

**From:** [David Jellum](#)  
**To:** [PDS Planning Commission](#)  
**Subject:** Tsunami Hazard Code Review  
**Date:** Thursday, March 17, 2016 9:31:06 AM  
**Attachments:** [staff-awiser-email-correspondence \(dragged\).pdf](#)

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Hello Cliff Strong -

It is my understanding that the County may consider revising the tsunami portion of the critical area code to allow prescriptive recommendations for development in tsunami inundation zones.

I have reviewed an email drafted by Andy Wiser dated 2-5-2015 (attached) and I do not agree with his assessment that 'all recommendations currently being prepared by local consultants are generically developed in accordance with DNR Tsunami Inundation Maps.'

I have successfully conducted approximately 20 tsunami evaluations in the Sandy Point area and all have been based upon site specific investigations. One needs to consider the subsurface conditions in addition to the potential inundation depth, flow velocity and debris impact in order to provide recommendations for a suitable foundation design that can resist these forces as well as scouring.

Many of the sites in the Sandy Point area have been overlain by fill of variable thickness and composition. It is important to identify the thickness of the fill, depth to native soil, and the type of native soil to assess erosion/scour risk as well as provide the subsurface soil information needed by the project structural engineer for an appropriate foundation design.

Prescriptive recommendations for this type of assessment without a subsurface investigation may significantly increase the risk of costly design changes and delays to the project schedule if unanticipated subsurface conditions are encountered during construction. It may also limit design options or add unnecessary costs.

It is my opinion that site specific investigations conducted by qualified geotechnical consultants should continue for development in tsunami inundation zones for these reasons.

Thank you for your consideration.

Best Regards,



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David Jellum, LEG  
*Licensed Engineering Geologist*



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## Jessi Roberts

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**From:** Andrew Wiser  
**Sent:** Thursday, February 05, 2015 9:34 AM  
**To:** John Thompson; Dan McShane  
**Cc:** Cliff Strong  
**Subject:** Addt. Code Considerations

I conjured up a couple more insights for potential code revisions following our meeting yesterday.

1. Conservation Easements and mitigation plans-
  - a. WCC 16.16.260 allows the development of mitigation plans to minimize the risk of geologic hazards and protect other critical areas.
  - b. WCC 16.16.260.C.3 directs permanent protection of mitigation areas via WCC 16.16.265
  - c. 265.C is the only section that describes conservation easements, but is specifically reserved for tracts.
  - d. I would like the ability to protect mitigation areas in some sort of easement when required for life safety.
  
2. Tsunami Inundation
  - a. All recommendations currently being prepared by local consultants are generically developed in accordance with DNR Tsunami Inundation Maps.
  - b. It would be very easy to prescribe the same recommendation as a requirement of natural resources permit review, and I've already discussed with Royce the possibility of developing a liability waiver for situations where an applicant would like to adopt county-prescribed tsunami inundation mitigation design. This is an approach already employed on alluvial fans in British Columbia.
  - c. I have been reluctant to develop this approach further and believe it only makes sense to do so if supported by code.
  - d. Similarly, the code update may also want to prescribe inundation requirements for all low-lying property in Whatcom County, much of which is not currently addressed by the DNR models but is certainly susceptible.

Thanks-

*Andy Wiser, L.E.G.*

Geohazard Specialist, Planner

Whatcom County Planning and Development Services

[awiser@whatcomcounty.us](mailto:awiser@whatcomcounty.us)

360.676.6907, ext. 50274

**From:** [Andrew Wiser](#)  
**To:** [David Jellum](#)  
**Cc:** [PDS Planning Commission](#); [PDS Planning Commission](#); [Mark Personius](#)  
**Subject:** RE: Tsunami Hazard Code Review  
**Date:** Thursday, March 17, 2016 11:35:22 AM

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Hi David,

Thank you for your comments regarding proposed tsunami regulation amendments. The language you referenced was a preliminary discussion point and, ultimately, a prescriptive approach was not proposed for incorporation in the revised critical areas ordinance. Subsequent to my consideration of a prescriptive approach I discovered that the Washington State Department of Natural Resources is in the process of revising their tsunami inundation model based on a larger magnitude seismic event. Generally speaking the current model is based on a seismic event with a 10 percent chance of recurrence in the next 50 years (recurrence of ~475 years). The new model reflects a better understanding of a seismic event with a 2 percent chance of recurrence in the next 50 years (recurrence of ~2475). My understanding is that preliminary results show an additional 5 feet of tsunami inundation. As you are aware, inundation depth based on current modeling in Sandy Point range from approximately 1 to 4 feet depending on location and existing ground surface elevation. It is my opinion that a prescriptive approach would be insufficient to mitigate for additional inundation of up to 6 to 8 feet and the associated increased water velocity.

Whether or not County regulations should apply to less frequent, higher magnitude seismic events is a separation discussion that is certainly worth having, specifically in the context of risk tolerance. Based on the results of such a discussion I still believe that a prescriptive approach may be appropriate as it would give County residents a predictable, cost-effective solution to achieve tsunami hazard mitigation, at least in consideration of a lesser magnitude, increased frequency seismic event and resulting tsunami. I'm available, and would greatly appreciate, the opportunity to discuss these issues in greater detail at your convenience.

Sincerely,  
*Andy Wiser, L.E.G.*  
Geohazard Specialist, Planner  
Whatcom County Planning and Development Services  
[awiser@whatcomcounty.us](mailto:awiser@whatcomcounty.us)  
360.778.5945

**From:** David Jellum [mailto:soundgeology@gmail.com]  
**Sent:** Thursday, March 17, 2016 8:46 AM  
**To:** Cliff Strong  
**Cc:** Andrew Wiser  
**Subject:** Re: Tsunami Hazard Code Review

Hi Cliff -

Thank you for sharing my comments with your team. I appreciate the hard work and

dedication to help benefit our community.

David

On Wed, Mar 16, 2016 at 4:45 PM, Cliff Strong <[CStrong@co.whatcom.wa.us](mailto:CStrong@co.whatcom.wa.us)> wrote:  
Thanks, David, I'll pass this on to Andy, on whom I rely for geohazard advice. Also, if you want these comments to appear in the Planning Commission's official record, please send them to [PDS\\_Planning\\_Commission@co.whatcom.wa.us](mailto:PDS_Planning_Commission@co.whatcom.wa.us), or come to the meeting next week and provide 9 copies.

Thanks,

**Cliff Strong**

Senior Planner

Whatcom County Planning & Development Services

[cstrong@co.whatcom.wa.us](mailto:cstrong@co.whatcom.wa.us)

[360.778.5942](tel:360.778.5942)

[www.co.whatcom.wa.us/pds](http://www.co.whatcom.wa.us/pds)

**From:** David Jellum [mailto:[soundgeology@gmail.com](mailto:soundgeology@gmail.com)]

**Sent:** Wednesday, March 16, 2016 3:46 PM

**To:** Cliff Strong

**Subject:** Tsunami Hazard Code Review

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**From:** [David Jellum](#)  
**To:** [Andrew Wiser](#)  
**Cc:** [PDS Planning Commission](#); [Mark Personius](#)  
**Subject:** Re: Tsunami Hazard Code Review  
**Date:** Thursday, March 17, 2016 11:58:19 AM

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Hi Andy -

Thank you for the update and information. We will continue to update our assessments for geologically hazardous areas as new studies and research become available in order to best serve the community.

Best Regards,

David

On Thu, Mar 17, 2016 at 11:35 AM, Andrew Wiser <[AWiser@co.whatcom.wa.us](mailto:AWiser@co.whatcom.wa.us)> wrote:

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**Cliff Strong**

Senior Planner

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