

Cheryl Lund

From: Carole Connell
Sent: Friday, July 07, 2017 2:08 PM
To: 'Cheryl Lund'
Subject: FW: Gearhart TSP - tsunami evacuation routes
Attachments: Gearhart_TSP_Tsunami_Evacuation.docx; Tsunami Evacuation Routes_Gearhart.docx

Let's put these 2 DLCD suggested additions in right after the DKS memo I just sent dated 7-7-17. Thanks again and again.

From: Wingard, Patrick [mailto:patrick.wingard@state.or.us]
Sent: Thursday, July 06, 2017 2:42 PM
To: Carole Connell; Chad Sweet
Cc: Spangler, Matt; Reed, Meg
Subject: FW: Gearhart TSP - tsunami evacuation routes

Hello Chad and Carole,

Attached, you will find some suggested edits to the draft TSP in regards to tsunami evacuation routes.

I hope this information is on-point and helpful for you.

Please let me know if you have questions or need further assistance.

Note, I will be out of the office next week. Please feel free to contact Matt Spangler at 541-574-1095 or via email (copied here) if you are unable to reach me.

Best,

Patrick

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From: Spangler, Matt
Sent: Wednesday, July 05, 2017 2:40 PM
To: Wingard, Patrick <pwingard@dlcd.state.or.us>
Cc: Reed, Meg <mreed@dlcd.state.or.us>
Subject: RE: Gearhart TSP - tsunami evacuation routes

Hi Patrick,

I perused the draft Gearhart TSP, with particular attention to the tsunami evacuation related text. First off, I agree with your suggestion that the "Emergency Response Routes" subsection should be retitled simply "Emergency Routes". This makes more sense if this subsection is to include the description of tsunami evacuation routes. This subsection is nested under the "Standards" section of the plan, so it is really just a description of the various routes and facilities that have

some existing designation for emergency purposes, so that seems fine to me as far as it goes. I understand the city's concern with the language, so I've taken a crack at clarifying it to some degree so that it better acknowledges the evacuation alternatives for events below the XXL magnitude. This is a little tricky since the XXL is, uniformly, the design event for evacuation/life safety, but Gearhart has a unique situation and the lower margin-of-safety alternatives are acknowledged on the official published evacuation maps. Take a look and see what you think.

Second, I did not see any mention of tsunami evacuation needs or facilities anywhere else in the plan. I take that to mean there has been no additional analysis or identification of how evacuation needs might fit into the overall transportation system or integrate with identified system improvements. I realize that this is likely beyond the scope of the current effort, so it seems like it would be a good idea to acknowledge the need for additional work on this aspect of the system. To that end, I have crafted some language that I would suggest could be added to the **"To the Horizon and Beyond"** section of the plan that identifies needed future work. It is basically meant to identify the evacuation system work that will be enabled by the use of the *Beat the Wave* modeling product. It could go right after "Summer Congestion" on page 52. Take a look and see what you think. If this looks good to you we can share it with Chad and Carol and get their thoughts.

Finally, my thoughts at this point are that the TSP is not the appropriate venue to address the policy issues surrounding the siting of the proposed new fire station. I see it as fundamentally a critical facility siting issue, not a transportation issue. If the city sees a need to address this in their comp plan we can definitely talk to them about that, but as a matter separate from the TSP.

Give a call if you have questions or want to discuss further.

MS



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From: Wingard, Patrick
Sent: Monday, July 03, 2017 11:37 AM
To: Spangler, Matt <mbspangler@dlcd.state.or.us>
Cc: Reed, Meg <mreed@dlcd.state.or.us>
Subject: Gearhart TSP - tsunami evacuation routes

Hi Matt,

Thanks for your call – I'll give you a call back within the hour. In the meantime, here's a link to the draft Gearhart TSP: http://gearharttsp.org/wp-content/uploads/sites/13/2017/06/Revised-Draft-2017-Gearhart-Transportation-System-Plan_Volume-1.pdf

The section of the TSP that the city has asked for our guidance on is entitled, 'Emergency Response Routes' on pp. 36-38. City officials are concerned that the Tsunami Evacuation Routes sub-section undermines their longstanding efforts to educate the public that in many instances heading west towards the Sandtrap/McMenamins properties offers the best option to reach high ground versus attempting to make it through the Gearhart Bog to the foothills to the east.

Perhaps, the Tsunami Evacuation Routes section should not be nested under Emergency Response Routes. Or, the Emergency Response Routes section should be retitled (maybe, to Emergency Routes).

City officials commented that the tsunami evacuation route section focuses too much on evacuation to the east and doesn't really reflect reality. Here's the paragraph that is giving some folks at the city the most heartburn:

Most streets in Gearhart are located in the tsunami inundation area for a local tsunami, with the evacuation zone extending east of McCormick Gardens Road. The city has optional high ground areas that are expected to remain dry in 95 percent of tsunami scenarios analyzed (see Volume 2, Section E). These areas are for last resort evacuation in cases where someone is physically unable to get outside of the hazard area or if there are impassable obstacles.

City officials don't consider evacuating to the west to be a choice of last resort. City officials also take issue with the first sentence's portrayal that all local tsunamis would inundate most streets in Gearhart when it's really just the XL & XXL (I believe, I haven't cross referenced the TIMs) events that would result in this level of inundation. Concerns were raised that the map on page 38 only reflects the XXI scenario and, again, may undermine longstanding and ongoing efforts to educate folks that evacuation to the west is often the best option. The concerns extended to the fact that the map does not show any of their designated tsunami evacuation assembly areas. City officials feel that this point is critical as it prepares to ask voters to support a multi-million dollar bond measure to relocate and rebuild the Gearhart Fire Hall.

With regard to the fire hall issue, the city also desires our help in crafting a plan policy that would capture the city's evolving plans to relocate their fire hall to higher ground (not in a difficult-to-reach location in the easterly foothills but somewhere on higher ground west of Hwy 101 probably fairly close to the ocean). The city would like to see a plan policy drafted that reflects how this potential improvement would change the dynamics of their tsunami evacuation route strategies and protocols. The fire hall, as planned, would also be designed to provide vertical evacuation on its roof.

I hope this info is helpful. I'm finishing up a report right now and will give you a call in a little bit.

Thanks!

Patrick

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Tsunami Evacuation

Recent scientific research documents the historical occurrence of very large (magnitude 9.0+) earthquakes on the Cascadia subduction zone just off the Oregon coast. These mega quakes generate large tsunamis that arrive at the coastline in a short time, generally 15-20 minutes after the earthquake. Due to its low-lying topography, most of Gearhart is potentially subject to inundation from a tsunami generated by a Cascadia subduction zone earthquake. For this reason, the development of tsunami evacuation routes and improvements as a part of the local transportation system is critical to public safety. Current tsunami evacuation plans are conceptual in nature and public safety would be enhanced by a more detailed analysis of the current system and the identification and evaluation of needed system improvements.

The Oregon Department of Geology and Mineral Industries (DOGAMI) has produced detailed evacuation time and distance modeling for Gearhart that documents minimum travel speeds and routes to safety in order to evacuate from a locally generated tsunami. This modeling and accompanying map products provide the base data for a comprehensive evaluation of current evacuation conditions and the identification of needed improvements. This evacuation planning and analysis will also provide the basis for integrating evacuation considerations into other transportation system improvement decisions identified in the TSP. The TSP recommends that the city place a high priority on completing this evacuation system analysis and improvement planning.

Tsunami Evacuation Routes

The Oregon Department of Geology and Mineral Industries (DOGAMI) has ~~developed~~ published a tsunami evacuation plan for Gearhart. This plan (included in Volume 2, Section E) details the projected tsunami inundation area, evacuation routes, ~~evacuation sites, shelters,~~ and evacuation assembly areas. Evacuation signs have been installed along streets to indicate the direction inland or to higher ground.

Most ~~of streets in~~ Gearhart ~~are~~ is within ~~located in~~ the tsunami inundation area for ~~a~~ the largest projected local tsunami, ~~with~~ The inundation evacuation zone for this worst-case tsunami event extends extending east of McCormick Gardens Road. ~~The city has~~ However, the DOGAMI evacuation plan also identifies optional high ground areas west of Highway 101 that are expected to remain dry in 95 percent of tsunami scenarios analyzed (see Volume 2, Section E). These areas ~~are for last resort~~ provide evacuation options for situations and individuals where distance, mobility and other factors would preclude reaching the high ground east of McCormick Gardens Road within the arrival time of the local tsunami. in cases where someone is physically unable to get outside of the hazard area or if there are impassable obstacles. DOGAMI has recently produced more detailed time and distance tsunami evacuation modeling for Gearhart. This modeling and accompanying map products will facilitate more comprehensive and specific evacuation planning and the identification of needed system improvements.