toxic sludge and waste: metals, ammonia, petroleum compounds, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, among other poisons, would be "TEMPORARILY" placed in the south Cornwall Avenue site to hold until being removed, & transported and relocated to one of several toxic clean up sites, more likely the one in Oregon.
And now this report of capping the toxic waste site to isolate contamination and control landfill gas. UNBELIEVABLE!!!! And you are actually thinking of putting a park for children to play on on top of!!!!!!! No way!
This toxic waste needs to be removed, relocated and cleaned & stored in a proper toxic waste collection site!!!!
This area, as is, is harmful to people, animals & the environment including the Bellingham Bay just feet away. I am requesting a public hearing about the report, and I plan to be there. Please publicize it well. The property owners pay dear taxes, and we are helping to pay for the clean up of this mess left by RG Haley, and Georgia-Pacific. Please DO IT RIGHT!!!!!!
Elizabeth Hines

Max Schneider

I'm not an ecological or environmental expert, but it's great to see people working on restoring the wonderful Bay area around Bellingham. Seems to me that such prime real estate should have all the fancy buildings and great historical developments, but it just seems kind of neglected.

So good for you all and keep up the great work!

Seth Owens

Concerning the waste stock-piled at the south cornwall site. as it is contaminated soil from previous commercial ventures it would stand to reason the soil be removed to a site that is away from the bay and human development. The cost should be assessed to the current owners of the site and commercial ventures that profited from the activities that caused the contamination in the first place.

As this site is waterfront, the soil there is the filter for run-off to the bay and thus this clean-up would be a first step to attempt to mitigate future contamination.

Hopefully the ultimate goal is to make our environment safe for the many flora and fauna of the area.
This site will be a beautiful legacy for future generations and should be a source of pride for all those involved and the city of bellingham as a whole.

As a tax payer for many years in bellingham I feel that the costs associated with removal should be re-visited as a local dumping location might be possible that would satisfy the goal of clean-up of the site , rather than a "cap" that seems to me to be an inadequate solution.

Seth Owens

I request you set a public hearing for a question/answer discussion on the Cornwall Avenue Landfill Clean-up Site matter.
Sincerely,
Seth Owens

Frances White

This refuse needs to be taken off site and properly cleaned and disposed of as the initial cleanup project was intended. A "capped" cover up is in no way ok or safe for this area. Let's learn from our past mistakes and do the job right the first time. This is a beautiful piece of land that needs to be taken care of for our residents to have a healthy environment. This is what we as residents are paying for and deserve.

Liz Marshall

At least one public hearing should be held. This is such a critical topic that several opportunities for current public input should be created.

Rebecca Brown

Please hold a public hearing on this important project.

Raymond Ballweg

Please hold a public meeting to review the consequences of not removing the toxic materials at the site. What is most distressing is not addressing the pollution in Bellingham Bay away from the site until some "future" date. Who are you kidding that something will be done after the park is built when no one can see the pollution under the water. A couple of years ago the City of Bellingham had to mitigate garbage seeping into the bay from the site. Over time it will just reoccur and officials will probably say that they had no idea.

Geoffrey Middaugh

I urge DOE to hold a public hearing on this plan, so the public can see the complexity of the site. I was on the COB Parks and Recreation team working on the plan for the park after the remediation. I will further review the documents provided. My concerns relate to the surface flow of water at the site from the neareby hillsides, and the railroad. I am also concerned about the vegetative recovery plan for the site. I am also concerned about the full remediation of the organic materials (sawdust) off shore. Respectfully, please hold a public hearing on this complex project. Geoff Middaugh, South Hill

Jean Waight

I would like there to be a hearing so the public can compare and discuss the current proposal against the years-ago extensive public input that was received on this and the rest of the enveloping waterfront redevelopment project, to see how well the two square.

Thank you!

Beth DeWitt

I'm interested in the current status of the Cornwall Landfill and would appreciate a public meeting in Bellingham to update community members on the progress of the project. I'm interested to know if the project is going as planned, if it's on-schedule, and if any special challenges have come up. What are the long-term, residual effects at this site? I think it's important that citizens are up-to-date on this project, especially in light of waterfront revitalization plans. I'm not familiar with the big-picture plans for this area, but I would hope it will be a public park with shoreline access, similar to the very popular Boulevard Park. thanks-

Julia Sutton

What happens to this site in severe conditions such as an earthquake or tsunami? While I do agree that something must be done, it would be best to hold a public hearing to address local concerns.

Helga Aldrich

I am requesting a public hearing on the Cornwall landfill clean up. To just cover the toxic materials with a thin layer of soil and some plastic does not seem seem sufficient in my view to protect our precious waters from potential contamination.

Pam Borso

Please hold a public hearing on this important matter

Susan Tommervik

I am concerned that these highly toxic substances could end up in the Bay due to natural disasters such as earthquakes or landslides, or even by train derailments. I think they should be transported elsewhere, with less possibility of toxic pollutants ending up in our waterway, harming our marine ecosystem and industries.

Please hold a public hearing on these plans.

Thank you.

Robert Simmons

Please schedule a public hearing on the proposed cleanup process at the Cornwall Avenue Landfill Cleanup site. Nothing the Dept. of Ecology has proposed publicly offers assurance that the site can ever be made safe for public activities.

tony gallina

I would like to have a hearing

David Helm

Before any decision is made regarding this toxic waste a public hearing needs to be held; and heeded. There have been way to many clean up decisions based on the cheapest, least effective methods.

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I request a public hearing to address the severity of such a shift of those soils, where the most dangerous materials should be moved to, and how to do the transport of them."

So I echo these concerns and would like to see a public hearing around this.

Thank you,
Suzy Tonini

Marian Beddill

by Marian Beddill:
That landfill - the Cornwall Avenue Landfill cleanup site on the shoreline - is a serious thing because it is on the shoreline. Even a modest earthquake can move the dangerous contents back into the open waters of the Salish Sea.
I request a public hearing to address the likelihood and severity of such a shift of those soils, where the most dangerous materials should be moved to, and how to best do the transport of those soils.

Monte Hokanson

Consider using biochar to detox the contaminated soil. The attached infographic "shows how soils are contaminated, how toxicity can be mitigated and most importantly how biochar can remediate toxic soils."
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Jean Hamilton

As a member of the Cornwall Beach Neighborhood Advisory team and as president of the Sehome Neighborhood I am so pleased to see this project moving forward . A great deal of careful thought has gone into ameliorating the harm that former generations did, mostly out of ignorance, by dumping sawmill waste and the community's solid wastes along a vulnerable shoreline.
If this project goes forward it will create a park that I predict will be at least as popular and well used as Boulevard Park. At last our children and grandchildren will be able to access the waterfront from Downtown. I could not be more pleased.

Terry Montonye

Mark,

Two thoughts:

1. Recreational power boat boatel & launch site at that location (beneath the bluff) subsequent to the work you have described and an increase in the slip rates to cover it?

2. How that section of Cornwall Beach might be used commercially if and when the Jones Act gets repealed?

Otherwise, very impressed!

Judith Akins

Thank you to Ecology and Port of Bellingham for sponsoring the public meeting on the Cornwall Landfill cleanup site. I have followed this through the beginning cleanup discussions. I realize that there is a balancing act between cost, disturbance of hazardous materials and an acceptable environmentally healthy site. While this plan probably meets all this criteria it is not perfect. I would like to have seen complete removal but realize that was not possible. I only hope that this project does not come back to require further remediation and have the cost far exceed what the top cleanup would have cost. I hope that future generations will not have to pay for our mistakes today.

Liz Marshall

I commend Ecology, the City, the Port, and WADNR for the cleanup. It seems like an engineering miracle to pull off remediation which is satisfactory for both people and the environment. Maybe the project has gone on since 1996 and is two years behind schedule but it is great to correct the contamination.

My preference when this phase and park plans take off would be to emphasize construction, topographical features, and abundant native plants that are conducive to aquatic, avian and all creatures. Structure, designs and systems ideally would deter members of the public from harming the acreage both upland and marine. For just one example, people constantly throw rocks into the water for some odd reason - adults and children alike. Landscape rocks are probably bought for a pretty penny from river sources far away, perhaps even overseas. Throwing them into the Bay not only hurts or kills the creatures who are hit, but wastes taxpayers' money and sacrifices those landscapes where the rocks came from.

I will be glad if the City's monitoring of shoreline habitat and species shows benefits to birds, fish and terrestrials after the cleanup. Maybe the City, Port, etc. have extermination tendencies with regard to geese, pigeons, gulls and others - I don't know for sure - but in my opinion it would be the correct action to enhance shoreline habitat and respect/protect non-human as well as human animals.

Thank you for your science and good works.

RESOURCES FOR SUSTAINABLE COMMUNITIES
PROTECT. ACTIVATE. INNOVATE. THRIVE.

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To: Mark Adams
Site Manager, Cornwall Avenue Landfill
Washington State Department of Ecology
Transmitted Via Email to: mark.adams@ecy.wa.gov

February 22, 2018

RE: Cornwall Avenue Landfill Cleanup Site - Engineering Design Report

Dear Mark Adams,

Thank you for taking the time to consider our comment on the Cornwall Avenue Landfill Cleanup Site Engineering Design Report managed by the Washington Department of Ecology.

RE Sources for Sustainable Communities is a local organization in northwest Washington, founded in 1982. RE Sources works to build sustainable communities and protect the health of northwest Washington's people and ecosystems through the application of science, education, advocacy, and action. Our North Sound Baykeeper program is dedicated to protecting and enhancing the marine and nearshore habitats of northern Puget Sound and the Georgia Strait. Our chief focus is on preventing pollution from entering the North Sound and Strait, while helping our local citizenry better understand the complex connections between prosperity, society, environmental health, and individual wellbeing. Our North Sound Baykeeper is the 43rd member of the Waterkeeper Alliance, with over 300 organizations in 34 countries around the world that promote fishable, swimmable, drinkable water. RE Sources has over 20,000 members in Whatcom, Skagit, and San Juan counties, and we submit these comments on their behalf.

We appreciate the time and effort taken to put the Engineering Design Report out to public comment. Overall the Engineering Design Report addresses our concerns for human and ecological health; however, we have a few concerns that we would like considered, outlined below.

The grading of the park is designed to have a minimum of a 2% slope to promote drainage. The idea is to mitigate stormwater through sheetflow, this method of stormwater management would promote direct flow of untreated stormwater into Bellingham Bay. Our concern is that the stormwater will carry non-point source pollutants such as fecal coliform bacteria and litter, both of which are very common at Bellingham Parks, directly into the Bay without any filtration. Non-point source pollution can have negative effects on the ecosystem and economy. Litter can cause entanglement, malnutrition, and death in

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wildlife. Fecal coliform bacteria can cause human and pet illness and closure to shellfish harvesting (NOAA 2016). A possible solution to this would be for the future park to include a riparian buffer that would allow for some filtration before the stormwater goes into the Bay; we understand that a decision to include riparian buffers would be made after the cleanup has happened and the City of Bellingham begins park planning and development.

There are still two alternatives to shoreline armoring within the Engineering Design Report with the Groin Alternative being the primary choice over the Baseline Alternative. We support the Groin Alternative. The Groin Alternative allows for a more intact upper intertidal zone, providing forage fish spawning beds and connectivity between pocket beaches within Bellingham Bay (Johannessen et al. 2014). We ask that if the final design opts for the secondary choice, the Baseline Alternative, that environmental mitigation be done elsewhere to enhance the upper intertidal zone within Bellingham Bay. Consideration for habitat connectivity should also be taken into account for the Alternative chosen with the possibility for solutions to fish migration impediments as habitat is needed where possible in Bellingham Bay to lessen distances between habitat fragments.

We are concerned about the timeframe of the scheduled marine construction phase and the possibilities of weather delays. The Engineering Design Report states a timeline of September 15, 2019 through February 15, 2020; this is when Bellingham often gets high wind storms and freezing temperatures. With such a short window, we are concerned about the potential of weather delays which ultimately would delay the final cleanup end date until marine construction can resume during another window of in-water work allowed by the permit(s). A contingency plan for any additional work that is not completed during the permitted timeline is therefore suggested.

Our final concern is the possibility of puncturing the geotextile fabric layer of the semipermeable cap. If the fabric did become punctured, mitigation would be costly and expose humans to potential landfill gas and leachate exposure. Once the site cleanup construction is complete, there are still many ways the fabric could become punctured including humans/animals digging holes down to the fabric, backhoe digging in the park construction phase of the site, boats running aground or dropping and pulling anchors, movement of large rocks within the shoreline armoring due to wave action, and vegetation roots. Signage and enforcement must be stringent to ensure humans are not the cause of the fabric becoming punctured. A wide perimeter designated “no anchoring” to ensure drifting boats do not wash up ashore. And thicker soil layer atop the semipermeable cap where larger vegetation, such as trees, are planted.

We appreciate the versatility of the design to adapt to sea level rise and a change in landfill gas composition and volume. The Engineering Design Report selected cleanup methods that are above the minimum requirements which ultimately will better protect our environment and citizens.

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Thank you for your time and consideration. We appreciate this opportunity for public comment and efforts to protect both human and environmental health.

Sincerely,

Eleanor Hines
Lead Scientist
RE Sources for Sustainable Communities

References:

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