

## Kenny, Ann

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**From:** Kenny, Ann  
**Sent:** Thursday, February 08, 2001 11:41 AM  
**To:** 'Andrea Grad'  
**Cc:** Marchioro, Joan (ATG); Hellwig, Raymond; LaVassar, Jerald; Johnson, Doug; Fitzpatrick, Kevin  
**Subject:** Response to your e-mails of February 1 and February 5, 2001



**MSEwall.doc**  
**(16 KB)**

Dear Mr. Eglick, Mr. Stock and Ms. Grad:

The purpose of this e-mail is to provide you with a response to several recent e-mail PDA requests, each of which is identified below.

1. E-mails of February 1 and February 5, 2001 Andrea Grad regarding a PDA request for documents reviewed per Chapter 173-175 WAC (Dam Safety issues):

As you stated in your e-mail of February 5, 2001, you will be receiving information from Mr. Jerald LaVassar of Ecology's Dam Safety Office regarding ISW Lagoon #3. This is the only facility that has been reviewed by Ecology under Chapter 173-175 WAC. Based on our review of the Port of Seattle's project, to date, it appears that there are only two proposed stormwater facilities that may require review under Chapter 173-175 WAC. These are the 25.5 acre-foot pond associated with SDW1A and the 37.91 acre-foot pond associated with SDW1B. Ecology's Dam Safety Office has determined that the MSE wall will not require a Dam Safety permit.

Ecology will recommend to the Port of Seattle that they begin consultation with the Dam Safety Office concerning the design of the two proposed stormwater facilities identified above to determine if they fall under the provisions of Chapter 173-175 WAC.

Stormwater impacts related to construction of these facilities would be covered under the Port's NPDES permit.

The 401 permit, if one is issued, would require the Port to obtain the necessary Dam Safety permits, if required, prior to commencement of construction of the stormwater ponds.

2. E-mail of February 5, 2001 sent by Andrea Grad and signed by Peter Eglick and Kevin Stock where you request clarification on Ecology's role in reviewing the MSE wall:

As stated above, Ecology's Dam Safety Office has determined that the MSE wall does not require a Dam Safety permit. Therefore, Ecology has no direct regulatory authority over the design of the MSE wall for purposes of structural integrity. The attached document indicates that Ecology has reviewed conceptual drawings of the wall and has reviewed the design process for the wall. Given that review, Ecology believes that the Port is using a credible process for designing the wall. In the 401 process, Ecology will review the general design and footprint of the wall to determine impacts to water quality, baseflow and wetlands and address any concerns in the 401 water quality certification.

If Ecology determines that the information it has on file regarding the MSE wall is not sufficient, Ecology will ask the Port to submit additional information.

**AR 031714**

If you have further questions regarding these matters please call or write.

Ann E. Kenny, Senior Environmental Specialist  
Department of Ecology  
3190 160th Ave. SE  
Bellevue, WA 98008-5452  
Phone: 425-649-4310  
Fax: 425-649-7098

## MEMORANDUM

March 6, 2002

TO: Tom Luster

FROM: Jerald LaVassar, M.S., P.E.

SUBJECT: Evaluation of Retaining Wall/Slope Alternatives to Reduce Impacts to Miller Creek, Embankment Station 174+00 to 186+00

You have asked that I review the above named report for the Third Runway at Sea-Tac International Airport. In particular, you were concerned that adverse foundation conditions might be encountered during construction that would prompt a request to disturb additional wetlands from those mapped in this proposal. You wished my opinion whether construction techniques existed to deal with such unanticipated foundation conditions and still restrict the disturbed area to the current proposed footprint. The short answer is yes, there are such techniques. These techniques generally are expensive and typically require a specialty contractor.

My foregoing comments are based on limited site specific data. The report did not provide detailed logs of the foundation explorations along the wall alignment. I am relying on the Site Description section of the report on page 1-1 where it notes the presence of "*very dense glacially overridden soils at depths on the order of 10 to 30 feet.*" Clearly, the considerable height of the wall dictates that it be founded on a dense, unyielding foundation or a structural fill that spans between such a stratum and the base of the wall. Obviously, a conventional sloped excavation 30 feet or more in depth likely would extend the area of wetlands disturbance beyond the permitted footprint. Thus, it could prove necessary to provide a near vertical wall for the creek side of the excavation. The schemes to do this include tied-back walls, a row of bored piles, soil nailing, even ground freezing as possible alternatives. Certainly, these schemes carry a substantial cost, but they should allow the construction to comply with the proposed restrictions on the extent of disturbed wetlands. All parties should recognize that the cost per foot of treated wall may be high but, the length of the wall foundation where such measures may be necessary is likely to be only a small fraction of the wall's length.

AR 031716

In general, I believe the project proponents have proposed a suitable conceptual level scheme to construct a mechanically stabilized earth wall. The individuals identified to conduct subsequent static and dynamic analysis of the wall and of the detailing of the stabilization system are acknowledged experts in their respective fields. Thus, there is every reason to assume that the construction plans will comply with good engineering practice. None the less, the steps noted in the peer review comments of Shannon & Wilson, Inc. on the mechanically stabilized earth wall are prudent and I hope incorporated in the design and construction. All parties should recognize that a wall of this height is rare. Thus, the inclusion of various monitoring devices in the wall and backfill would provide valuable confirmation that the wall is deflecting and performing in the manner anticipated by the designers both during construction and over a long and protracted service life.

If you have any further questions, please do not hesitate to contact me.

JL:jl

**AR 031717**