Bureau of Planning and Sustainability

Attachment C:
Technical Expert and Stakeholder Comments

West Hayden Island **December 13, 2012**
Natural Resources Technical Expert Questions

Location of Mitigation Actions

The proposed annexation agreement for West Hayden Island (WHI) includes a package of mitigation actions to compensate for impacts to natural resources within the 300 acre marine terminal development footprint. Mitigation will be occurring on-site and off-site (please refer to West Hayden Island Natural Resource Mitigation Staff Report). Please respond to the following questions, related to the City's WHI mitigation approach:

LQ1: The proposed acceptable geography for WHI mitigation actions is the Columbia River floodplain from the Sandy River confluence to the east, the East Fork of the Lewis River confluence to the north and the Multnomah Channel/Willamette River confluence to the south (this includes Sauvie Island). Is this an appropriate geography for WHI mitigation or would you proposed a different geography?

LQ2: The current mitigation proposal focuses mitigation actions on roughly 176 acres of WHI (including forest, wetlands and shallow water habitat), 470 acres of forest mitigation on Government Island, and a single third site, to be identified in the future, within the larger mitigation geography. Is the size and location of the off-site mitigation actions consolidated enough and large enough to provide significant ecosystem functions (e.g., habitat mosaic)?

LQ3: On WHI, staff have identified areas where forest mitigation actions are the highest priority and other areas where shallow water habitat/wetland mitigation actions are the highest priority (see Map 4 in the Staff Report). Is this a reasonable approach? If not, what would you suggest?

Floodplain

Based on the concept plan for marine terminal development, roughly one million cubic yards of fill will need to be placed on WHI (one million cubic yards is the net fill; there will be more fill placed within the development footprint and cuts associated with wetland and shallow water habitat). The current draft proposal addresses impacts and mitigation for each habitat type located in the floodplain (forests, grasslands, wetland and shallow water areas); however, it does not directly address the fill.

FQ1: Are there are methods short of balanced cut and fill that would help mitigate for lost floodplain functions?

FQ2: How might the City consider climate change and the potential for additional flood impacts on the island?

Shallow Water Habitat

The impacts of development on shallow water habitat will likely include two access ramps (with associated infrastructure) to two docks located beyond the lower extent of shallow water habitat. It is expected that the Port will have to go through a NEPA process prior to development.

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SQ1: Given your experience evaluating projects similar to this (Columbia or Willamette River docks), will the outcome of the federal/state permitting process address all natural resource features and functions and require mitigation that fully compensates for detrimental impacts? If not, what functions are not likely to be addressed in a state/federal permit process?

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United States Department of the Interior

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Reply To: 6500.3119
File Name: WHI_mitigtion.doc
TS Number: 13-246

JAN 15 2013

Mindy Brooks
City of Portland
Bureau of Planning and Sustainability
1900 SW 4th Ave, Suite 7100
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Dear Ms. Brooks:

The U.S. Fish and Wildlife Service (Service) appreciates your invitation to review technical questions posed by the Portland Planning and Sustainability Commission regarding the mitigation of potential impacts from possible development on West Hayden Island. The questions you outlined are provided below in italics, followed by our responses.

Location of Mitigation Actions

The proposed annexation agreement for West Hayden Island (WHI) includes a package of mitigation actions to compensate for impacts to natural resources within the 300 acre marine terminal development footprint. Mitigation will be occurring on-site and off-site (please refer to West Hayden Island Natural Resource Mitigation Staff Report). Please respond to the following questions, related to the City's WHI mitigation approach:

LQ1: The proposed acceptable geography for WHI mitigation actions is the Columbia River floodplain from the Sandy River confluence to the east, the East Fork of the Lewis River confluence to the north and the Multnomah Channel/Willamette River confluence to the south (this includes Sauvie Island). Is this an appropriate geography for WHI mitigation or would you proposed a different geography?

Response: WHI is in an important location for fish and wildlife, and we believe that the closer mitigation occurs to impacted areas the better impacted resources will be served. The ecological functions and protection opportunity afforded by islands is much different than that provided by different types of feature, such as the Sandy River delta or mainstem shorelines, although these areas are important. The Portland Harbor Trustees, which includes the Service, identified a geographical area for addressing impacts in the Portland Harbor Study Area on the Willamette River which is not as extensive as what you have proposed, and set a policy requiring at least half of the mitigation to occur within the study area itself and no more than half within the defined broader focus area to try to address the needs of impacted resources as locally and

directly as possible. We recommend that you move the boundaries in and define a certain percentage of restoration that must occur on-site for the same reasons as related to the resources impacted at WHI.

LQ2: The current mitigation proposal focuses mitigation actions on roughly 176 acres of WHI (including forest, wetlands and shallow water habitat), 470 acres of forest mitigation on Government Island, and a single third site, to be identified in the future, within the larger mitigation geography. Is the size and location of the off-site mitigation actions consolidated enough and large enough to provide significant ecosystem functions (e.g., habitat mosaic)?

Response: We believe that more bottomland hardwood forest and other habitat types could be created on WHI, and the maximum amount of mitigation that can occur to offset the impacts of any development that may occur on the island itself should be located there. Mitigation needed for other impacts, such as for Portland Harbor-related settlements, should be considered secondarily if opportunities remain after maximizing the potential to offset impacts that occur on WHI. In addition, one of the most significant impacts should development occur will be the reduction in the size of the over 800-acre natural area. Its location on an island that is entirely within the 100-year floodplain makes it an even more limited feature with unique benefits to natural resources. We recommend that opportunities to not only improve habitat quality, but also to restore the size of in-tact habitat areas that are similar in nature, be considered in mitigation planning. Opportunities to create new islands in the Columbia River will be exceedingly rare and very expensive, hence in-kind mitigation may not be possible.

LQ3: On WHI, staff have identified areas where forest mitigation actions are the highest priority and other areas where shallow water habitat/wetland mitigation actions are the highest priority (see Map 4 in the Staff Report). Is this a reasonable approach? If not, what would you suggest?

Response: Please see the comment above.

Floodplain

Based on the concept plan for marine terminal development, roughly one million cubic yards of fill will need to be placed on WHI (one million cubic yards is the net fill; there will be more fill placed within the development footprint and cuts associated with wetland and shallow water habitat). The current draft proposal addresses impacts and mitigation for each habitat type located in the floodplain (forests, grasslands, wetland and shallow water areas); however, it does not directly address the fill.

FQ1: Are there methods short of balanced cut and fill that would help mitigate for lost floodplain functions?

Response: It is difficult to mitigate for lost floodplain function losses even with balanced cut and fill, which tends to be focused on flood storage capacity rather than the full array of floodplain functions. Floodplains tend to be dynamic rather than static in nature; areas that are cut to balance fill may be only temporary features. Opportunities to restore impacted or lost floodplain areas may have the greatest likelihood of successfully mitigating floodplain functions, but

opportunities are limited, restoring full function is difficult, and restoration in another location may not provide the same benefits to impacted fish and wildlife as the loss of floodplains at the current location. Fill in the floodplain will need to be addressed by FEMA and others during the Clean Water Act, section 404 and section 10 of the Rivers and Harbors Act permitting and Endangered Species Act, section 7 consultation processes.

FQ2: How might the City consider climate change and the potential for additional flood impacts on the island?

Response: The effects of climate change could include alterations in seasonal flows, and the frequency, duration and extent of flood events. Projections should be evaluated and addressed in habitat protection and restoration plans. Increasing variability should be assumed for each process being evaluated.

Shallow Water Habitat

The impacts of development on shallow water habitat will likely include two access ramps (with associated infrastructure) to two docks located beyond the lower extent of shallow water habitat. It is expected that the Port will have to go through a NEPA process prior to development.

SQ1: Given your experience evaluating projects similar to this (Columbia or Willamette River docks), will the outcome of the federal/state permitting process address all natural resource features and functions and require mitigation that fully compensates for detrimental impacts? If not, what functions are not likely to be addressed in a state/federal permit process?

Response: Many ecological impacts are likely to occur that may not be addressed by state and federal regulations. Permitting processes do not always address the full array of impacts beyond the regulated resource, or confounding issues such as impacts associated with reduced fish and wildlife connectivity, the loss of proximal habitats that are important to many species, the fragmentation and reduced size of habitat areas, the loss of interior habitats, secondary impacts to species due to noise, lighting, introduction of invasive species, soil compaction, risk of contamination, increased public access and other factors. In addition, permitting processes focus on avoiding and minimizing adverse impacts to the environment and natural resources, but do not begin to address the potential to support protection, restoration and enhancement efforts that can provide added ecological values or contribute to the recovery of listed and at-risk species.

Thank you for considering these comments. The Service looks forward to reviewing future local planning documents, and we will be commenting formally on this project as appropriate through various Federal nexuses and the Fish and Wildlife Coordination Act. Please contact Jennifer Thompson of my staff at (503) 231-6179 if you would like to discuss this input further.

Sincerely,

Paul Henson, Ph.D.
State Supervisor

CITY OF PORTLAND
ENVIRONMENTAL SERVICES
1120 SW Fifth Avenue, Room 1000, Portland, Oregon 97204 ▪ Dan Saltzman, Commissioner ▪ Dean Marriott, Director

MEMORANDUM

TO: Mindy Brooks, BPS

FROM: Kaitlin Lovell, BES

CC: Mike Rosen, BES
Eric Engstrom, BPS

Date: January 16, 2013

Re: West Hayden Island Technical Expert Questions and Answers

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The following answers are provided objectively based on nearly 15 years of experience as an environmental attorney and aquatic ecologist including 6 years with the City of Portland as the manager for the Science, Fish and Wildlife Division within BES.

LQ1: The proposed acceptable geography for WHI mitigation actions is the Columbia River floodplain from the Sandy River confluence to the east, the East Fork of the Lewis River confluence to the north and Multnomah Channel/Willamette River confluence to the south (this includes Sauvie Island). Is this an appropriate geography for WHI mitigation or would you proposed a different geography?

The standard hierarchy among all natural resource regulators is to first avoid the impact. For unavoidable impacts, the applicant must minimize the impacts of the action on the environment. Only then is mitigation triggered for the impacts, even those that have been minimized. In many instances, the preference is for onsite mitigation, however there are exceptions in areas such as wetland mitigation and some species mitigation. Evaluation of the appropriate mitigation geography requires a review of the baseline conditions.

The WHI Natural Resource Mitigation staff report provides a good summary of the baseline conditions. However it underemphasizes two critical points. First is the rarity of the island, both in terms of its intact ecosystem and its location in a highly urban area and the confluence of the two largest river systems in Oregon. Second, the staff report highlights the complexity of the island but fails to explain that there is an interdependance between the plants and animals on the island that it not well understood such as the relationship between the habitat on the island and the diversity of bat species

present.. There are features and species present on WHI that are rare or absent from anywhere else in the city.. It is almost certain that the City is understimating the complexity of the island. For these reasons, there should be a very high bar for approving mitigation off-island.

The next step is to determine the geographic limits of mitigation. The first option is the geopolitical boundary, namely the city limits. This boundary would be much smaller than what is proposed. However, narrowing the mitigation to the jurisdictional boundary assures a higher level of oversight and enforcement by the City of Portland. For example, the Port and City may agree to a type, size and design of mitigation that is outside the city, but the local jurisdication's review process may prohibit or alter that design. Outside the city's boundaries, the City cannot guarantee land ownership approvals or other necessary precedents to mitigation. However, species and habitat are not confined by political boundaries.

Ecologically, the geography for mitigation depends on the overall impact. If the objective is to mitigate a single species, then it is appropriate to look at the life history of the species being impacted and determine the geography based on the best place to improve upon that life history. Another way to determine mitigation geography is through the habitat. For example, WHI is a forested floodplain island in the Columbia River. Mitigation may occur by improving or reopening forested floodplain somewhere on the Columbia within the same hydrologic unit. In this instance, the City has indicated that it wants a "net increase in ecosystem function." To achieve a net increase in ecosystem function the City should try to define the geography to optimize and maximize the mitigation of all species and habitats acting in concert. The City has tried, in most instances, to avoid mitigation on a species by species or habitat by habitat approach. Such an approach would fracture the unique interactions found on the island and likely reduce the ecosystem function even if every habitat and species is mitigated proportionately.

Based on the species and habitat identified in the Natural Resources Inventory report, the geography is reasonably defined to mitigate for the myriad of anticipated impacts. The geography could be further narrowed, or encouraged, within the City of Portland boundaries for geopolitical reasons although it might preclude ecologically appropriate mitigation sites outside the city limits. Because of the rarity of the island and the complexity of the species-habitat interactions, the City should strongly encourage the Port to concentrate all of the mitigation in a single location to achieve net increase in ecosystem function. The location(s) within the geographic range should be determined by the "rarest" of species or habitat type present and any co-dependent species or habitat, and build up from there to maximize co-location of multiple species and habitats. This is more likely to achieve a net increase in ecosystem function.

LQ2: The current mitigation proposal focuses mitigation actions on roughly 176 acres of WHI (including forest, wetlands and shallow water habitat), 470 acres of forest mitigation on Government Island, and a single third site, to be identified in the future, within the larger mitigation geography. Is the size and location of the off-site mitigation actions consolidated enough and large enough to provide significant ecosystem functions (e.g., habitat mosaic)?

8
For reasons explained in LQ1, namely the rarity, location and potential for fragmentation, the City should maximize onsite mitigation. However, it is impossible to mitigate for all of the impacts on the remaining acres (approx. 500) on the island.

I am not a forest ecologist so I cannot speak to the appropriateness of forest mitigation on Government Island. However, given the age, diversity and structure of the forest on WHI, and the species that depend on it, Government Island should be evaluated based on the same criteria. Does it have a mix of cottonwood ash? Does it have the same hydrology? Will it support the same diversity of species, including the 19 at-risk species that use the habitat, such as the red-legged frog's unique habitat requirement for wetland and mature forest? If there is a better site within the geographic range that meets these criteria then it is not appropriate. If it does, then it may be appropriate. If there are any of these criteria that are lacking – for example the wetland on Government Island may be infested with bullfrogs and therefor unsuitable for red legged frogs – then the mitigation is incomplete. The more incomplete and inappropriate Government Island is for mitigation, the greater the need to choose a third site despite the risks. The more sites that are chosen, the more fragmented the habitat and the more fractured the interrelationship between the species and habitats. The more dispersed and fragmented the habitat types, the more mitigation will have to be done to achieve a net increase in ecosystem function. This is a balancing act.

LQ3: On WHI, staff have identified areas where forest mitigation actions are the highest priority and other areas where shallow water habitat/wetland mitigation actions are the highest priority (see Map 4 in the Staff Report). Is this a reasonable approach? If not, what would you suggest?

The forest, shallow water and wetland habitat types are not mutually exclusive and in fact are enhanced by their proximity and interrelationship. Shallow water habitat is critical to the rearing and refuge of threatened juvenile salmon and steelhead. But forest habitat along the river's edge is one of the key factors in creating shallow water habitat. As trees mature they not only provide food and nutrients to the shallows, but when they mature and fall over, they create small microhabitats that include slow moving water, are cool, and safe from predators. In turn, salmon carcasses are typically caught up by the fallen trees. Their decomposing bodies provide marine micronutrients to the saplings that have been shown to increase growth nearly three times as much as non-salmon bearing streams.[1] Furthermore, the highest quality shallow water habitat typically has cold water upwellings, known as hyporeic flow, that can be created or enhanced by nearby wetlands.

It does not make sense to plant forests down to the waters edge where they will not survive. Nor is it appropriate to dredge and destroy mature forests in the name of creating shallow water habitat. It is appropriate to emphasize areas for reasonable mitigation actions as done in Table 4, but it should not be exclusive. For example, in the shallow water opportunity areas, anything above the functional ordinary high water but below the regulatory ordinary high water qualifies as shallow water habitat. Nonetheless,

[1] Helfield, J. M., and R. J. Naiman. 2001. Effects of salmon-derived nitrogen on riparian forest growth and implications for stream productivity. *Ecology* 82(9):2403–9. See also: <http://www.calacademy.org/science_now/archive/headline_science/salmon_trees.php>

it can and should be planted and enhanced because of the biological synergies. Similarly, if there is forested habitat that can be enhanced through invasive removal or even the creation of side channels to increase wet soil conditions and encourage forest diversity, it should be considered even if it is in the "shallow water habitat opportunity area." However, one habitat type should not be wholesale converted to another habitat type, nor should the enhancement of one habitat type put undue risk on another habitat type (for example dredging a side channel through a forest that eventually erodes and causes significant tree loss).

The lines on Map 4 should not be considered bright lines, but grey areas to explore optimization. The integration of the habitat types should not be prohibited simply because of a line on a map. In terms of crediting the mitigation, these areas of integration could be counted towards one habitat type but not both (in other words, avoid counting the same parcel of land twice). However the City may want to consider giving greater weight to these integrated areas. For example, vegetated shallow water habitat could be given a higher point score than non-vegetated shallow water habitat. Or, if the Port would prefer to count the areas towards the forest migitation, then they chould be given higher credit for those areas that transition from one habitat type to another. This kind of approach emphasizes the importance of the mosaic interaction of the island. Given the very small amount of land where this integration is possible and desireable, it is unlikely to have a large effect on the amount of mitigation that is on site versus off site.

FQ1: Are there are [sic] methods short of balanced cut and fill that would help mitigate for lost floodplain function?

It is important to first distinguish between balanced cut and fill and floodplain function. Balanced cut and fill is a shorthand regulatory term used to quickly and approximately manage water storage. It is not a term to describe floodplain function. NOAA Fisheries has prepared an excellent fact sheet on the importance of floodplains to salmon that more appropriate captures the totality of floodplain function.[2]
In sum, the floodplain functions can be categorized as:

1. Hydrology including flood storage and groundwater recharge
2. Water quality
3. Habitat
4. Biological Communities
5. Flood hazard reduction – this is not necessarily an ecological function of floodplains, but is important enough as an ecosystem service to call out as a separate category.

Flood storage capacity is merely one component of a floodplain's hydrologic function although it most directly affects flood hazard reduction. Hydrology also includes erosion control such as wave attenuation, reduced flood peaks, ground water recharge and infiltration. Infiltration and groundwater recharge also benefit water quality by trapping, cleaning and cooling the water, providing nutrients, and processing organic wastes. Habitat is formed through flooding. Floods create side channels, transport wood and sediment, create sandbars and pools, and shape riverbanks and islands. These habitat formations are critical to certain species including the threatened and endangered salmon and steelhead, eulachon, bull trout and other sensitive fish. In addition, numerous bird

[2] http://www.fema.gov/pdf/about/regions/regionx/importance_of_healthy_floodplains_by_NMFS.pdf

and amphibian species depend on these floodplain habitats for forage and breeding. These habitats have also been found to store significant amounts of carbon, helping the city to meet its Climate Action Plan goals.[3]

The Federal Emregency Management Agency (FEMA), regulates development in the floodplain under the National Flood Insurance Act which includes mapping, insurance programs, and model land use codes among other elements. Within the model land use codes, FEMA recommends adopting a "balanced cut and fill" code in some areas. This is essentially a policy that states an applicant that fills in the floodplain must provide an equal amount of cut in the floodplain within the same hydrologic unit. This practice theoretically provides equivalent flood storage in the local area. It is a recognition that the modeling to map floodplains and predict flooding, especially changes due to individual incidences of fill or cut, is imprecise and unable to capture small changes. However, it is important to note that the balanced cut and fill policy only addresses flood storage. Just because balanced cut and fill is or is not required, it does not meet that the incidence of flooding has been mitigated with a project, or that the floodplain functions have been mitigated. It does mean that the hydrologic unit as a whole has likely not lost flood storage capacity.

There are other ways to achieve flood storage and address some of the other floodplain functional impacts. Any action that opens up previously inaccessible floodplain could have the same effect as balanced cut and fill. For example, removing dikes and leeves is one alternative. The Columbia River has many dikes and levees that were used for agricultural purposes that could be breached to provide flood storage. In addition, restoring these floodplains with native vegetation and trees would satisfy many of the other floodplain functions including water quality, habitat and biological communities. Removing existing development from a floodplain, similar to the City of Portland's recent project on Johnson Creek on Foster Rd. can also increase flood storage and restore floodplain functions. Typically these types of projects that provide multi-benefits are preferred because they help a project meet multiple permitting requirements including FEMA, the Clean Water Act and the Endangered Species Act. Balanced cut and fill alone might not meet the multiple regulatory needs.

It is important to note that the regulatory mechanisms of balanced cut and fill, and another approach referred to as "no net rise" do not necessarily reduce localized flooding. Similarly, incomplete mitigating for lost floodplain function whether it is through balanced cut and fill or other mechamisms, does not guarantee a reduction in flood risk. To determine the impact of the proposed development on flooding a much more robust analysis that includes both the type, size and location of any proposed fill in the floodplain, along with any mitigating actions, must be calculated through a complex

[3] Zhu, Zhiliang, and Reed, B.C., eds., 2012, Baseline and projected future carbon storage and greenhouse-gas fluxes in ecosystems of the Western United States: U.S. Geological Survey Professional Paper 1797, 192 p. (Also available at http://pubs.usgs.gov/pp/1797/.) . See also <http://www.doi.gov/news/pressreleases/interior-releases-study-of-carbon-storage-and-sequestration-in-western-ecosystems-as-part-of-national-assessment.cfm>.

Wetlands were found to have the highest rate of carbon storage but occupy the smallest area, so the total carbon sequestered is smaller than other habitat types.

model. This modeling is required as part of a building permit application to the City of Portland to show that there is a "no net rise" due to the development.

FQ2: How might the City consider climate change and the potential for additional flood impacts on the island?

In sum, there is likely to be more intense winter time flooding on the island and lower summertime water levels. Increasing sea level rise and tidal amplitudes suggest that storm events will increase intensity and flood impacts.
A detailed analysis of the impacts of climate change on West Hayden Island has not been initiated. However, the City has analyzed the general impacts of climate change to the city and adopted a Climate Action Plan and is in the process of developing a Climate Adaptation Plan. Generaly speaking, floodplains are important ecosystem types to help the City of Portland respond to inevitable changes in the local climate. They provide resilience so that increases in storms and floods do not put people and property at greater risk.

Relative to flood impacts and climate change on West Hayden Island there are three reviews that indicate a potential future change in flooding on the island. None of the reviews however look at the combined and synergistic effect of the changes on West Hayden Island.

First is the impact of the Columbia River hydropower system and how water releases may change river levels and consequently increase flooding downstream along West Hayden Island. The Northwest Power and Conservation Council's Independent Science Advisory Board (ISAB) reviewed the issue in 2007.[4] The report predicted that winter precipitation is will increasingly fall as rain and not snow, which will increase water levels in streams, rivers and reservoirs in the winter. Depending on winter precipitation, the hydropower system may have to release more water in the winter which will increase river levels around West Hayden Island. Similarly, the Willamette River contains 13 federally operated dams used for flood protection and hydropower operations. A recent report analyzing the affect of climate change on the Willamette showed increased peak flows in the winter but a decrease of flows in the summer.

[4] http://www.nwcouncil.org/library/report.asp?docid=354

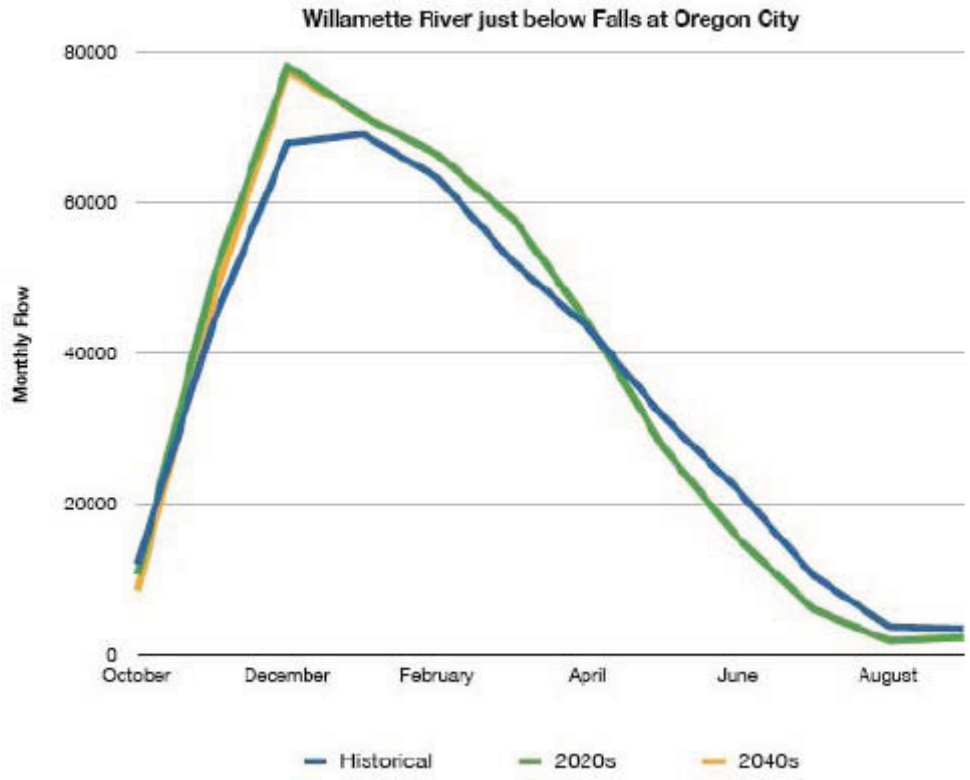

Figure 10. Sample stream flow change for 2020s and 2040s under the HadCM model.

Vynne, Stacey, S. Adams, R. Hamilton, B.Doppelt. 2011. Building Climate Resiliency in the Lower Willamette Region of Western Oregon. The Resource Innovation Group: Climate Leadership Initiative. Eugene, OR. www.theresrouceinnovationgroup.org

West Hayden Island is located in the Columbia River Estuary and is affected by ocean levels and tides. As such, any changes in sea level rise (SLR) due to climate change may affect the river levels at West Hayden Island. Within the estuary, which includes West Hayden Island, the ISAB report notes that sea level rise will potentially increase the storm surges and increase the saltwater wedge in the Columbia, but the overall flow and elevation of the river will be more influenced by the hydropower system especially closer towards Bonneville Dam. However new data are emerging about the potential impact of SLR which indicate that sea level has already risen and could rise up to 4 feet on the Oregon Coast.[5] Additional factors such as El Nino and a change in earthquake patterns could increase the SLR even more. Scientists from Portland State University recently documented an increase in the amplitude of tides on the Oregon Coast.[6] The combination of these impacts increases the potential for the perfect storm event when high rains at high tides cause releases from both the Columbia and Willamette hydropower systems simultaneous with a heightened storm surge due to an increased SLR and tidal affect.

Finally, TriMet completed a climate change analysis for the Portland-Milwuakie Light Rail Bridge over the Willamette in order to determine the optimal bridge height. The

[5] National Climate Assessment and Development Advisory Committee. 2013. The National Climate Assessment. Jan. 11 Draft for public comment. http://ncadac.globalchange.gov/
[6] Jay, David. 2009. Evolution of Tidal Amplitudes in the eastern Pacific Ocean. Geophysical Research Letters. 36:4. Doi:10.1029/2008GLO36185.

report, using a cursory analysis of the data available at the time, projected a potential increase in ordinary high water (OHW) at the bridge location between 1.7 and 8.3 feet by the year 2100. TriMet increased the elevation of the bridge nearly 3.5 feet to accommodate the median projected river rise of 3.9 feet. The Columbia River Crossing is conducting a similar analysis using data and analysis by the Army Corps of Engineers for the Columbia River Treaty negotiations, however that analysis is not publicly available at this time.

SQ1: Given your experience in evaluating projects similar to this (Columbia or Willamette River docks), will the outcome of the federal/state permitting process address all natural resource features and functions and require mitigation that fully compensates for the detrimental impact? IF not, what functions are not likely to be addressed in a state/federal permit process?

No. The review by the state and federal agencies is very limited by their jurisdictional restrictions and resources. For example, NOAA Fisheries and USFWS only review ESA listed species impacts. The Corps only evaluates navigational impacts and the effects of fill, not removal, on rivers and wetlands. The State has greater jurisdiction over more activities but the review of impacts to species by ODFW is merely advisory. In other words, there are many activities that will not be reviewed such as impacts to the forests, functional impacts to floodplains, impacts to terrestrial and unlisted species, and the interelationship of the habitats and species such as red legged frog protections due to the wetland and forest requirements for that species.

Furthermore, while technically within their jurisdiction, deep water impacts from projects has not been analyzed or mitigated in my experience. Recently for the Columbia River Crossing, the City of Portland asked the project team to evaluate the impacts of the project on additional species in the Columbia River to specifically target vulnerable species that are not as dependant on shallow water habitat. The consultants recently evaluated the impacts of the project on white sturgeon, eulachon and chum salmon using the Habitat Equivalency Assessment (HEA). They found notable differences in the score compared to salmon and steelhead because of the different habitat needs. For example, sturgeon are much more dependant on deep water habitats for spawning. It was noted that none of the other state or federal jurisdictions, including Washington, had requested this kind of review or analyzed the impact to these species and their habitats.

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January 16, 2013

Dave Helzer
Environmental Specialist & Terrestrial Biologist
Bureau of Environmental Services - City of Portland
503.823.5760

Dear Mr. Helzer,

Thank you for the opportunity to review the West Hayden Island (WHI) natural resource mitigation information. My comments are provided based o the material provided to me by Mindy Brooks at the Bureau of Planning, and on clarifications you have provided me during our in-person meeting on January 10, 2013. I have responded directly to the review questions, reference by question number from the West Hayden Island Natural Resource Technical Expert Questions.

LQ1: An acceptable geographic limit for proposed West Hayden Island (WHI) mitigation actions should be based on the types of functions to be replaced. In theory, the geographic limits for mitigation could vary between resource types dependent on the functions to be mitigated. For example, replacing bird migratory resting functions may be achievable in different locations than replacing floodplain storage functions – so those functions could have differing geographic limits for mitigation effectiveness.

Typically, a single geographic limit for all mitigation actions is based on hydrogeomorphic conditions or other landscape process. Using a hydrogeomorphic approach limits mitigation actions based on the locations where the landscape has the capacity to develop similar habitat types or hydrologically similar conditions. The area proposed in the WHI Natural Resources Mitigation Staff Report appears sound for a single geographic area approach; the area proposed is similar to the Columbia River hydrogeomorphic reaches delineated by University of Washington and USGS.

LQ2: I will defer to local wildlife experts for comments on specific area thresholds for habitat, but I do think it's clear the presence of large areas of contiguous habitat at WHI undoubtedly provides benefits that cannot be replicated with multiple smaller sites. Large areas of contiguous habitat provide buffered habitat area that can support multiple wildlife life stages, and maintain microclimates. Once local wildlife professionals determine habitat area thresholds for mitigation areas, the number and distribution of specific sites can be re-evaluated in an appropriate context. Please note, that only the "buffered" portion of the mitigation areas should be considered as adequate mitigation. Mitigation ratios assume that the mitigation area is adequately buffered; requiring "non credited" buffers incentivizes large consolidated mitigation areas.

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I also would like to comment that the term "re-establishment" seems to be used inconsistently with wetland mitigation practices. Re-establishment is defined as restoring both area and function of a habitat type, therefore an existing floodplain cannot be "re-established" solely through vegetation management. Re-establishing floodplain should include restoring the flooding function itself, such as by removing fill, breaching a levee, or otherwise restoring flood function to a "former floodplain" to establish floodplain area in addition to functional enhancements. Mitigation proposals that are limited to vegetation improvements are considered "enhancement" in wetland mitigation practice and require higher mitigation ratios.

LQ3: Mitigation projects should be self sustaining, given they are intended to provide mitigation for long periods of time (often "in perpetuity"). This requirement typically directs mitigation developers to provide mitigation through removing anthropomorphic influences that disrupt natural process – such as removing artificial impoundments or drainage features to restore hydrologic conditions. Mitigation practitioners generally assume that removing human-caused disruptions to natural processes is the most likely way to assure restored functions will more likely be self sustaining. Therefore, the mitigation areas at WHI should target habitat types that are supported by the existing geomorphic conditions, and focus on removing human-caused alterations. In other words, mitigation actions should remove obstructions to natural process, and not through manipulations to habitat that will require significant engineering or maintenance.

If the mitigation provider proposes developing areas through substantial excavation, using water control structures, or other similar means, greater scrutiny should be applied to the design and post construction monitoring. Sediment deposition, soil destabilization, and other landscape scale changes can occur over longer periods of time than a typical monitoring period – so the duration of monitoring may need to be extended. Clear, feasible contingency plans should also be developed for habitat restoration achieved through manipulation of non anthropomorphic features.

FQ1: Importing fill material will decrease the overall capacity of the floodplain; fully mitigating this would require increasing capacity or managing river flows. Given river flows are already heavily managed (to the detriment of the river as a whole), expanding capacity through fill removal or dike breaching appear to be the only way to directly mitigate effects of importing fill material. Dike breaching can provide capacity in ways that are relatively affordable given the scale of costs described in the materials. Net rise analysis should be performed to weigh the effectiveness of floodplain capacity mitigation.

FQ2: I don't feel qualified to address this question, but it is my understanding that numerous resources are available to help in assisting to predict future conditions due to climate change. I have attended

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technical talks by FEMA and University of Washington representatives on this subject at professional conferences.

SQ1: My experience permitting in-water structures in the Willamette and Columbia Rivers does not give me confidence that the federal and state permitting process can be relied upon to require complete analysis or mitigation for detrimental impacts. I have encountered alarming inconsistencies on nearly every level of impact evaluation – definitions of OHWM, habitat typing, differentiating wetlands from other waters; and inconsistency amongst regulatory staff in evaluating impacts of proposed projects. The most inconsistent analysis has come when evaluating operational effects. Given the future development will include an operating marine terminal, numerous operation scenarios will need to be evaluated with analyses on the potential impacts on fisheries, habitat, and wetland function.

Thank you again for the opportunity to comments.

Sincerely,

Brent Haddaway, PWS
Principal – Cascade Environmental Group, LLC
222 NW Davis St, Suite 317
Portland, OR 97217

Oregon
John A. Kitzhaber, MD, Governor

Department of Fish and Wildlife
Northwest Region
17330 SE Evelyn Street
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January 15, 2013

Mindy Brooks
City of Portland
Bureau of Planning and Sustainability
1900 SW 4th Ave. – Suite 7100
Portland, OR 97201

Dear Ms. Brooks,

The Oregon Department of Fish and Wildlife (ODFW) appreciates your invitation to review technical questions posed by the Portland Planning and Sustainability Commission regarding mitigation of potential impacts from the conceptual development action on West Hayden Island (WHI). ODFW offers the following responses and recommendations related to the questions posed:

Location of Mitigation Actions

The proposed annexation agreement for West Hayden Island (WHI) includes a package of mitigation actions to compensate for impacts to natural resources within the 300 acre marine terminal development footprint. Mitigation will be occurring on-site and off-site (please refer to West Hayden Island Natural Resource Mitigation Staff Report). Please respond to the following questions, related to the City's WHI mitigation approach:

LQ1: The proposed acceptable geography for WHI mitigation actions is the Columbia River floodplain from the Sandy River confluence to the east, the East Fork of the Lewis River confluence to the north and the Multnomah Channel/Willamette River confluence to the south (this includes Sauvie Island). Is this an appropriate geography for WHI mitigation or would you proposed a different geography?

ODFW Response: The above described geography is appropriate for some habitats and associated species of fish and wildlife while inappropriate (too far from impact area) for others. This determination is based on ODFW's Fish and Wildlife Habitat Mitigation Policy which defines mitigation goals according to categorization of habitat impacted and the fish and wildlife species or population being considered. For example, part of the mitigation goal for Category 2 and 3 Habitats is "in-proximity habitat mitigation". "In-proximity habitat mitigation" means habitat mitigation measures undertaken within the same home range or watershed (depending on the species or population being considered) whichever will have the highest likelihood of benefiting fish and wildlife populations directly affected by the development. In ODFW's opinion, the geographic area as defined above can be considered "in-proximity habitat mitigation" for most if not all fish species that would be affected by a development action on WHI. However, mitigation actions off-site would not be expected to benefit certain wildlife populations directly affected by a development action on WHI. For example, the red-legged frog

population on WHI would not be expected to benefit from mitigation actions at an off-site location (e.g., Government Island) because this species has a relatively small home range and based on its dispersal requirements / movement patterns. ODFW recommends that mitigation for habitat losses resulting from a development action on WHI be replaced on WHI (on-site) to the extent possible. If this is not feasible due to the lack of acreage and/or capacity for ecological uplift, then alternative sites within the above described zone could be considered. ODFW recommends preference be given to potential mitigation sites closest to the impact area though it may be determined that far greater ecological benefits could be achieved by securing a large single mitigation site even though it may be farther away.

LQ2: The current mitigation proposal focuses mitigation actions on roughly 176 acres of WHI (including forest, wetlands and shallow water habitat), 470 acres of forest mitigation on Government Island, and a single third site, to be identified in the future, within the larger mitigation geography. Is the size and location of the off-site mitigation actions consolidated enough and large enough to provide significant ecosystem functions (e.g., habitat mosaic)?

ODFW Response: ODFW expects that the proposed mitigation would provide ecological benefits and improve ecosystem functions. However, protection and enhancement of existing habitats does not equal what would be lost on WHI. ODFW recommends maximizing mitigation on-site and focusing mitigation efforts on in-kind habitat creation / restoration to the extent possible.

LQ3: On WHI, staff have identified areas where forest mitigation actions are the highest priority and other areas where shallow water habitat/wetland mitigation actions are the highest priority (see Map 4 in the Staff Report). Is this a reasonable approach? If not, what would you suggest?

ODFW Response: It is ODFW understands that Map 4 uses the Ordinary High Water (OHW) elevation to distinguish between forest and shallow water areas. These areas are not necessarily distinct on the ground as portions of the shallow water areas have riparian forest characteristics. Shallow water habitat and riparian forest are both priority habitats to ODFW. As both forest and shallow water habitats would be impacted by the conceptual development action, ODFW recommends a balanced mitigation approach that results in on-site mitigation of both habitat types, and it appears that use of elevation achieves that.

Floodplain

Based on the concept plan for marine terminal development, roughly one million cubic yards of fill will need to be placed on WHI (one million cubic yards is the net fill; there will be more fill placed within the development footprint and cuts associated with wetland and shallow water habitat). The current draft proposal addresses impacts and mitigation for each habitat type located in the floodplain (forests, grasslands, wetland and shallow water areas); however, it does not directly address the fill.

FQ1: Are there are methods short of balanced cut and fill that would help mitigate for lost floodplain functions?

ODFW Response: Balanced cut and fill that takes into consideration all the functions provided by floodplains, not just water storage / flood capacity, is the only approach to truly mitigate for lost floodplains. ODFW recommends that impacts to floodplain habitat be avoided to the extent possible as it is difficult to re-create / replace floodplain functions once lost. Types of floodplain mitigation include re-connecting floodplains that have been disconnected from their corresponding river or stream. This is typically achieved through the removal / breaching of dikes/levees and dams, weirs and other man-made flood control structures. These structures are present along the Columbia River and confluences of tributaries and have resulted in the disconnect of the river from its floodplain. Such actions would increase habitat diversity, enhance / restore flood capacity. New floodplain and alcove / off-channel habitats can also be constructed.

FQ2: How might the City consider climate change and the potential for additional flood impacts on the island?

ODFW Response: When considering climate change and the potential for additional flood impacts, ODFW recommends the protecting and maintaining of existing properly functioning floodplains and the restoration of degraded / disconnected floodplain habitats.

Shallow Water Habitat

The impacts of development on shallow water habitat will likely include two access ramps (with associated infrastructure) to two docks located beyond the lower extent of shallow water habitat. It is expected that the Port will have to go through a NEPA process prior to development.

SQ1: Given your experience evaluating projects similar to this (Columbia or Willamette River docks), will the outcome of the federal/state permitting process address all natural resource features and functions and require mitigation that fully compensates for detrimental impacts? If not, what functions are not likely to be addressed in a state/federal permit process?

ODFW's Response: Based on ODFW's previous experiences with proposed development actions involving over-water structures, not all potential impacts to fish and wildlife resources are directly addressed by state/federal regulations or permitting processes. Issues and functions that are sometimes not adequately addressed include: impacts to upland habitats, habitat connectivity, and fish and wildlife movement patterns; use of structures by piscivorous bird species and other wildlife, impacts on non-listed species of fish and wildlife, secondary impacts to fish and wildlife from light, noise and human presence, and risks associated with chemical contaminants and the introduction of non-native invasive species (plants and animals). ODFW has written guidelines that address some issues related to certain types of over-water structures (i.e., residential docks); it has been our experience that these are considered during applicable DSL permitting processes.

Thank you again for opportunity to comment on the technical questions as posed. If you have any questions about the above responses please contact me at susan.p.barnes@state.or.us or (971) 673-6010.

Sincerely,

Susan P. Barnes

Susan P. Barnes
Regional Conservation biologist
Northwest region

Cc: Todd Alsbury, ODFW
Liz Ruther, ODFW
Joy Vaughn, ODFW

PORT OF PORTLAND

Memo

To: Rachael Hoy and Mindy Brooks

From: Dana Green and Greg Theisen

CC: Marla Harrison, Susie Lahsene

Date: 1/16/2013

Re: Port response to WHI-PSC Questions # 1-7 [dated12/6/12]

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1) **Describe the rationale behind on site mitigation vs. off site. Timing relationship to NRDA? Is it appropriate to reserve mitigation opportunities on WHI for NRDA mitigation for the Portland Harbor, or is the first priority for on-island mitigation of terminal development impacts?**

   - While on site mitigation is generally preferable in an ecological context, the City's forest mitigation requirements exceed the spatial capacity of the WHI landform and cannot be accomplished on site even with extensive habitat conversion of other special habitat areas [as identified by the City's Natural Resources Inventory]. In order to comply with the City's requirements for forest mitigation, mitigation has to be accomplished off site. The Port's proposed off site mitigation for forest resource impacts is on Government Island, located between 6 and 8 miles upriver from WHI. As this alternate site is co-located with WHI within the Lower Willamette Sub-basin, and ecological watershed planning unit determined by NOAA, it is the Port's opinion that it should meet the definition of proximity to the proposed impact site.

   - Yes. The Port reserves the right as landowner to preserve resource options to meet as yet unspecified but certain federal NRDA requirements to be determined by the Lower Willamette Trustees. As these options do not appreciably conflict with the City's mitigation requirements in like habitat types and there are ecologically appropriate off site options for forest mitigation, the Port does not see a significant conflict.

   - The second question seems to lead the respondent to presupposed options. The city has determined what sort of mitigation is necessary for WHI development. Where is the most feasible and functional gain within the ecological watershed planning unit as determined by NOAA? The first priority of mitigation is to replace lost function; location is of less importance when located within the Lower Willamette sub-basin watershed planning unit.

2) **Has the exact location and acreages of forested, shallow water, wetland and grassland habitats been agreed to by all parties, including state and federal agencies?**

- No. The discussion to date is necessarily conceptual as to project design, development impact, and extent and location of the various mitigation requirements. These will not be determined until there is sufficient project design to initiate the multiple permitting processes and the NEPA analysis. This normally is initiated at 35%+ project design to enable an accurate assessment of the full range of environmental impacts.

- The Port will provide all necessary wetland and shallow water mitigation as determined by the state and federal regulatory agencies through their respective permitting processes.

- The Port will provide forest mitigation based on the City's forest mitigation framework.

- The Port will not provide grassland mitigation in accordance with the City's requirements.

- The Port will conduct the appropriate level of NEPA analysis in accordance with the lead federal agency's determination.

3) **Piecemeal nature of mitigation. Too many small bits?**

- No. The forest mitigation proposals by design fill in un-forested margins and open areas contiguous to existing forest cover, thereby increasing the overall forest habitat patch size and augmenting forest related ecological functions. This strategy necessarily involves site conversion, see Question #7 below. Wetland and shallow water mitigation necessarily are located where site conditions are suitable for sustainable ecological function and the intent is to do this on WHI.

4) **Does the "net gain" in ecological function depend on off-island mitigation work?**

- Yes, the net gain in ecological function occurs within the NOAA defined Lower Willamette sub-basin watershed planning unit. As discussed in #1 above, the City's forest mitigation requirements exceed the spatial capacity of the WHI landform and cannot be accomplished on site even with extensive habitat conversion of other special habitat areas [as identified by the City's Natural Resources Inventory]. In order to comply with the City's requirements for forest mitigation, mitigation has to be accomplished off site. The ecological advantages of mitigating a floodplain forest resource impact on one island on an ecologically equivalent site on another island in close association within the same river reach should outweigh other concerns related to site proximity.

5) **Describe the unique ecosystems value of size and contiguity of WHI habitat.**

- Both island land forms share a common geological and ecological provenance, being formed as a direct result of the fluvial geomorphic processes of the historic free flowing Columbia River. Both islands as we know them today were formed from several smaller islands and sand bars that have aggregated over time under the

influence of the river hydrograph. Subsequent anthropogenic actions have substantially added to the land mass of both islands, estimated to be on the order of a 20-30% increase of land mass on each island. Perhaps the most significant man-caused alterations to the river's ecology include the channelization and subsequent separation of the river from its historic floodplain resulting from the construction of the Columbia River levee system c. 1919. This was followed by the construction of the Bonneville Dam [1934-1937] which effectively altered the annual winter and spring flood regimes. The combined ecological results of these alterations include longer flood interval periodicity and reduced flood magnitude, a reduced /confined floodplain, and constrained lateral channel migration. In addition, both islands were subject to historic dredge material placement on a significant scale, and the installation of spur dikes and groins [this last only on WHI] designed to encourage deposition and aggradation in specific areas.Both islands also share common historic land uses [pre and post European settlement] that have shaped the land forms and vegetative cover of the islands as we know them today.

- Being formed by the same processes [natural and anthropogenic] over time and being located proximally in an eco-regional context, both islands share habitat mosaics unique to islands in a river system. Primary among these is that entire island margins are ecotones transitioning from riverine to terrestrial habitats. In addition, both of these "sand bar" islands have shoaling, shallow, relatively narrow slow flow channels separating their south shores from the south shore of the Columbia River. Being relatively closely located in the same river channel, both islands are subject to the same periodic inundation under the same river flood conditions and subject to the same climate influences. Not surprisingly, both islands share common suites of flora and fauna, including the same invasive species issues. Being located in the mainstem Columbia River, both islands provide essential habitat structure and function for ESA listed fish species in designated critical habitats.

- In summary, due to similar habitats and ecological dynamics, both islands provide similar suites of ecological services and benefits, unique to river islands. In terms of mitigation opportunities, this close an ecological match cannot be equaled at this scale by any non-island sites.

6) Is the mitigation ratio appropriate for ash replacement and is it even possible to replace mature ash on Government Island?

- The WHI site is currently zoned by Multnomah County as MUF 19 with a Significant Environmental Concern overlay. The primary use allowed within this zone is "*Forest practices associated with the production, management and harvesting of timber"* (11.15.2168 A). An SEC permit is not required for "*The propagation of timber or the cutting of timber for public safety or personal use or the cutting of timber in accordance with the State Forest Practices Act (11.15.6404 Exceptions).* Is it appropriate to require mitigation for activities allowed under current zoning by right? Arguably, in light of the currently permitted uses on WHI, and the historical uses of the island, neither of which are burdened with mitigation obligations, it is incongruous for the City to impose mitigation obligations in the manner proposed in this annexation process.

- While the Port is willing to accept the City's forest mitigation framework , it is the Port's opinion that the City has employed several factors to inflate the ratio due to

uncertainties relative to replacement of 70-100 year old tree function, and adding a penalty for "off-proximity" site location [see Question #1].

- Yes, on appropriate sites. Oregon ash [*Fraxinus latifolia*] matures physiologically between 25 and 30 years of age, organismal maturity being defined as full crown/root development and reproductive capability. Like any tree species, Oregon ash provides a changing suite of ecological functions throughout its life cycle. By ensuring the establishment of subsequent generations of trees that will in due course mature and become dominant associates in the floodplain forest, the mitigation proposal provides certainty that the full suite of ecological functions will continue to be provided by the respective age classes of the forest association. Commonly associated with black cottonwood on riparian sites, ash provides a longer lived and more shade tolerant floodplain forest component.

7) Will the proposed mitigation amount to habitat conversion?

- Yes. The establishment of forest cover on currently un-forested sites necessarily involves a direct site conversion from open grasslands or scrub-shrub associations, whether the mitigation is located on WHI or any other site. The City's mitigation ratios for forest mitigation in effect represent an ecological bias toward forested associations.

PORT OF PORTLAND

Memo

To: Rachael Hoy

From: Greg Theisen and Ian Whitlock

Date: 1/16/2013

Re: Port response to WHI-PSC Questions # 8-17, 19, 35, and 87 [dated12/6/12]

Listed below are the Port's responses to additional PSC questions. Thank you for the opportunity to provide input into this matter.

8. How many acres does DSL own vs. Port ownership? Why hasn't the state (DSL) been involved in the conversation? Have they signed off on the proposed mitigation? The same is true for PGE and Bonneville rights of way. Have those issues already been resolved, as stated in public testimony?

The Port purchased the majority of the western half of Hayden Island from James River Paper Company, Inc., Columbia Willamette Development Company, and Portland General Corporation (PGE) in 1993-1994. The island has a complex history of fill from development and dredging operations. Some shoreline areas west of the BPA power line right-of-way do not have settlement deeds from the Division of State Lands (DSL), the statutory owner of filled, submerged and submersible land. The Port and DSL have had several conversations about the ownership of these lands, beginning as early as 1993. At this time, unresolved title issues remain with respect to some 50 to 65 acres of filled, formerly submerged or submersible land.

DSL has informed the City that, while it takes no position on the annexation itself, "the proposed open space zoning appears to be consistent with DSL's vision for the future use of those lands (mitigation/restoration)." (Reference: e-mail from Jim Paul, Assistant Director, DSL, to Eric Engstrom, November 27, 2012.)

9. Is there a legal reason the Port cannot mitigate on non-port land? And do or will the Port receive credit for the mitigation? Can the 500 acres be sold to a third party with provisions for the Port to mitigate on the land for the next 100 years?

In order to perform mitigation work on lands determined to be owned by DSL, the Port will either need to acquire the lands (in fee or through some other appropriate mechanism, such as an easement), or conduct the work in cooperation with DSL. The allocation of credit would depend on the specific approach taken. In any event, mitigation on these lands will be consistent with the proposed open space zoning, a result called for in the City's Resolution No. 36805 (July 29,

2010). The Port has not agreed to a 100 year mitigation commitment, but any conveyance to a third party could be structured to provide for conservation measures on the subject land.

10. Who will ultimately own and manage the protected open space? Long term Port management and ownership of the 500 acres is not acceptable. My overarching concern is the "custody" of the 500 acres that the Port will continue to control.....I am hoping for an unaffiliated group to be the ultimate authority.

City Resolution No. 36805, which guides this annexation process, calls for open space zoning of the 500 acres (together with marine terminal development on the remaining 300 acres). It does not call for the Port to relinquish interests in any of the land. Nevertheless, the Port has agreed in concept to enter into a restrictive covenant with a third party precluding the use of the 500 acres for any purpose other than those allowed in the proposed open space zoning and plan district documents. (Reference: August 3, 2012 IGA discussion draft.)

11. How do we reconcile this with our desire for on-site mitigation over the next 100 years (which the Port is responsible for)?

See the responses to Questions 9 and 10. The Port has not agreed to a 100 year mitigation commitment.

12. Who will be the third party to the IGA to protect the open space interests?

See the responses to Questions 9, 10, and 11. Note that the open space will be protected by city zoning and plan district regulations, and that the Port has agreed not to seek any change in those regulatory protections. The third party will likely be an entity with a conservation mission, and experience in managing land for conservation purposes.

13. Assertion of the Tribes that treaty rights come into play either with respect to fish issues or with respect to treatment of the island itself.

14. If this annexation and development were passed by City Council - what is the impact on relationships with Tribes – especially those who have Federal Treaty rights on the Columbia and Willamette?

15. How does the city propose to close the gap between tribal testimony and the proposed annexation and development of WHI? Has there been staff outreach post hearings and are there plans for addressing tribal concerns?

These questions appear to be addressed directly to the City. We understand that, while the Advisory Committee did not include a tribal representative, the four-year annexation process has been inclusive, and has offered many opportunities for Native American voices to be heard. Ms. Rose Longoria, of the Yakama Nation, attended many Advisory Committee meetings over the past two years. The Port understands that City representatives have reached out to both the tribes and the Columbia River Tribal Fish Commission, and have met with the Grande Ronde Tribe several times, beginning early in the process. Tribal representatives were also present during at least one field tour of WHI.

16. Can the IGA contain a mechanism that provides tribal feedback (design, mitigation, continued communication through development and management)?

The IGA will provide for public involvement in review of the open space strategy and other matters, which the Tribes may take advantage of to express their concerns.

17. Describe the tribes role in process – how did we involve them?

The City will speak to the question of how the Tribes were involved in the process thus far. The Tribes will have a significant role if future development permitting processes, should they wish to participate. Any future marine terminal development will be subject to rigorous permitting requirements whose purpose includes protection of fisheries and other natural resources. Port development action would not be permitted to interfere with legally protected tribal fishing rights, and impact to listed species of fish will be fully evaluated by NOAA. Federal laws protecting sites of cultural significance, which would be integrated into the NEPA and permit issuance process, include the Historic Preservation Act, the Native American Graves Protection and Repatriation Act and the Archaeological Resource Protection Act. State laws having similar effect, administered by the State Historic Preservation Office, would also apply.

19. Has Planning and Sustainability and BES sorted out concerns that the city might face significant liability if it allows filling of the floodplain without mitigation? Relationship to FEMA lawsuit?

The brief answer to this question is that the FEMA litigation does not apply to this annexation process and the City does not face "significant liability if it allows filling of the floodplain without mitigation." The so-called FEMA litigation involved allegations that FEMA's floodplain mapping activity enabled floodplain development which might adversely affect listed fish; consequently, consultation under the ESA is required. The point of the litigation was to force consultation in circumstances where it might not otherwise have occurred (despite some level of federal involvement in the land development process). But in the case of WHI, any filling activity related to marine terminal development (including site preparation) will require federal permits, and ESA consultation will be conducted, resulting in any necessary ESA-related conservation measures. There is no requirement for City action in response to the FEMA litigation.

What follows is a more detailed explanation. The FEMA litigation was based on the theory that by drawing floodplain maps and issuing floodplain insurance, FEMA has effectively encouraged development within environmentally sensitive areas, with a resultant adverse impact on endangered species and their habitat. Because of this cause-and-effect connection between insurance and injury to fish, FEMA was required to consult with NMFS under Section 7 of the Endangered Species Act. The consultation resulted in a Biological Opinion (BiOp) that found adverse impact and "jeopardy" to listed species, and set out a number of measures FEMA must follow in order to avoid jeopardy. This litigation took place in Washington state first, but an equivalent case was later brought in Oregon and FEMA's response here is largely identical.

FEMA is required to implement various measures to improve circumstances for listed species. Some of these measures have little direct effect on developers. (For example, FEMA was required to: notify local jurisdictions of their potential responsibilities under the ESA; make certain changes to FEMA's mapping and "community rating system;" and revise the way FEMA evaluates levees.) FEMA must also insist that if local jurisdictions want to obtain the benefit of flood insurance, they must modify their regulations to incorporate protective measures. The goal of these local regulations will be to avoid adverse effects on listed fish and their habitat (or to provide mitigation if impact is unavoidable). Consequently, a developer who needs a federal permit and is therefore required to consult with NMFS will always be able to bring the results of that consultation to the local jurisdiction to demonstrate compliance. For Port of Portland in-water operations, there will always be consultation and a record of NMFS's decision on the proposed activity or facility. Therefore nothing further is required by FEMA (or the City of Portland) as a result of the litigation.

FEMA's guidance, issued as a result of the litigation, clearly allows local authorities to rely on the results of federal permitting and ESA consultations.

35. Status of Jones lawsuit RE wetland fill on WHI? Does it impact this?

Approximately 11 years ago, Mr. Jones files a lawsuit against the Port of Portland, Corps of Engineers, and others, alleging various violations of the federal clean water act. The US District Court ruled in favor of the defendants and against Mr. Jones, and he appealed. On October 24, 2012, the US Court of Appeals for the Ninth Circuit issued a short decision affirming the district court's decision in all respects. On January 9, 2012, the Ninth Circuit rejected Mr. Jones's motion for reconsideration or rehearing en banc. While Mr. Jones may appeal to the US Supreme Court, it is highly unlikely that there will be any further action in the case. In any event, even if Mr. Jones were to prevail, nothing in the case would have any effect on the annexation proceeding.

87. There are various clauses that allow the Port or the City to kill the IGA. What impact do these clauses have on the enforceability? What is the purpose of these caveats?

IGA's typically provide for termination by the parties for many different reasons. Termination rights do not cause IGA's to be unenforceable. The proposed WHI IGA would impose obligations on the Port that would survive termination, including obligations to perform certain conservation work into the future. Those terms have not yet been finally agreed upon, but the object will be to insure that long-term mitigation obligations, once triggered, are carried out even if the agreement is terminated for other reasons.

City of Portland
RIVERS OFFICE
Office of Healthy Working Rivers

ENVIRONMENTAL SERVICES
CITY OF PORTLAND

MEMORANDUM

TO: **Eric Engstrom, Bureau of Planning and Sustainability**

FROM: **Ann Beier, Office of Healthy Working Rivers**
Mike Rosen, Bureau of Environmental Services

DATE: **January 22, 2013**

SUBJECT: **Local Review of Wetland Mitigation on West Hayden Island**

The Bureau of Environmental Services (BES) and the Office of Healthy Working Rivers (OHWR) acknowledge that through the ESEE analysis and a lengthy and thorough annexation process, the Port has demonstrated that it cannot avoid an impact to the wetlands within the development footprint. However, BES and OHWR do not concede the City's jurisdiction and authority over the assessment of existing wetland resources and the mitigation proposed to replace lost resources and functions.

The following list details why the City should maintain local review authority of wetland resources.

1. Not requiring local review could set a bad precedent and have unintended ramifications for other City environmental protection programs.

This would set a bad precedent City-wide. Regulating wetlands is an established role for the City and we continue to exercise this authority in various arenas across the City. Simply relying on state and federal regulations to substitute for City review has not been an effective policy in the past. In numerous examples the City's review of wetland resources has identified wetlands that would have been absent and consequently unprotected by the state or federal authorities, and in some instances the City has required additional mitigation for resources and functions not covered by the state and federal regulations. While it is true that wetland science and mitigation policy has advanced as compared to other natural resource regulations, it is still far from perfect, we are still losing wetland acres to fill, and replacing functions is a relatively new approach. Other groups within the City are currently looking for ways to protect and effectively regulate wetland resources because of the multitude of benefits they provide, including floodplain protection and stormwater management. The position that there is no need to regulate wetlands because state and federal regulations are adequate could have unintended ramifications for other programs.

2. Existing information about wetland resources is conflicting.

There is conflicting information about the existing wetland resources. This site has historically been the subject of litigation and widely differing wetland assessments, ranging from an assessment of 80 wetland acres east of the BPA easement to 20 acres for the whole island. The current assumption of "10.2 acres" of impact appears to come from a modified delineation that is almost 20 years old and based on hydrology assumptions that the 2012 PHS report indicated were complicated by other factors.

Wetland assessment timetable:

1987 FEIS indicates **80 acres** of wetland on WHI east of BPA easement
1995 Fishman delineation indicates **20.5 acres** on WHI (OHW 12-13' NGVD)
1997 COE "Halloween delineation" **30.89 acres** (OHW should be 17.3' NGVD, not 12-13' NGVD based on high tide line)
2005 Jones alleges 20 acres of fill
2006 COE issued SOF saying OHW changed from 17.3' NGVD to 15' NGVD (so no 20-ac fill)
2010 Entrix report states **59 acres** of wetland on WHI (references 1999 Port "wetland inventory" which appears to be a ground-truthed NWI)
2012 City of Portland NRI reports **48 acres** of wetlands on WHI based on Port 2007/2003 NRI. (**10 acres** impacted within proposed Industrial Zone)
2012 PHS wetland mitigation feasibility study refers to COE 1998 wetland determination letter to the Port (references hydrology at 12' contour level) and states **10.2 acres** filled in proposed footprint

3. DSL/COE may not require full mitigation for loss of wetland functions.

One of the goals stated in the City Council's directive to assess the feasibility of building a marine terminal on Hayden Island required that environmental mitigation would yield a net increase in ecosystem function. The regulatory agencies tasked with wetland impact mitigation (DSL/COE) assess the area within a delineated boundary and require wetland replacement of like size either on or off-site, and off site may be in an entirely different watershed. The City is concerned that important functions that are separate, but integrated with wetland functions in adjacent habitats, are often overlooked. This functional oversight and lack of protective regulation is echoed as a concern by all four technical experts that weighed in on several questions asked by the PSC (see these 4 attachments).

Maintaining regulation of wetlands by the City will ensure that functions vital to the recovery of listed and at-risk species and habitats are preserved and fully mitigated in order to meet the Council's goal of achieving a net increase in ecosystem function. Wetland functions potentially impacted include reduced habitat connectivity and increased fragmentation impacting fish and wildlife movement, and secondary impacts to species due to noise, lighting, introduction of invasive species, soil compaction, contamination risk. One technical expert stated a lack of confidence in state and federal agencies to enforce compensatory mitigation of wetlands, describing "alarming inconsistencies in nearly every level of impact evaluation (definitions of OHWM, habitat typing, general wetland delineation) and …inconsistency amongst regulatory staff in evaluating impacts of proposed projects."

Additionally, both the COE and DSL require development to avoid and minimize impacts of wetlands as part of mitigation sequencing. The state and federal mitigation sequencing will require the Port to demonstrate avoidance and minimization of impacts to all wetlands on-site. Requiring the Port to mitigate for impacted functions (separated from the physical wetland acreage) becomes very difficult. Adding the City to this discussion, so we can be clear about the functions the wetlands are providing that we want to see replaced, should be mandatory.

4. Wetland mitigation will likely be carried out by a Port tenant, unfamiliar with local environmental issues and regulations.

Wetland mitigation will potentially be carried out by a Port tenant, not the Port, all or in part. The tenant or third party is not a party to any IGA or annexation agreement. In addition, it is likely to be an entity

unfamiliar with local issues, and ill-equipped to deal with the myriad complicated and sensitive environmental issues on WHI. The Port is a long standing member of the Portland community and has demonstrated both a vested interest in, and a proven track record, for successful mitigation efforts. Retaining the City's jurisdiction ensures that any third party mitigation meets the same level of success provided by past Port projects.

5. DSL is pursuing 404 assumption, which could lead to changes in jurisdictional boundaries and lower levels of protection.

Regulations at the State and Federal level are subject to changes out side the control of the City. DSL is pursuing the assumption of CWA Section-404 regulation that may bring changes to state regulatory authority and elimiate federal authority altogether (these changes could involve adopting federal jurisdictional boundaries, which could lead to lower levels of protection).

6. Conditions on WHI are not ideal for wetland mitigation as indicated by the 2012 PHS Mitigation Feasibilty Study commissioned by the Port.

In 2012, the Port commissioned Pacific Habitat Services to complete a Mitigation Feasibility Study for West Hayden Island. This report indicates that conditions on WHI are not ideal for wetland mitigation. The report details excessively drained soils, variable hydrology from Columbia (seasonal, tidal, boat wakes) and invasive species issues. The PHS proposal includes bank strengthening through bio-engineering or potentially, hardening via riprap, which does not seem feasible or possible to permit. Additionally, a costly engineered "aquitard" to counteract excessively drained sandy soils may be required as part of the mitigation solution. Climate change could significantly negatively impact proposed north shore mitigation, due to the river connection. Ideally, the Port would establish a viable mitigation bank with reserve credits for the development.

7. It may be difficult for the City to isolate the review of shallow water impacts and mitigation.

The Port or the Port's tenant could submit an application for wetland and shallow water impacts and mitigation in one permit. In this case, isolating shallow water impacts and mitigation from wetland impacts and mitigation could be complicated and inefficient for both the applicant and the regulating authorities. It may be difficult for the City to review shallow water only.

8. Several different mitigation scenarios are proposed for WHI, the mitigation site should be designed holistically.

Forest mitigation below ordinary high water (OHW) would complicate future mitigation in those areas. City staff has conceptualized hydrologic modification possibilities in areas below OHW, however these concepts need to accommodate all proposed mitigation actions in order to function. The mitigation site should be designed holistically. If phased mitigation is the desired vision for WHI, conversations and coordination with other regulatory agencies need to occur. Once we identify a site as a "mitigation area," it will be difficult for another regulating agency to also allow that area to be mitigation for some other impact (eg. wetlands, NRDA). For example, if trees are planted and invasives controlled for forest mitigation, then at a later date a new channel is proposed to "enhance" hydrologic connections, there could be potential to drain surrounding areas and negatively impact wetlands.

9. DSL and the COE do not focus on wildlife when reviewing permits.

The focus of DSL and the COE when reviewing permits is on a spectrum of functions provided by plants, soils and water, not on wildlife. Interactions between the wetland, adjacent habitat and wildlife are complex and often outside the scope of their jurisdiction. Mitigation may not compensate for functions extending beyond the wetland boundaries and may not replicate synergistic relationships between wetlands, wetland buffers, and surrounding habitats. The City has produced a natural resource inventory for the island and has specific, valuable knowledge about habitats and interactions on the island from working to produce the NRI. This knowledge base should be part of the team determining mitigation for impacts on WHI. It is unlikely the other resource agencies would have the resources or mandate to review the City's NRI report, let alone the authority to regulate outside of their jurisdictional wetland boundary.

10. Without local review, the City has no avenue to determine if the project achieves a net gain in ecosystem function.

Without local review, the City has no avenue to determine if the project achieves a net gain in ecosystem function. State/federal wetland regulations clearly have the potential to fall short of "no net loss." In fact studies show we are still losing wetland acreage and functions nationwide despite existing regulations. If we pass on review, the City has no ability to evaluate if the project is achieving its environmental goal. This fact sets the WHI annexation apart from other review cases in the City and should be a consideration for the City's policy decision on wetland review.

11. The City has a history of added value through local wetland review.

The Bureau of Development Services and BES have a long history of identifying appropriate wetland protections and providing added value in proposed mitigation. Examples include identification and protection of wetlands, creation of amphibian breeding pond habitat, identification of appropriate stormwater discharge points, and combining a mitigation project with a public wetland enhancement effort. In all cases, inclusion of local wetland review resulted in equivalent or improved wetland mitigation outcomes that were additive and not redundant to the state and federal review.