

Envisioning GHC – April 2017 Meeting

In the pages that follow we address all of the comments made by the Grays Harbor County Knowledge-to-Action-Network during April 18, 2017 Stakeholder meeting. The responses are color coded based on our team’s ability to address the comments within the Envision model and/or the way that we visualize results. Please see the meaning of the colors below. Comments that address similar topics have been grouped.

Please direct additional questions or comments to Peter Ruggiero (pruggier@coas.oregonstate.edu) or John Stevenson (jstevenson@coas.oregonstate.edu).

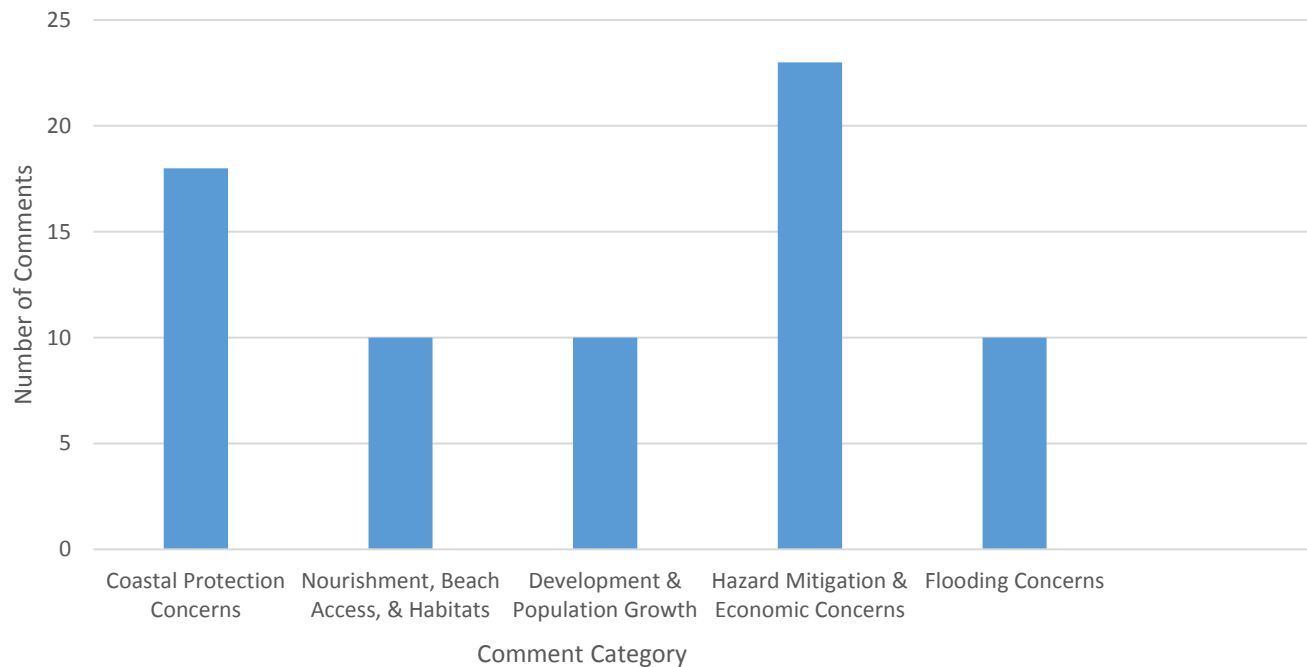
Green: The comment has already been addressed, or is very simple to address.

Orange: The comment will take some time to address, but we think it can be accomplished before our next meeting.

Red: The comment will be difficult address, or it may be out of the scope of this project, at this time.

TOTAL = 73 comments

Poster Comments April 18, 2017



Coastal Protection Concerns (CPC)	Nourishment, Beach Access and Habitats (NBH)	Development and Population Growth (DPG)	Hazard Mitigation & Economic Concerns (HME)	Flooding Concerns (FC)
<p>CPC1. My understanding is that the model does not capture impacts of BPS on adjacent properties. How big of a problem is this?</p> <p>Correct, currently the model does not capture impacts of BPS on adjacent properties. We are exploring the possibility of implementing a simple ‘end-effects’ model into Envision. Additionally, we are planning to modify Envision such that adjacent properties will receive BPS at the same time, rather than on a single-property basis.</p>	<p>NBH1. Price of nourishment seems reasonable, but volumes seem too low</p> <p>Thank you. We will double check our calculations and compare our numbers projects that have occurred in Grays Harbor County.</p>	<p>DPG1. Development capacity could be explained better</p> <p>Thank you, we will reword this in future presentations/results. Development capacity is the percentage of undeveloped area that is zoned for future residential development.</p>	<p>HME1. Look at the different values held by homeowners on the ocean versus owners on North Bay of Grays Harbor. Typically, condo owners along the ocean own several homes, and the loss of a house along the ocean may not be a significant economic loss. Whereas most of the owners along GH north bay own just the one house. They are very invested in protecting these homes with armoring (bulkheads) → different values placed on home destruction by 2 different types of owners</p> <p>Thank you for this information. At this point it is beyond the scope of this project to distinguish between the values of different individual homeowners. We assign property value based on available tax lot information.</p>	<p>FC1. Why is realign so high for # buildings impacted by flooding under high climate?</p> <p>Thanks for catching this – we agree that the initial numbers presented were unrealistic. Future presentations of results will be based on improved calculations.</p>

<p>CPC2. Think it would be interesting to see low impact and high impact scenarios on the same graph, with same y scale (for # bldgs. Impacted by erosion, flooding, etc.)</p> <p>Thank you, we will make this change for future results so that these metrics can be more easily compared on the same plot.</p>	<p>NBH2. Natural resource of sand will be limited over time so nourishing all projects doesn't make sense → limit for DRP and BPS</p> <p>Thank you, we plan to work on implementing sediment scarcity into the model.</p>	<p>DPG2. Probably largest population growth will be in Elma & McCleary because of proximity to Olympia</p> <p>Thank you, this is helpful to know. Is there a report or other form of data that documents how these areas are growing compared other communities within Grays Harbor County?</p>	<p>HME2. What happens to us when NOAA goes away? How to gather evidence and facts to assist problem solving? (with sources being denied, e.g. datasets, NOAA)</p> <p>Thank you for bringing this up. However, as you can imagine, this concern is beyond the scope of our project.</p>	<p>FC2. Why are the # buildings impacted by flooding so different across scenarios between high and low climate? (Why would climate change the way the scenarios are responding to flooding?)</p> <p>Thanks for catching this – we agree that the initial numbers presented were unrealistic. Future presentations of results will be based on improved calculations.</p>
<p>CPC3. BPS should be put in along longer areas since there are already locations that are eroding back and cutting in</p> <p>We are planning to modify Envision such that adjacent properties will receive BPS at the same time, rather than on a single-property basis.</p>	<p>NBH3. Some of the Ocean Shores locations are already inaccessible, so accessibility maps don't make sense</p> <p>Thank you. We will work on using this information to help calibrate the initial results we are seeing from the model.</p>	<p>DPG3. Elma is growing faster – Sacte gentleman James selling like hot cakes! (handwriting?)</p> <p>Thank you. We can incorporate an increased population growth rate in Elma if there is data/a report that documents this. (Sorry we couldn't read some of this handwriting!)</p>	<p>HME3. Analyze hybrid scenario that combines with protection of [the build environment] with habitat improvements</p> <p>This is exactly the kind of thing we hope to do! During our next meetings we will be developing possible hybrid/preferred scenarios.</p>	<p>FC3. Roads impacted by flooding – state route 105 needs to be moved</p> <p>Thank you for bringing this to our attention. At this time we are unable to relocate roads in the model. However, we are glad that this exercise is bringing real planning questions and concerns to the table.</p>

<p>CPC4. [On Figure 11 –] a model with the effective shoreline would also be instructive</p> <p>This is a cool idea. We will look into presenting our results as you suggest during upcoming meetings.</p>	<p>NBH4. Why doesn't restore have more accessibility? Wouldn't we want this to conserve habitat/beach?</p> <p>Thank you. We will work on incorporating this concept into our model.</p>	<p>DPG4. On # bldgs. Added – don't just think about cities, what about unincorporated areas?</p> <p>Thank you. We can keep track of unincorporated growth rates and report on that information as well.</p>	<p>HME4. Protect & realign hybrid scenario</p> <p>This is exactly the kind of thing we hope to do! During our next meetings we will be developing possible hybrid/preferred scenarios.</p>	<p>FC4. Re: length of road impacted – what about other critical infrastructure? Water, sewer, roads, bridges, schools</p> <p>Great point. We are already keeping track of this information (along with dozens of other metrics!) and will be sure to share it in the next set of results.</p>
<p>CPC5. BPS is also currently located on the bayside of Ocean Shores and Westport – Nancy said road has eroded away, leaving only the area of Beach Club that is protected with riprap, with erosion all around it</p> <p>Thanks for bringing this to our attention. We will work on tracking and maintaining the BPS in the bay in the next version of results.</p>	<p>NBH5. Talk to Dave Michaelson USACorps on Ocean Shores dune renourishment</p> <p>Thanks. We will follow-up with Dave, as well as other coastal engineers in the region, to verify the costs and volumes needed for these types of projects.</p>	<p>DPG5. [On # bldgs. Added –] Ocean Shores is growing awfully fast...</p> <p>Yes, Ocean Shores is projected to grow faster than other areas in Grays Harbor County (in Envision) based on feedback we received from our survey in January. If these values seem unrealistic please let us know.</p>	<p>HME5. [On realign -] BPS vs DRP vs step back – new development, no public cost</p> <p>It is not clear to us what was meant by this comment.</p>	<p>FC5. [On flood zone maps –] What about Seabrook/Pacific Beach?</p> <p>Great point. We are keeping track of this data and will be sure to share it in the next set of results. We often need to make decisions regarding which communities to focus on with our presentation of the results.</p>
<p>CPC6. Brookdale also has BPS in bay, increasing bulkheads</p> <p>Thanks for bringing this to our attention. We will work on tracking and maintaining the BPS in the bay, ideally by the</p>	<p>NBH6. Re: restore habitat questions – what about salt marshes? Critical habitat for salmon smolts. See articles by Kim Jones & Dan Bottom on restoration of salmon river OR salt marshes</p>	<p>DPG6. [On # bldgs. Added –] lots in Ocean Shores → platted out 15,000 lots, 5500 built out, 2700 occupied (should be approx. 9000 available plots)</p>	<p>HME6. Have the coastal erosion task force policy recommendations been considered?</p> <p>Good suggestion. We will go back and take a look at this report to see if we can implement any of these recommendations.</p>	<p>FC6. [On flood zone maps –] include whole town – North port, west, and low Ocean Shores</p> <p>Great point. We will be sure to include maps of the entire towns in our</p>

<p>next time we present results to the group.</p>	<p>Following our survey this past winter, it was evident that the Grays Harbor KTAN prioritized eelgrass habitat. However, we will consider adding salt marsh habitat in the future. A real challenge is how to model the evolution of these habitats under various climate change scenarios. This may be outside of the scope of this project.</p>	<p>Thank you for this information. We will double check our numbers to see if they agree with your comment.</p>		<p>next presentation of results.</p>
<p>CPC7. BPS should be added in the bay, since it is already occurring (in Half Moon Bay and Damon Point)</p> <p>Thanks for bringing this to our attention. We will work on tracking and maintaining the BPS in the bay, ideally by the next time we present results to the group.</p>	<p>NBH7. Re: restore habitat questions – will wildlife migrate with the beaches? Oysters, clams, salmon, deer, bear, coyote, pinnipeds, cetaceans</p> <p>Yes, as beaches evolve most likely the populations of these wildlife species will increase or decrease, as a habitat association. We are working to develop appropriate metrics for oyster and razor clams for a restore scenario on the outer coast. However, we have not yet identified the right people to follow up with. Do you know anyone?</p>	<p>DPG7. [On # bldgs. Added –] commercial → can build single family residence in this zone in Ocean Shores</p> <p>Thank you for this information. We will make this adjustment.</p>	<p>HME7. [On realign –] consider viability of community – how far can you realign and maintain a viable community – infrastructure, economy, etc. at what point do you HAVE to protect?</p> <p>These are very valuable questions and great conversations to have. We are pleased that this project is encouraging these types of questions in the Grays Harbor community, and hopefully the alternative scenarios and preferred scenario selection will help explore this question more deeply.</p>	<p>FC7. [On example TWL -] By 2040 all bets are off → it all goes. So, why not allow the process to lead?</p> <p>These are very valuable questions and great conversations to have. We are pleased that this project is encouraging these types of questions in the Grays Harbor community. However, we are not sure how to implement this suggestion into the model.</p>

<p>CPC8. Are we considering end effects of BPS?</p> <p>Currently the model does not capture impacts of BPS on adjacent properties. We are exploring the possibility of implementing a simple 'end-effects' model into Envision.</p>	<p>NBH8. On roads impacted by erosion – important to consider wildlife habitat in decisions re: dune restoration/hard structures</p> <p>This is something that could come up during subsequent meetings when we develop hybrid/preferred scenarios. In the current suite of scenarios different values are prioritized (e.g., to protect infrastructure, to prioritize habitat, etc...).</p>	<p>DPG8. [On density maps –] lakes and canals in Ocean Shores are ALL showing density increase, airport too (not possible)</p> <p>Thank you for your attention to these details. We will double check these results and verify that homes are built in the correct areas.</p>	<p>HME8. Can we explore economic capacity for projects? Limit spending to a specific amount, and cap projects when that is reached (city-level, county-level, state-level?)</p> <p>This is a great suggestion. We are going to work on implementing this into the model by modifying the existing scenarios to incorporate spending limits.</p>	<p>FC8. Example changes to wave heights – bad Y label</p> <p>Great, we will update this.</p>
<p>CPC9. [On figure 7 -] Use profile inferred SCRs, not national assessment</p> <p>This is a reasonable suggestion. We will look into how changing the data beyond the shoreline change rates impacts the results from the model.</p>	<p>NBH9.Re: restore habitat questions – what about shorebirds? Does data exist? Who would have it? Possible citizen science collaborations?</p> <p>We have been attempting to ask the KTAN this question, but haven't yet gotten feedback that we can implement into a metric that assessing how shorebird habitat evolves through time. We have a layer for existing shorebird habitat, but it is not obvious, at least to us, how to evolve this habitat under SLR scenarios. If you have ideas, or know of specific people we can talk with, please let us know!</p>	<p>DPG9. 115 is basically a dike between coastal dunes and the road, and to the east is inland swamp</p> <p>Thank you for this information. In Envision we zone areas according to the available county data.</p>	<p>HME9. [(On figures 17-18)] What happens when there is no tax money to pay?</p> <p>This is a great suggestion. We are going to work on implementing this into the model by modifying the existing scenarios to incorporate spending limits.</p>	<p>FC9. North part of Ocean Shores needs more review – it is low-lying → wetlands → sea level rise → water table rise</p> <p>Thank you for this information. This area is included in model and analyses; however, we simply did not show it in the map on the poster. We will be sure to include it in future presentations of results.</p>

<p>CPC10. Increase BPS [nourishment] restoration to greater than 20% of the time (30-40%)</p> <p>Thank you for this suggestion. We will be examining this metric with a sensitivity analysis and will share these results in the future.</p>	<p>NBH10. Dredge materials to keep beach → can a policy only nourish beach every 10 years with dredge materials in one big sand dump?</p> <p>There are a large number of ways to approach nourishment with dredging (here is one extreme example in the Netherlands http://www.dezandmotor.nl/en/). We may examine this as a policy change in future results.</p>	<p>DPG10. County just announced new GIS layers!</p> <p>Thank you for letting us know. We have followed up on this with the county GIS office.</p>	<p>HME10. [(On figures 17-18)] When policy decisions are politics, not fact based? Such as recent flood insurance changes</p> <p>This is an interesting point. However, it is beyond the scope of this work.</p>	
<p>CPC11. Consider increasing maintenance cost for BPS because need larger rock, often not done properly to begin with so needs more maintenance (or increase initial capital costs)</p> <p>We are going to follow up with coastal engineers who have experience in the area to validate the capital and maintenance costs that we are implementing in the model. We may also try to implement a cost increase based on your point.</p>			<p>HME11. Can CIRC team estimate costs to consult with local areas to do site-specific runs? (e.g Westport)</p> <p>Yes, we can definitely have a conversation about this; let's be in touch.</p>	

<p>CPC12. Cost to build/protect properties several times versus easement (to show direct trade-offs for one property)</p> <p>We most likely will not look at individual properties, however, we can explore this by comparing the difference in costs between the protect scenario versus the realign scenario. We could potentially do this at the community level (e.g. Ocean Shores).</p>			<p>HME12. What other funding scenarios, other than FEMA funding after destruction are out there?</p> <p>The primary source we are aware of is FEMA, if you are aware of other sources please let us know. When we add monetary caps into the scenarios (HME9), we can incorporate different amounts of outside aid into the scenarios (high aid, medium aid, low aid) if the KTAN is interested.</p>	
<p>CPC13. Current BPS maintenance is very minimal, more on an emergency need-basis – can we compare that to a more realistic #?</p> <p>Decrease the frequency of maintenance or compare costs of regular versus emergency (currently BPS only maintained every 10-15 years)</p> <p>In our model we can't really deal with the actual degradation of structures. We plan to modify maintenance costs and frequency of</p>			<p>HME13. [Re: public roads –] what happens when tax dollars (feds) evaporate?</p> <p>We are currently only tracking the length of road impacted, but we can add a dollar amount to that to be considered in scenarios that incorporate spending limits. If anyone has information on costs for this we can include it in the planned scenarios that limit spending.</p>	

<p>maintenance as a sensitivity analysis, and will share these results at the next meeting.</p>				
<p>CPC14. Under baseline, can we change maintenance costs to be only once every 10-15 years? (Then be able to compare that cost to more regular maintenance costs in another scenario)</p> <p>We plan to modify maintenance costs and frequency of maintenance as a sensitivity analysis, and will share these results at the next meeting.</p>			<p>HME14. Why doesn't restore scenario also prohibit new development in FEMA 100 year flood zone?</p> <p>This was a choice made by the KTAN. The idea is look at scenarios that are distinct as possible and to examine the metrics differences between scenarios. It is certainly something that can be explored during our next meetings when we will be developing possible hybrid/preferred scenarios.</p>	
<p>CPC15. Put cumulative costs of BPS and DRP on same plot to compare #s more easily</p> <p>Thanks, will do!</p>			<p>HME15. On cost removing buildings from hazard zone - Move public facilities, should be proactive to life of facility</p> <p>Currently we don't have any data on this, and it is a level of detail that's beyond the scope of the project.</p>	

<p>CPC16. Run costs for BPS/DRP on city basis rather than county-wide → more useful for planning (particularly Copalis, Taholah, Seabrook, Ocean Shores, Westport)</p> <p>Agreed, we will incorporate this idea into our next presentation of results.</p>			<p>HME16. [On cost removing buildings from hazard zone –] what happens to each when population numbers go down (migration out) or up (migration in)</p> <p>Currently we are using 2010 values for property values, and not allowing for appreciation/depreciation.</p>	
<p>CPC17. BPS end cut impact to habitat – both Quinault and Shoalwater have to “step back” – Washaway Beach</p> <p>Currently the model does not capture impacts of BPS on adjacent properties. We are exploring the possibility of implementing a simple ‘end-effects’ model into Envision.</p>			<p>HME17. [On cost removing buildings from hazard zone –] these numbers are high! Are they real? Does this mean there’s no point in attempting this? BPS is ~100x cheaper</p> <p>These were initial results, we agree that the numbers were high. Stay tuned for the next round of estimates!</p>	
<p>CPC18. We received as cost estimate from Quigg Bros to armor 1200 linear feet x 8 vertical feet for \$2 million or \$48/sq ft</p> <p>Thanks, this is great information. We will compare it to our costs, and our discussions with</p>			<p>HME18. [On cost removing buildings from hazard zone –] what is the estimated local, county and state capacity to accomplish this (relocation)?</p> <p>This is a great suggestion. We are going to work on implementing this into the model by modifying the existing scenarios to incorporate spending limits.</p>	

<p>other coastal engineers, and update as needed.</p>				
<p>CPC19. Protect scenario removals – does this account for impacts of protection on adjacent properties (e.g. increased erosion elsewhere, potentially)</p> <p>Currently the model does not capture impacts of BPS on adjacent properties. We are exploring the possibility of implementing a simple ‘end-effects’ model into Envision.</p>			<p>HME19. [On # bldgs. In FEMA hazard zone –] these numbers seem low for 2030</p> <p>We are continuing to refine the model in this area, stay tuned for the next round of results.</p>	
			<p>HME20. [On # bldgs. Removed from hazard zone –] please indicate at what point in time or other measure the # of buildings and cost will at least begin to drop, either because there are no buildings left or measures for protection have been successful</p> <p>This is a great suggestion, we will incorporate this thought into future results.</p>	

			<p>HME21. [On # bldgs. Removed from hazard zone –] possible to quantify # of buildings, or is it only relative?</p> <p>Yes, it is possible to quantify the number of buildings. These were preliminary results so stay tuned for the next round.</p>	
			<p>HME22. Are the bldgs. Impacted reported as a % or a count?</p> <p>In these results, as a count.</p>	
			<p>HME23. Challenge of planning for such a long time frame → are assumptions still correct?</p> <p>This is a great point, thank you. Models can be helpful for forward-thinking planning, but they cannot incorporate all uncertainty, or accurately predict the future.</p>	
			<p>HME24. Scientific projects like this one don't keep up with new information fast enough</p> <p>We agree, it is always challenging to incorporate data into models and keep up with new information, and to balance the rate of scientific progress with new available information. On this project we are doing our best to work as fast as possible while ensuring quality control of the data and process.</p>	