

**RESPONSE TO COMMENTS on the
Draft Supplemental Feasibility Study for the
Whatcom Waterway Site**

and

**Draft Supplemental Environmental Impact
Statement for the Bellingham Bay
Comprehensive Strategy**

October 2002

Introduction

In March 2002, the ***Draft Supplemental Feasibility Study for the Whatcom Waterway Site*** and ***Draft Supplemental Environmental Impact Statement for the Bellingham Bay Comprehensive Strategy*** were made available for public review and comment. Both documents evaluate a new remedial alternative for the Whatcom Waterway site that includes disposal of contaminated sediments in a portion of Georgia-Pacific's Aerated Stabilization Basin (ASB). Georgia-Pacific's ASB was constructed in 1978 to provide secondary wastewater treatment, primarily for its pulp mill operations.

In late 2001, following closure of the pulp mill and associated operations, Georgia-Pacific determined that 21 acres of the 29-acre ASB could potentially be used as a disposal facility for contaminated sediments dredged from the Whatcom Waterway site and other sites in Bellingham Bay.

Because the ASB was not an available sediment disposal option when the original Remedial Investigation/Feasibility Study and Environmental Impact Study were issued, a Supplemental Feasibility Study and Environmental Impact Statement were developed to evaluate this new alternative.

The supplemental documents were available for public review and comment from March 11, 2002 through April 24, 2002.

Public involvement activities related to these documents included:

- ❖ Distribution of a fact sheet to approximately 1,000 people in Bellingham and other interested parties.
- ❖ Publication of a paid display ad in the *Bellingham Herald* on March 10, 2002.
- ❖ Publication of a notice in the Washington State Site Register, dated March 5, 2001.
- ❖ Posting of the documents on the Ecology web.
- ❖ Providing copies of the documents through information repositories at Ecology and at the Bellingham Public Library.
- ❖ Open house and public meeting on March 21, 2002.

There were no changes to the documents as a result of comments received.

Comments Received and Ecology Responses:

May 10, 2002

Department of Ecology, NWRO
Lucy McInerney
3190 160th Ave. SE
Bellevue, WA 98008-5452

Subject: Comments on the Bellingham Bay Comprehensive Strategy, Draft Supplemental Environmental Impact Statement

Dear Ms. McInerney:

The Department of Natural Resources (DNR) appreciates the opportunity to provide input on the subject document. Due to the DNR's involvement on the work group and subcommittees and the consequent opportunities for direct input to the comprehensive strategy process, our comments will be kept general and brief.

As noted on page 3-41 of the *Bellingham Bay Comprehensive Strategy, Final Environmental Impact Statement* (October, 2000), "DNR establishes and manages harbor areas for landings, wharves, streets and other conveniences of navigation and commerce".

1 However, this is only one function within the Department's stewardship goals which strive to: *foster water-dependent uses, ensure environmental protection, encourage direct public use and access, promote production on a sustainable basis of renewable resources, and generate income consistent with the other goals.*

2 The Supplemental EIS creates a new opportunity to utilize Georgia Pacific's aerated stabilization basin as a disposal site for contaminated sediments that would otherwise be permanently contained on state owned aquatic lands (SOAL). Although armoring will still be necessary adjacent to the Cornwall Landfill, this will allow greater flexibility in future uses of the site.

3 DNR would like to ensure that as part of this public process, sufficient analysis is performed to address potential harbor line adjustments related to future land use and remediation work. This analysis will be necessary to determine the type and amount of harbor area needed to meet the long-term needs of water dependent commerce and navigation. In addition to commerce and navigation, harbor area analysis must also consider impacts to the economy, Native American treaty rights, public access and environmental impacts.

Thank you for your consideration. DNR looks forward to continued participation in the Bellingham Bay Comprehensive Strategy.

Sincerely,

Joanne Snarski
DNR Aquatic Land Manager

C: Fran McNair
David Roberts

Response to Comments:

Response to Joanne Snarski, Washington Department of Natural Resources

- 1) Comment noted.
- 2) Comment noted.
- 3) Comment noted. Continued coordination with and participation of DNR and other interested parties is expected and encouraged.

816 16th Street
Bellingham, WA 98225
360-647-2531

April 3, 2002

Ms. Lucy McInerney
Washington Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008

**Re: Draft Supplemental Feasibility Study for the Whatcom Waterway Site
Bellingham, Washington**

Dear Ms. McInerney:

On March 21, 2002 I attended the open house and public meeting in Bellingham regarding the Draft Supplemental Feasibility Study for the Whatcom Waterway Site. I subsequently read that document and have comments and suggestions to improve the document.

1 In my opinion, Alternative J (Georgia-Pacific Aerated Stabilization Basin (ASB) disposal option) is a well-considered, cost-effective disposal option protective of human health and the environment, and should be implemented if additional technical investigations prove the viability of this remedial alternative. However, I caveat my opinion pending the resolution of one technical comment regarding Alternative J: the Draft Supplemental Feasibility Study does not address how to keep the dredged sediments anoxic.

2 In his presentation on March 21, Mr. Clay Patmont of Anchor Environmental stated that leachate testing of sediments indicated that mercury, phenolics, and other contaminants would not leach into surrounding waters. Mr. Patmont stated that mercury would be stable in the ASB because of the anoxic conditions created by a high water table in the ASB. Nowhere in the Draft Supplemental FS is there mention of the requirement to keep the dredged sediments anoxic to prevent mercury from leaching. There is no analysis in the Draft Supplemental FS of the degree of saturation expected in the ASB under natural precipitation, evapotranspiration, and groundwater inflow/outflow conditions. Nor is there an analysis of whether the degree of saturation would be adequate to maintain anoxic conditions in the ASB during likely climatic fluctuations. Why this is important is the fact that all landfills, whether lined or unlined, leak. It is possible that mercury may leach from the ASB to surrounding soil and water if the dredged sediments are oxygenated.

I have two suggestions for Ecology, Georgia-Pacific, and Anchor Environmental to address the issue of potential mercury mobilization from the ASB via leachate:

1. It is stated on page 33 of the Draft Supplemental FS that site-specific thin-layer column leachate testing will be performed on sediment samples to assess the long-term water quality of the disposal site. The testing should be performed under both anoxic and oxic conditions to evaluate potential contaminant mobility. If contaminants do not leach under either anoxic or oxic conditions, then sediment confinement in the ASB should be protective of surrounding soil and water regardless of the water table position.

- 3 2. The long term position of the water table in the ASB can be evaluated by a water balance analysis that accounts for precipitation, runoff from the cap, evapotranspiration from the cap, net infiltration through the cap, porosity of the confined sediments, and leakage through the bottom and sides of the ASB. The EPA HELP model can be used to evaluate most of the water balance terms. If the calculated water table under natural conditions in the ASB is higher than the confined sediments, then this disposal option would be viable. If not, then it may be necessary to perpetually sustain an anoxic water table in the ASB by pumping. Perpetually pumping water into the ASB would greatly alter the cost effectiveness of Alternative J.

Please feel free to contact me if you have any questions regarding this letter.

Sincerely,

Norm Nielsen
Washington Licensed Hydrogeologist Number 327

Response to Mr. Norm Neilsen.

- 1) Comment noted. The technical issues surrounding the maintenance of the site conditions are addressed during the design phase of cleanup projects. During the design phase, a **cleanup action plan** and **engineering design report** will be developed to address these issues. Both of these documents will be made available for public review and comment. If this alternative is selected, design, construction and ongoing management of the site will be evaluated to adequately ensure continued protection of human health and the environment.
- 2) Detailed leaching studies are being performed on sediments collected from the more highly contaminated areas of the site, and represent sediments that would generate the highest leachate mercury concentrations. The pre-remedial design leaching tests are currently being performed using the Pancake Column Leach Test (PCLT; formerly known as the thin-layer column leach test) using procedures developed by the U.S. Army Corps of Engineers and accepted for contaminated sediment disposal evaluations by Ecology, the U.S. Environmental Protection Agency (EPA), and other regulatory agencies. Consistent with regulatory guidance, leaching tests are normally run under anaerobic conditions. This is particularly appropriate since containment design will minimize atmospheric oxygen penetration and maximize anaerobic conditions. Anaerobic conditions will preserve the very large sulfide reserves present in the sediments. Again, if this alternative is selected, the design will be developed and further evaluated to adequately ensure continued protection of human health and the environment. (See also Hanners #1 and Johnson and Tolchin #5).
- 3) Comment noted (refer to comments 1 and 2 above).

Supplemental Feasibility Study,
Whatcom Waterway &
Supplemental Environmental Impact Statement,
Bellingham Bay Comprehensive Strategy



Comment Form

This is an invitation for comments on the following documents: *Draft Supplemental Feasibility Study* for the Whatcom Waterway Site and *Draft Supplemental Environmental Impact Statement* for the Bellingham Bay Comprehensive Strategy. Please send your comments by April 24, 2002 (address on reverse).

Name and address optional

Name... THOMAS O'MDORE.....
Address... 509 CYPRESS RD......
City... BELLINGHAM..... Zip Code... 98225.....
E-mail Address... thosmo@.hotmail.com.....

1. The documents are designed to evaluate the feasibility and potential adverse environmental impacts of a new sediment remediation alternative for the Whatcom Waterway site. Do you have any comments about whether the evaluation performed in these documents is accurate and/or complete? If so, please describe.

1 TO GIVE YOU SOME FEED BACK. I WOULD PREFER THAT
2 THE MUD TAILINGS FROM THE WATERWAY DREDGING BE PUT
3 IN THE RETENTION POND THAT GP IS OFFERING, IT SEEMS THE
BEST LONGTERM SOLUTION. ALSO I PREFER USING THE HYDRO-
VACUUM METHOD OF EXTRACTION AS PROPOSED. IN THE END
AFTER THE AREA IS CAPPED WE SHOULD VEGETATE THE AREA

thanks for an informative meeting

THOMAS O'MDORE

Response to Mr. Thomas O'Moore.

- 1) Comment noted.
- 2) Comment noted. If this alternative is selected, a more thorough evaluation of the potential for utilization of suction dredging will be performed in the design phase.
- 3) Comment noted. If this alternative is selected, the potential beneficial uses will be reviewed. It should be noted that this property is currently owned by the Georgia-Pacific Corporation.

Below are comments from August 2000, which remain my comments today.

>Date: Sat, 26 Aug 2000 10:09:08 -0700
>To: Maria.Peeler@wadnr.gov
>From: George Dyson <gdyson@cc.wvu.edu>
>Subject: Bellingham Bay Pilot Plan
>Cc: Robyn du Pre <waters@re-sources.org>

>
>
>Ms. Maria Peeler
>DNR Aquatic Resources Division

>
>Dear Ms. Peeler:

>
>I was one of the citizen observers who attended the Bellingham Bay Pilot
>Team meeting on August 24. I commend you for your reasonable defense of
>DNR's position, which is not at all adversarial to the stated goals of the
>project as a whole.

>
>As a private individual and owner of property adjacent to the Whatcom
>Creek Waterway I have no particular standing in this process other than an
>interest in seeing the cleanup issue resolved. I take this opportunity to
>point out the obvious, in the event that after all the years of
>discussions the following alternative has not been addressed:

>
>Sooner or later one of two things is going to happen to G-P's Bellingham
>operations. They are going to either a) drastically clean up their process
>and effluent stream, or b) shut down.

>
>In either event (and it could be soon, in Bay Pilot years) G-P's effluent
>treatment lagoon (approx 30 acres, officially the Aerated Stabilization
>Basin) will become a complete dinosaur (as it is already, in fact, since
>technologies exist to prevent what the basin is attempting, after the fact
>and with limited success, to correct).

1
>
>This is the place to put the contaminated sediments. They can be isolated
>and capped, and the area reclaimed as the spectacular waterfront that it
>should be. This alternative is preferable to moving toxic sediments around
>the bay, and cheaper than finding a place for them upland. G-P could
>probably *make* money on this alternative, by lowering their liability and

>disposal costs, and then selling the property back to the city or the
>port, if the containment is done so the land can get at least a clean bill
>of health as open space.

>

>Moving these sediments more than once is environmentally and economically
>unsound, and telling the public that treatment options are going to become
>less expensive or more available in the future is a fraud.

>

>Much as I would like to see the project immediately move forward, I urge
>you and DNR to hold your ground. The worst of the contaminated sediments
>should be removed from the bay (and the log pond, which is part of the
>bay) or left as is for the time being, not shuffled around. A reasonable,
>affordable solution exists that could benefit all parties concerned. We
>are going to look pretty foolish if we spend untold millions moving
>sediment around the bay, and then the mill cleans up or closes, leaving us
>wondering what to do with that ASB lagoon. 400,000 yards of sediment would
>fill about 6 feet of the lagoon, leaving ample room for containment and
>capping that would solve this problem once and for all.

>

>

>Yours sincerely,

>

>

>George Dyson

Response to Mr. George Dyson

1) Comment noted.

FRIENDS OF WHATCOM COUNTY

CLEAN LAND, AIR, WATER, GOOD GOVERNMENT AND A HEALTHY ECONOMY
PO Box 2237, Bellingham, WA 98227 ~ 360.676.1211 ~ www.friendsofwhatcom.com

04/24/02

Lucy McInerney, Site Manager
Department of Ecology
Northwest Regional Office
3190 160th Ave. S.E.
Bellevue, WA 98008

REF: Draft Supplemental Feasibility Study for the Whatcom Waterway Site & Draft
Supplemental Environmental Impact Statement for the Bellingham Bay Comprehensive Strategy

Dear Ms. McInerney,

1 Thank you for this opportunity to participate in the review of this modification of Georgia-Pacific's "Preferred Integrated Near-Term Remedial Action" and the above referenced documents. Many of the following comments apply to both documents. In general, we believe the problem has not been adequately studied, that the conclusions are premature and that the proposal does not fully comply with many regulatory requirements, including but not limited to various RCWs and WACs, MCTA, CERCLA, RCRA, CWA, CAA, ESA and the recently adopted S.522, also known as the "Beach Bill".

2 Generally we consider the waterfront, especially in our City Center and located on the rainy west slope, to be the worst possible place to dispose of toxic sludge and sediments. Suitable disposal facilities should be inland and in more arid locations. The waterfront is a harsh environment subject to erosion and physical distress, as from storm tossed logs. The goal of preventing entry of toxic materials into public waters is compromised by putting containment facilities on the shoreline.

3 Initially, we consider the dredging as unsupportable. The environmental risks of the proposed program should theoretically be balanced against a need to sustain commerce and trade. An economically viable trade or commerce that requires dredging the waterway should be demonstrated in comparison to a detailed analysis of the environmental costs and benefits of dredging vs. not dredging. Otherwise the risks are too great. A more detailed Natural Resource
4 Damage Assessment should be prepared.

5 Alternate uses of the ASB should be evaluated. With scarce waterfront resources, the best interests of the community at large should be taken into consideration. The ASB is down gradient from the bulk of Bellingham's population. There may be no better location for a future storm water treatment facility. This potential use was not examined. Also, the existing shore
6 protections may be most economically productive through conversion to another recreational boat basin. If most of the lagoon's capacity is no longer needed, then the alternative that G-P dredge, treat, transport and dispose of contaminated sediments located therein should also be studied, and the relevant information and analysis disclosed. If this modification is justified simply by the recent availability of the ASB as a CDF, then the alternative for shipping to existing approved facilities should also be reconsidered in view of recent landfill price reductions. A real approved facility offers far better protection from hazards to human health and the environment.

7 There has been no mass balance accounting of the estimated 600 or more tons of mercury used in G-P's chlor-alkali process. Therefore, the public has only projections based on minimal sampling to gauge the risk of local disposal. None of the project documentation has considered the risks of potential mercury vapor flux from dredging, CADs, CDFs, capping, etc., or compared it to no action alternatives. Indeed, in a letter to Richard Grout (D.O.E.) dated 12/19/01, a number of questions regarding mercury vapor monitoring were asked. The letter has so far gone unanswered. Mercury vapor monitors should be established both up and down wind of the site. Time is needed to establish a baseline correlated with air temperature, wind speed and direction. Dredge and disposal tests should be monitored for mercury flux, including the effectiveness of capping as a means of containing mercury vapors. The danger of these vapors, methylated in anaerobic sediments has not yet been assessed in any way.

8 A number of other compounds have not been adequately considered in the assessment. A wide range of PBTs and carcinogens are known or suspected to have been released from G-P over the years. G-P's history of illegal dumping should suggest a broader field of investigation (Please see attached exhibits). The presence of a thick layer of suspended lignin/pulp slurry over much of the bay has so far been ignored. The EPA found G-P to be producing inordinately high levels of organochlorines – up to 100 times higher than other mills. No attempt has apparently been made to assess the significance of this slurry as a vehicle for dioxins and especially furans. Also, the hydrogen sulfide odor produced by this slurry is a nuisance from Little Squalicum beach to Fairhaven, often quite overpowering at Boulevard Park during low tide. This nuisance and the BOD imposed on the bay have not been adequately addressed. The assessment does not consider the presence of hexavalent and tri-valent chromiums that documents indicate may also be present.

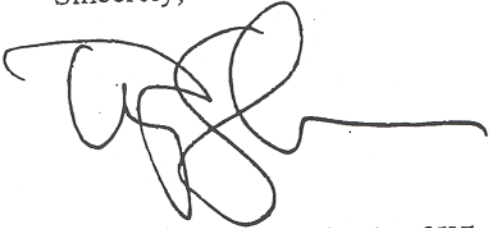
9 We are especially concerned with the integrity of the ASB. G-P's seepage monitoring should be independently verified. Double samples should be made available for public scrutiny. The soupy organic layer underlying the site is a risk that may require a high density PVC liner to overcome. The clay liner cannot be trusted to withstand the loads from the proposed action, or to stand up over time. The overburden of dredged sediments could force the clay liner and mercury-laden materials already resident in the lagoon underneath the berm, especially into the waterway, where invert elevations compromise buttressing of the berm's foundation. The soupy underlying layer makes seismic integrity of the berm especially suspect, especially where existing eelgrass beds make buttressing impossible.

10 The study completely fails to consider the ASB's vulnerability to storm events associated with meteorological variability and sea level rises predicted to accompany global warming. Even according to conservative EPA estimates, the facility could require extensive fortification over the next 100 years to prevent catastrophic failure. That could be a large unanticipated public cost. There is no more rugged, erosive environment than the seashore, especially considering long fetch for prevailing winds and shallow wave approach this location suffers. Failure of the facility would be a disaster proportional to the toxicity of material, a factor we consider to be virtually unknown at this time.

11 After 40 years of excessive pollution and violations from G-P, Bellingham deserves a permanent clean-up such as removal and disposal at the Arlington or Roosevelt landfills. Selling our City Center waterfront short and having Bellingham foot the bill for disposal of the wastes compromises citizens today, generations to come and the environment at large. Treatment and

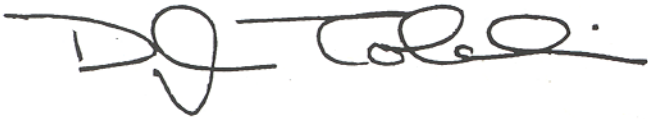
disposal options should be more carefully considered. Cost should be a minor factor in making the decision.

Sincerely,



Tip Johnson - for Friends of Whatcom County and as an individual

Also signed and submitted by:



Douglas Tolchin - both as an individual and as President of River Oak Properties

Attached:

- USEPA Paper Industry Cooperative Dioxin Study
- List of toxins known to have been released by G-P (We presume air emissions are deposited and cycled to public waters)
- Memorandum noting G-P's use of chromium compounds

Response to Mr. Tip Johnson and Douglas Tolchin

- 1) Comment noted. Ecology believes that all regulatory laws and statutes are and will continue to be complied with throughout this project. Any specific issues regarding potential noncompliance should be detailed and forwarded to Ecology in order that these issues can be addressed and appropriate actions undertaken to alleviate any ongoing concern.
- 2) Comment noted. Previous and ongoing evaluations of the environmental protectiveness offered by the list of alternatives shows that effective physical and chemical containment strategies can be employed at waterfront properties. Ongoing containment design in the **cleanup action plan** and **engineering design report** will more definitively answer specific protectiveness and implementability issues. If selected, the ASB will be designed to ensure protection from foreseeable environmental forces, consistent with current Ecology, EPA, and Corps guidance for confined sediment disposal facilities. In the unlikely event that such protection cannot be achieved with the ASB, another more viable alternative will be selected by Ecology as a contingent remedy.
- 3) The balance between future site use and environmental risk has been given careful consideration by the federal, state, tribal and local stakeholders involved in the Bellingham Bay Pilot Work Group. Cooperation between all parties and evaluation of these factors led to the alternatives presented in the Bellingham Bay Comprehensive Strategy and the alternatives presented in the Whatcom Waterway Feasibility Study and Supplemental Feasibility Study.
- 4) Natural Resource Damage Assessment (NRDA) decisions are the authority of the NRDA agencies, including tribes, federal services, and Ecology, among others. The tribes and federal/state NRDA agencies have been involved throughout the Bellingham Bay Project and have been instrumental in shaping the alternatives process.
- 5) If this alternative is selected, all potential beneficial uses will be reviewed. It should be noted that this property is currently owned by the Georgia-Pacific Corporation.
- 6) The cost estimates for shipping to landfill facilities were reevaluated and resulted in a 10 percent reduction in tipping fees for disposal of contaminated sediment. The cost of shipping sediment to a landfill is still substantially greater than use of the ASB for sediment disposal. As set forth in MTCA (Chapter 173-340-360[5]), a cleanup action shall not be considered practicable if the incremental cost of the cleanup action is substantial and disproportionate to the incremental degree of protection it would achieve over a lower preference cleanup action. When selecting

from among two or more cleanup action alternatives that provide a sufficient and equivalent level of protection, as defined above, preference may be given to the least cost alternative, subject to an evaluation of public concerns and technical uncertainties.

- 7) a) Current human health risks have been calculated based on site-specific measured concentrations and exposure pathways. Mass balancing is not necessary to calculate these risks. b) Potential mercury vapor flux estimates developed to date for the site are of a relatively low magnitude, and are not likely to pose a potential human health or environmental concern. However, more detailed mercury vapor flux calculations will be performed during remedial design for the alternative selected in order to verify that site-specific conditions will provide for adequate safety for both human health and the environment. These data will be made available for public review and comment in the design documents. Current G-P upland and groundwater remedial site cleanup monitoring data show that risks to human health due to mercury vapor is far below United States Occupational Health and Safety Guidelines and other relevant risk –based criteria. Site monitoring for mercury vapor will also be included as part of the sediment cleanup monitoring strategy, although compliance results are expected to be similar to those for the upland cleanup areas.
- 8) Sediment chemical testing included many organic and inorganic compounds. Biological testing was also performed to assess environmental threats posed by these compounds as well as by compounds which may potentially cause deleterious ecological effects through synergistic interactions. Based upon these data, those compounds identified as being of concern to human health and the environment are the focus of the remedial action.
- 9) If the ASB is selected as part of the preferred cleanup action, detailed engineering analyses will be presented in the **engineering design report**. The feasibility phase of the process is not designed to address specific design issues; however they will be addressed in subsequent documents regardless of the alternative selected.
- 10) Comment noted. See response #9 above.
- 11) Comment noted. See response #3 above.



State of Washington
DEPARTMENT OF FISH AND WILDLIFE

Region 4 Office: 16018 Mill Creek Boulevard - Mill Creek, Washington 98012 - (425) 775-1311

April 19, 2002

Department of Ecology
Northwest Regional Office
Attention: Lucy McInerney
3190 160th Avenue SE
Bellevue, WA 98008-5452

Subject: Washington Department of Fish and Wildlife Comments - Draft Supplemental Environmental Impact Statement and Draft Supplemental Feasibility Study - Whatcom Waterway, Tributary to Bellingham Bay, WRIA 01.MARI

Dear Mrs. McInerney:

The Washington Department of Fish and Wildlife (WDFW) has reviewed the above referenced Draft Supplemental Environmental Impact Statement and Draft Supplemental Feasibility Study and offer the following comments for your consideration. WDFW may submit additional comments in the future as review of the Draft Supplemental Environmental Impact Statement and Draft Supplemental Feasibility Study progresses.

Concerns and Issues:

1. Given the distance between the south Bellingham contaminated sites and the proposed ASB disposal site, is it feasible to use a hydraulic dredge to remove the contaminated sediments from these sites and safely convey the sediment/slurry to the ASB site?
2. The remedial design phase will need to confirm that the ASB facility is designed to ensure the long term stability of the facility and that the ASB facility will withstand the effects of potential future seismic challenges.
3. The proposed sediment caps will need to be designed to ensure that the integrity of the cap will not be compromised through bioturbation from benthic organisms.
4. The proposed sediment caps will need to be designed to ensure that benthic organisms are not exposed to contaminated sediments.
5. The cap designs in the vicinity of the ASB/I&J Waterway and in the vicinity of the Cornwall Avenue Landfill should attempt to incorporate bed elevations and substrate materials that will facilitate the opportunity for eelgrass (*Zostera marina*) to be restored and enhanced in those areas.

Positive Attributes of the Modified Preferred Remedial Action Alternative:

1. The Modified Preferred Remedial Action Alternative retains the potential for up to 400,000 cubic yards of contaminated sediments to be available for treatment in the event that a treatment technology can be identified.
2. The Modified Preferred Remedial Action Alternative reduces the area of subtidal habitat that will be disturbed from 180 acres to 163 acres.
3. The Modified Preferred Remedial Action Alternative reduces the area of subtidal habitat that will be converted to intertidal/shallow subtidal habitat from 41 acres to 10 acres.

WDFW's Position:

WDFW prefers that contaminated sediments be disposed at upland facilities where the following criteria can be satisfied:

- a. It can be demonstrated that the upland disposal site is stable and will remain stable when challenged by future seismic events.
- b. It can be demonstrated that potential re-contamination pathways at the upland disposal site can be minimized and effectively managed.
- c. It can be demonstrated that the potential re-contamination pathways associated with the conveyance of the contaminated sediments to the upland disposal site can be minimized and effectively managed.

Given the current level of analysis for the proposed ASB disposal site, it appears that the proposed ASB disposal site meets these criteria. Therefore, WDFW prefers the proposed Modified Preferred Remedial Action Alternative and supports moving forward with the remedial design phase for this alternative.

If you have any questions, please contact me at (360) 466-4345, extension 250.

Sincerely,



Brian Williams
Area Habitat Biologist

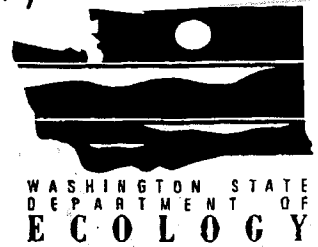
cc:

Bob Everitt - WDFW

Response to Mr. Brian Williams (Washington State Fish and Wildlife)

- 1) If the selected remedial alternative for the south Bellingham sites includes dredging, hydraulic dredging will be further evaluated for potential use. Hydraulic dredging may be feasible over considerable distance, however, evaluation of cost effectiveness and practicality will be done as the **cleanup action plan** and **engineering design report** are developed.
- 2) If the ASB is selected as the alternative, the design phase will include evaluation of seismic stability under specified temporal/magnitude scenarios.
- 3) Comment noted.
- 4) Comment noted.
- 5) Comment noted.

Supplemental Feasibility Study, Whatcom Waterway & Supplemental Environmental Impact Statement, Bellingham Bay Comprehensive Strategy



Comment Form

This is an invitation for comments on the following documents: *Draft Supplemental Feasibility Study* for the Whatcom Waterway Site and *Draft Supplemental Environmental Impact Statement* for the Bellingham Bay Comprehensive Strategy. Please send your comments by April 24, 2002 (address on reverse).

Name and address optional

Name.. Albert J. Hanners Albert J. Hanners
Address... 3807 Plymouth Dr.
City... Bellingham Zip Code 98225
E-mail Address.....

1. The documents are designed to evaluate the feasibility and potential adverse environmental impacts of a new sediment remediation alternative for the Whatcom Waterway site. Do you have any comments about whether the evaluation performed in these documents is accurate and/or complete? If so, please describe.

1 MF Mercury must be methylated in order to enter fish and human bodies. Would moving mercury and organic matter from the Whatcom Waterway, to a higher, warmer place in the bay, expedite the rate of creating and releasing methyl-mercury? Would the current plan for the GP lagoon create a humongous generator of methyl-mercury? That was not specifically discussed at the meeting on 3/21/02, but "expert" testimony in response to questioning leads to that conclusion.

2 MF The lagoon as a dump site for sediments contaminated with mercury from the Whatcom Waterway would have all the conditions necessary for generating an enormous quantity of methylmercury and passing it into the air. Twenty-one acres would be used as a dumpsite; that's huge! It is 32 feet deep and the bottom 4 feet contain mercury-contaminated sediments accumulated since the lagoon went into service in 1979. The water level is 4 feet above the mean upper tide level; that's high, much higher than where the newly dumped sediments were before being dumped there.

My concern is that at least the upper part of sediments in the dump would be at seasonally warm temperatures and at temperatures higher than before being dredged. The water would be anaerobic; the sediments would contain mercury and organic matter at temperatures where anaerobic bacteria are well known to create methylmercury. It would be passed into the air and into living organisms including ourselves. Would not the plan increase the health problem caused by mercury in the Bay?

3 MF "Expert" testimony was given at the same meeting that Bellingham Bay has "healed itself" by covering mercury contaminated sediments including those in the Whatcom Waterway with up to 6 feet of sterile sediments. Why does the Whatcom Waterway need to be dredged when it will never be deep enough for large ships, and as industries that could have used the waterway already have left the city?

(over)

Continental Plate Edge, Subduction, and Tsunamis

I am concerned that danger from a tsunami had not been considered at the Ecology meeting 7/20/02.

4 In detail, smaller pieces of the Pacific plate dive under the North American continent from California to Vancouver Island. The piece diving under us is called the Juan de Fuca plate, and the zone where it dives is called a subduction zone. The edge of the North American plate where the Juan de Fuca plate begins to dive is offshore. Hence, when there is movement between the two plates, a submarine earthquake results. Geological evidence indicates that the two plates remain stuck together for a time, and then move generating a great submarine earthquake and a tsunami.

EMA The term tsunami is of Japanese origin and began to be introduced to American English about the middle of the 20th century after the distinction between wind-generated waves and those caused by submarine earthquakes became better understood. Tsunamis steepen and increase in height as they enter shallow water. Waves on the order of 30 feet high are common; waves 60 feet high have been recorded.

David Engebretson, professor of geology at Western Washington, warned in a Herald article on 11/7/89 that, "It is almost certain that a great earthquake – on the magnitude of 8.0 or more – will occur in this region". He added that, "Great earthquakes occurred in this region 300, 1000, 1600, 1700, 1700, 3100 and 3400 years ago . . . As it has been 300 years since the last earthquake, we are due another anytime". Science News in 2/27/90 said that Brian Swater, of the U.S. Geological Survey, had found evidence of several tsunamis in coastal sediments of this region.

Response to Mr. Albert J. Hanners

- 1) Based upon anticipated site conditions, generation of large amounts of methyl and di-methyl mercury (organo-mercury) are not predicted. This is because the vast majority of the mercury will not be chemically available for bacteria to convert it to organo-mercury. This is due mainly to two conditions expected to exist simultaneously: a) anoxic (low /no-oxygen) conditions and b) high sulfide content (found in Bellingham Bay marine sediments). Although methyl and di-methyl mercury formation is indeed normally expedited under anoxic conditions, the presence of sulfides within the anaerobic environment binds the vast majority of mercury. This renders the mercury virtually unavailable for anaerobic bacteria to transform it into methyl or di-methyl mercury. The presence of chloride ions (Cl-) from the sea salt (NaCl) also reduces the availability of mercury for transformation to organo-mercury. Warmer (upland) site conditions should not affect the binding effects of the sulfides. Also see response #5 to (Johnson and Tolchin).
- 2) See response #7 to (Johnson and Tolchin).
- 3) The most recent data from the site shows exceedences of state standards of mercury for human health and marine organisms. Also see response #3 (Johnson and Tolchin).
- 4) Comment noted. See response #2 (Williams) and #9 (Johnson and Tolchin).



Nooksack Indian Tribe Natural Resources Department

3891 Uluquance Drive • P. O. Box 157 • Deming, WA 98244
(360) 592-2632 • Fax (360) 592-5753

April 24, 2001

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APR 24 2002
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BELLINGHAM FIELD OFFICE

Department of Ecology
Attn. Lucy McInerney
3190 160th Ave. SE
Bellevue, WA 98008-5452

RE: Comments on the supplemental EIS

Dear Lucy:

1 Nearly all of the comments that were delivered to Christine Corrigan on or about September 21, 1999 concerning the first EIS are still not addressed in the supplemental EIS. Specifically we need to get binding agreements for the various commitments. "The ability of the pilot staff to quantify the benefits and risks appear in part limited by deficiencies in the current data sets and studies" is still accurate because the biological characteristics and the use and impact to of listed Chinook, bull trout and other treaty resources are still unknown. The quantification of the benefits for bull trout and Chinook salmon that the near term alternatives should provide has not occurred.

2 The concept of hydraulic dredging in the Whatcom Waterway and reducing the number of times that dredge spoils need to be handled is timely. The use of the dredge will most likely reduce the needs for other measures to reduce the impacts of short term water quality departures. The potential entrainment of organisms is an undocumented concern and does not appear to be discussed in the text. Additionally the amount of water that is necessary for a dredge to operate and transport the material to the ASB may alter the standing crop of planktonic organisms that are present in the waterway. Another issue is the capacity of the ASB and the water return system adequate to insure that the filtered water that is returned is free of contaminates? Do mobile organisms like Dungeness Crab have any problems avoiding being dredged?

3
4
5 Habitat disturbance is of concern in that production of benthic and epibenthic organisms may not return to reasonable levels for several years; this may not be acceptable to listed species if all the work was accomplished at one time. Sequencing may be a real need for forage production in the area and should be investigated. The salmon migration enhancement corridors need further investigation because the effectiveness has not been well documented and the substrate configuration may be the determining factor. While it is conceptually a good idea to recreate the habitat elevations that were lost with the near shore fills like construction of the marina and the ASB it is equally important to realize that this historic habitat was a large eelgrass meadow (+200 acres). It might be necessary to construct the enhancement corridors prior to the dredging activities so that the whole area is not in the initial stages of recovery from disturbance.

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- 6 In table 2 of the SEIS the magnitude of the fish habitat improvement is clearly much larger in the preferred alt. (35 acres) verses the modified alt. (6acres). The adequacy of this amount as mitigation has not been evaluated, and needs to be.
- On page 8 of the supplemental EIS some one thinks that minimizing eelgrass impacts is a form of mitigation; this is not correct. It simply reduces the amount that need to be mitigated for.
- 7 The short term disruption to tribal fishing can not be evaluated without the operational windows that the proponents choose to use. The SEIS indicates a 2-5 month dredge window which would preclude some tribal fishing. The months need to be stated so impacts can be evaluated
- 8 The proposed Restricted Navigational Areas (RNA) will cause tribal fishers to move their operations to other areas. In fact some who want to fish in protected areas may stop fishing altogether. The truncation of this reserved right is unacceptable and needs to be minimized. The loss of fishing area and opportunity needs extensive investigation to determine its necessity. It appears that nearly 60 acres are involved and given the amount of encroachment that has already occurred it may be time to remove some of the near shore fills.

Thank you for the opportunity to comment again.

Sincerely,


Robert Kelly

Director of Nooksack Natural Resources

Response to Mr. Robert Kelly (Nooksack Natural Resources)

- 1) While inclusion of supplemental site information may be beneficial, expenditures of additional resources and/or time does not appear justified at this stage. Ecology believes sufficient data exist with which to make adequate assessments of the habitat enhancement benefits/risks. It should be noted, however, that the Bellingham Bay Habitat committee is currently establishing recommendations for a future baseline habitat assessment as well as a habitat monitoring program
- 2) Comment noted. Relative to the volume of water within the Whatcom Waterway, the volume utilized for dredging is minor. In addition, waterway recruitment of phyto and zooplankton biomass is anticipated within days of dredging completion.
- 3) The ASB and water returned to the Bay will need to comply with the NPDES permit issued to Georgia Pacific.
- 4) Loss of biomass due to the potential entrapment of mobile species is expected to be minimal, but will be evaluated for hydraulic dredging activities.
- 5) The feasibility and practicality of dredge sequencing will be evaluated and/or discussed in the **cleanup action plan**. Comment noted.
- 6) It is not clear from the comment what is meant by “adequacy” of this amount of mitigation. Comment noted.
- 7) Comment noted.
- 8) Comment noted.



23 April, 2002

Lucy McInerney, P.E.
Washington Department of Ecology
Northwest Regional Office
3190 160th Avenue SE
Bellevue, WA 98008

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BELLINGHAM FIELD OFFICE

Dear Ms McInerney:

I have reviewed the Bellingham Bay Comprehensive Strategy Draft Supplemental Environmental Impact Statement and Supplemental Draft Feasibility Study and offer the following comments:

To start, I would like to commend Georgia Pacific and the Pilot Team for re-thinking disposal options and offering up a creative new alternative for consideration. As well, I am pleased that out-of-water disposal is now being taken seriously. We have long maintained that if dredging was to occur in the bay, then the contaminated material should be removed from our bay, rather than leaving it in an aquatic environment, with the inherent uncertainties that this environment offers. As well, we are pleased to see that Georgia Pacific is willing to take responsibility for its pollutants and that the Pilot Team is no longer looking to transfer liability for these contaminants from the private corporation that discharged them to the public.

1 We are also pleased that the use of hydraulic dredges is being considered. The use of this technology should substantially reduce the risk of re-suspension of contaminants during dredge operations. The SEIS provides a rather thorough discussion of the merits of various dredge options and seems to choose hydraulic dredging as the best option in this circumstance. While the SEIS states that the new preferred alternative would make the use of this technology possible, I do not recall any commitment being made to the use of this technology. We would like to encourage the Department of Ecology to commit to the use of hydraulic dredging in this project.

2 As with the original Environmental Impact Statement, we do have some concerns that this SEIS is not assessing a clearly presented project and that too much detail has been left to a later date.

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As with the previous environmental review, there are many questions that arise upon reading this document as many important issues have been left until the engineering phase of the project. I am leery of project proponents who answer questions with the statement: "we'll develop that during engineering." One small example appears in Table 2, the Summary of Integrated Near-Term Remedial Action Alternatives. The discussion of the GP ASB under the Modified Preferred Remedial Action Alternative is presented as: "Cap/Habitat Corridor(?)." What do these question marks mean? Is the proponent unsure as to whether a habitat corridor will be designed into this site? If there are outstanding questions about such a corridor, they should have been answered in this SEIS, as that is what EIS documents are for.

This lack of information is especially pertinent to the discussion of the ASB disposal facility and its design. On page 29 of the Supplemental Feasibility Study, there is a small amount of discussion of how the facility would be designed. As seems to be the case throughout these documents, the entire one paragraph discussion ends with the statement: "Details of the ASB facility would be developed during remedial design." This study and the SEIS were ostensibly developed to discuss the details and impacts of this very option and yet all of the important information about the alternative and its design has been left to a later date. This is a serious flaw and may prove these documents inadequate under SEPA.

Methylization

Our primary concern with ASB disposal of sediments is that of methylization of mercury. Research of mercury in landfills shows that methylization is almost a certainty in these anaerobic environments. Our research has shown that there are no technologies available that can cost effectively capture emissions of methylmercury to the air from a landfill setting. It appears that the only option available for ensuring there are no airborne emissions is to keep the contaminated materials under water. How much water? Will the site be perpetually saturated? To what level? Will this impact G.P.'s ability to use the site for other purposes? If so will the property be permanently encumbered so that it can not be used for any purpose that may be incompatible with its primary use of a disposal facility for contaminated sediments? There is little information about these issues in the SEIS nor in the Supplemental Feasibility Study. Given that all of the details needed to make an informed decision are left to the remedial design phase, we must ask: how much does the Pilot team really know about this approach? Can the Pilot Team and GP guarantee that the community that surrounds this site will not be exposed to airborne methylmercury? Will there be monitoring done to ensure that the cap project is working and that there are no emissions?

Cornwall Avenue

6 The new disposal alternative will alter how the Cornwall Avenue landfill is remediated. There is scarcely any discussion of this aspect of the project in the SEIS or the feasibility study. The SEIS states that the landfill will be capped with 1-3 feet of clean material, but there is no discussion about how the shoreline will be armored so that the cap does not wear away under wave action. Nor does the SEIS discuss issues of groundwater infiltration or seepage discharges. There also seems to be an assumption that all seepages from this site will contain very low levels of contaminants. As the seep of pentachlorophenol in February 2000 showed us, discharges from this site are not predictable nor are they necessarily low level. From conversations with agency staff and from observing the response to that incident, it is evident that the agencies do not have a firm idea of exactly what may be buried at that site – a landfill that was never properly closed and remediated. Now, the only remediation proposed is a shoreline cap. All detail is again left for remedial design, which occurs after the decisions have been made and the public can no longer have meaningful input into the project.

Long-Term Site Use and Liability

7 As discussed above, we have questions about the long-term use of this site and the liability for the contaminants contained therein. We recognize that GP will have the long term liability to maintain this site, but ask whether this liability is complete or whether the public bears some liability for disposal at this site.

8 As well, as discussed above, we wonder whether the uplands that are created at the ASB site will be legally encumbered so that the site cannot be used for an incompatible purpose sometime in the future. Page 22 of the SEIS states that the ASB CDF would be designed to allow for future upland development of this site. Page 28 discussed the relative acceptable levels of mercury in upland soils and concludes that there would be no need for future restrictions. However, if the sediments must be kept saturated to avoid methylation, then future development may require piles for stability (certainly a traditional building foundation would not be feasible). Activities such as driving piles and other construction techniques may be incompatible with the primary use of this site as they may disturb the cap integrity and create pathways for contaminants to be released into the environment. It is probable that building on this site would be incompatible and that it should be managed simply as a disposal facility.

9 We are also curious about whether there are Shoreline Management Act considerations in siting this disposal facility. We recognize that the ASB is an existing facility, but this is a substantially different use than that for which it was originally constructed.

Public Access

I note that the presentation of public access under the various alternatives, also presented in Table 2, seems to change under the new preferred alternative. I wonder why there are no public access options under this alternative? Under the old Preferred Alternative, there was to be a gain in access, at Cornwall and the head of the Whatcom Waterway. Is Table 2 perhaps in error? On page 16, for example, the text states that habitat at the head of the waterway would be protected while accommodating public access. There does not appear, however, to be much discussion of public access provisions for the Cornwall site. Is the new alternative for this site incompatible with public access or was this simply overlooked in the preparation of this SEIS?

Marine Mammals


Page 38 of the SEIS states that cap designs would need to consider bioturbation/exposure by foraging whales that occasionally visit our bay. This statement seems to say that it is perfectly possible to engineer such a facility. I doubt that the Pilot Team nor their engineers have an understanding of how to design a cap to withstand disturbance by a bottom feeding whale. If this is a mistaken assumption, then the provision of references on cases where this has been successfully achieved should be included in the Final EIS.

Adequacy of the Remainder of the ASB

Has sufficient analysis been done to assure that the remaining 8 acres of the ASB will be adequate to treat the effluent coming from the mill, not only during construction, but over time? This question is especially appropriate given that this alternative proposes to decant contaminated water from the sediment dumped into the ASB as it settles.

Thank you for this opportunity to comment on these documents. We look forward to seeing some of the issues raised in this letter, and in other public comments, addressed in the final Environmental Impact Statement and Feasibility Study.

Sincerely,


Robyn J. du Pré
North Sound BayKeeper

Response to Robyn du Pré (North Sound Bay Keeper)

- 1) Comment noted. See response #1 (Williams). Although it appears that hydraulic dredging may be a desirable option because of the advantages you stated, as well as others, Ecology can not commit to its use until a full evaluation of this dredging option has been performed. This would be accomplished during the development of the **cleanup action plan**.
- 2) Comment noted. Also see response to comment 4 below.
- 3) Based on the Pilot Team's evaluation to date, it appears likely that an integrated sediment cleanup cap and intertidal habitat restoration corridor could be constructed in the nearshore area immediately adjacent to the ASB. However, if this alternative were selected, more detailed evaluation of the habitat potential will be required in order to maximize the overall habitat goals of the Pilot.
- 4) Many questions can only be answered during the design development and detailed engineering phase of the project. More certainty with respect to specific design details, protectiveness, and implementability of the selected remedy will be obtained during the development of the **cleanup action plan** and, later, the **engineering design report**. Both of these documents will be made available for public review and comment. It is neither appropriate nor cost effective to bring every alternative forward in order to provide the detailed level of design and engineering evaluation being sought by the commenter. The alternatives selection process is used to screen alternatives based upon likelihood of success in meeting all of the objectives of the Pilot within the bounds of practicality. Some outstanding questions remain within each alternative. However, selection of a preferred alternative will be based on Ecology's confidence in the desired outcome, recognizing that the present uncertainty surrounding certain aspects of the alternatives will need to be addressed during the design phase to ensure the success of the remedy. Ecology will only approve of a final remedial design that has been determined through detailed evaluations to be protective.
- 5) It is the goal of the ASB alternative to engineer the disposal facility in such a manner as to maintain an anoxic environment with the inclusion of marine waters. The specifics of this will be addressed in the **cleanup action plan** and **engineering design report**. In addition, the anticipated proposal would include monitoring of air emissions with associated action plans for reducing any mercury emissions should exceedences occur either short- or long-term. These could include both physical and chemical barriers to reduce or prevent mercury emissions. See also response #1 (Hanners) and response #7 (Johnson and Tolchin).

The upland site use of the property will be dependant on a number of factors, including a range of geological, environmental and political issues. It is not anticipated, however, that mercury vapor concentrations will restrict GPs industrial use of this property, as allowed under current zoning and other regulations.

- 6) The remedial alternative for Cornwall Ave. Landfill has not yet been determined. Upland groundwater flows resulting in sediment seeps are currently being monitored for degree and extent of contamination. Remedial alternatives for these sources are currently being investigated. Once upland source control has been fully realized, based upon current sediment information, capping to approximately 1-3 feet appears to be the most viable alternative, but sediment cleanup will not be undertaken until recontamination potential has been addressed. If a cap is the sediment alternative chosen, cap stability will be addressed. Cap stability is primarily a geotechnical engineering design issue; however, if cap stability is determined to not be achievable at the 30 percent design phase, another viable alternative can be chosen, from those remaining. It should be noted that cap stability/armoring has been accomplished at other sites and have most often included habitat enhancement components. This would be the goal at the Cornwall site as well if capping is selected.
- 7) This question is beyond the scope of the SEIS or RI/FS. The legal interpretation of liability should be addressed with the State Attorney General's Office. However, the employment of restrictive covenants and/or institutional controls will be evaluated. It should also be noted when discussing site use issues that the property is owned by Georgia-Pacific Corporation. Also see response # 3 and 5 (Johnson and Tolchin).
- 8) If saturation of the lower contaminated layers of the ASB is deemed necessary to prevent methylation of mercury, the presumption that the stability of the upland portion of the ASB will be compromised is speculative. Soil/sediment concentrations to be confined within the ASB under this alternative would be below MTCA direct soil contact criteria for unrestricted land uses. The upland uses will also not necessarily require construction necessitating the use of pilings. Even if pilings are determined necessary for construction stabilization, it is estimated that very low if any human health risk would exist from pile placement, even to those working directly at the site. Monitoring would be initiated to verify these assumptions.
- 9) The existing Bellingham Shoreline Master Program (BSMP) designates the ASB shoreline as "Urban Maritime Environment." This limits the type of development to those uses that require proximity to navigable waters, i.e. water-dependent, water-related. A distinction is made in the BSMP between "upland" and "over-water" uses. In this instance, the ASB is

considered to be upland as it was legally converted to a landlocked lagoon or pond and is not a “shoreline of the state.” Utilizing the ASB as a disposal facility is therefore in accordance with the SMP.

- 10) As discussed in Section 3.3 of the Draft Supplemental EIS, potential impacts and opportunities for public access would be the same under the preferred and modified preferred alternatives. There are also additional opportunities for public access in the ASB area that would be explored during remedial design, should this alternative be selected. Also, as discussed above, the Whatcom Waterway documents do not explicitly address the Cornwall Avenue Landfill Site, and a remedial alternative for this site has not been selected by Ecology.
- 11) Comment noted.
- 12) This issue is being evaluated. Currently, however, based upon flow volumes and anticipated concentration, the remaining area is expected to be more than sufficient for treatment of the remaining effluent both during the dewatering process and the normal mill process water. The details of this will become more certain as additional data is collected on sediment leachability as well as engineering and design of the facility.



PORT OF BELLINGHAM
Washington State

April 24, 2002

Lucy McInerney, Site Manager
Department of Ecology
Northwest Regional Office
3190 – 160th Avenue S.E.
Bellevue, Washington 98008

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RE: Draft Supplemental Feasibility Study for the Whatcom Waterway Site
Draft Supplemental EIS for Bellingham Bay

Dear Ms. McInerney:

The Port of Bellingham is pleased to comment on the proposed substitution of the "Georgia Pacific Lagoon" as the preferred alternative for sediment disposal in Bellingham Bay. From the onset of this unique pilot program for urban embayment cleanups, the participating parties have worked to develop a comprehensive strategy that took numerous factors into consideration. Those factors included the disposition of contaminated sediments, sources of pollution, habitat restoration, and inwater and shoreline land use from a bay-wide perspective. It is within the context of considering a comprehensive strategy which functions to accommodate these considerations that the following comments are made.

Specifically, the baywide pilot goals regarding social and cultural uses, resource management, and economic vitality require an understanding of the long term use of proposed solutions. The current preferred alternative (a confined aquatic disposal as described in the October 2000 FEIS) has been evaluated with these and the other pilot goals in mind. It was selected because it best met these goals.

1 It is difficult to assess the viability of the substitute disposal site as proposed without the benefit of clearly understanding the long term use of the lagoon after it is filled. Because of the unique nature of the lagoon facility, there are alternate marine (water dependent) uses for that structure, such as a small boat marina, that need to be taken into account in the context of the long term strategy for the bay, including site cleanup, habitat, and community shoreline land use. Without this clear understanding of the long term use of the filled property, it is also unclear whether or not the fill would meet the local shoreline requirements for a water dependent use for the "created property." Additionally, there needs to be

Lucy McInerney, Site Manager
Department of Ecology
April 24, 2002
Page 2

- 2 a review of habitat recommendations in and around the Bellingham Shipping Terminal, Cornwall site, Georgia-Pacific Lagoon, and the I & J Waterway to ensure those habitat recommendations are compatible with future land use.

The October 2000 preferred alternative was to be implemented because of beneficial improvements to publicly controlled property and its use as the "cleanup site" for Bellingham Bay. This was memorialized in an agreement among the potentially liable parties. It appears the substitute disposal site will be largely in the control of a private party. At this point, it is unclear as to how the public PLPs (i.e., Port, City, DNR) and the community would benefit from its creation in terms of access, disposal cost, and future land use.

- 3 The long term proposed use of the proposed sediment disposal site after it is filled, the absence of an understanding of the care and custody of the site, and the subsequent access to it by PLPs cleaning up other sites throughout Bellingham Bay are of critical concern to the local community. In the interest of the cooperative partnership between Ecology and the local community that has been so rewarding under the Pilot, we ask that you not make a decision on
4 abandoning the preferred alternative until these issues are further resolved. We certainly appreciate the need to get on with the cleanup; however, these are critical issues.

We thank you for your consideration in this matter and look forward to further discussions.

Sincerely,



James S. Darling
Executive Director

cc: Commissioner Doug Sutherland (DNR)
Honorable Mayor Mark Asmundson (City of Bellingham)
Jim Cunningham (General Manager, Georgia-Pacific West)

Response to Mr. James Darling (Executive Director; Port of Bellingham)

- 1) Comment noted. Local shoreline requirement issues will be addressed prior to selection of the final alternative.
- 2) Comment noted.
- 3) Comment noted (land use) See response # 3, Johnson and Tolchin. It should also be noted that the ASB property is owned by Georgia-Pacific.
- 4) Comment noted.

McInerney, Lucy

From: Stefan Freelan [Stefan.Freelan@wwu.edu]
Sent: Thursday, April 18, 2002 5:06 PM
To: McInerney, Lucy
Subject: BBDDP data comments

I have had the opportunity over the last few weeks to review much of the data and reports associated with the Bellingham Bay Demonstration Project (GIS/CAD files from Anchor, as well as the FEIS, the Supp. EIS, the Supp. Feasibility Study, and the Final Data Compilation and Analysis). My specialty is not in water or sediment quality, but in GIS. As such I am writing to comment on the data compilation and generation aspects of the project.

1 Having obtained copies of much of both the original data (as compiled by Anchor Environmental) and the resulting Anchor-generated files, what is most striking to me is that there appears to be a dramatic information-loss in the process. What seems to have occurred is that Anchor compiled a large amount of GIS data from a number of GIS agencies, processed this data into a common CAD format, and returned CAD files. One of the primary differences between GIS and CAD data is the lack of attributes associated with the CAD files.

For an example, the SED-QUAL data, which began as an Access Point database file, is easily brought into a GIS, complete with sample date, chemical name, concentration, etc (in short a full database, complete with spatial location). The CAD sample file returned by Anchor includes but one or two attributes (mainly location and sample site) - with absolutely no date/chemical/quantity data at all.

2 Or for example, the maps of Pandalid Shrimp in the Final Data Compilation and Analysis, refer to densities of < 500, 500-1000, or > 1000 (or for Crab < 50, 50-100 and > 100). The data layers likewise contain these same categories. What is missing is the density units: 500 shrimp per what? Square mile? Hectare? Surely this information was know at some point, but in looking at the maps, the accompanying narrative, the data or the metadata I was unable to determine the units involved. Again, what I see is a gathering of data for a specific purpose, with a subsequent loss of the data for future uses.

I realize that Anchor is an engineering firm and choose to use CAD as their primary software for spatial analysis. I am also aware that in many aspect a CAD program is superior to a GIS in terms of the types of area and volumetric calculations that such a project requires. None-the-less, the data started out with considerable attribute information attached, and came back as little more than pretty pictures. I believe it goes without saying that since the data came from agencies using GIS, they would be more able to make use of data similarly returned in a GIS format.

The implication for future analysis is that much of Anchor's work will have to be redone, should we ever wish to revisit these issues in the future. As a taxpayer I feel that public has not been well represented in terms of data integrity for long-term analysis. If Anchor absolutely requires data in a CAD format, fine, but the final files (and related metadata) should then include the full original GIS data as well as the CAD files used to perform both analysis and graphics creation.

I am not questioning the actual analysis performed by Anchor (in fact, I have found very little discussion on their analysis at all, so it would be difficult to question even were I qualified to do so), but I feel strongly that such projects should be contracted and performed in such a manner as to further not just the immediate need for report graphics, but the longer term, ongoing needs of resource managers and monitors.

3 I was also disappointed in the amount and quality (or lack there-of) of Metadata that appears to have been provided. Again, from the standpoint of third-party review as well as ongoing research, not having detailed metadata on both the data layers created by Anchor and those compiled (preferably in their pre-CAD data-rich format) will needlessly handicap future analysis.

My hope is that while the data and project is still on the desks and minds of Anchor and

the rest of the agencies involved, that some of these apparent shortcomings of the final data might be rectified so that the investment in time and money made to date might be better preserved for the future.

thank you for your time,

Stefan Freelan
GIS Specialist
Dept. of Environmental Studies
Huxley College, Western Washington University
stefan@cc.wvu.edu
360-650-2949

Response to Mr. Stefan Freelan.

- 1) There has been some screening of data during the data evaluation and analysis process. Much of the decision-making concerning this data reduction step was performed based upon preliminary analysis of data, the purpose of which was to identify which chemicals were driving threats to human health and the environment. This was performed in order to clearly identify those contaminants and their locations that would be further investigated for potential cleanup. The Sed-Qual database is the official repository for sediment data collected in Washington state and is independently reviewed for appropriateness of application by Ecology. Although it may appear that data were “lost” through this process, certain analytical steps are transparent to the end-user, but are nonetheless accurate in their presentation in the final map coverages.
- 2) The Pandalid Shrimp density data units should read in units of numbers of shrimp per hectare, which was inadvertently left off in the Data Compilation Report and associated GIS layers. These data were presented to provide a general description of relative differences in abundance within the Bay, which may help inform decision-making in the Bay.
- 3) Most if not all of the sediment contaminant data utilized by Anchor is contained in the SED-QUAL database or will be available when submitted. Other data can or will be made available in non-CAD format for GIS interpretation. All raw data was not included to provide report efficiency and conciseness. Should public data sets be desired for additional independent analysis, every effort will be made to honor these requests.