9/25/12

TO: Chris Smith, Planning and Sustainability Commission

FROM: Eric Engstrom

RE: Response to WHI Questions

Below are staff responses to the questions you sent in an email dated 8/26/12.

1) Demand Forecasts:

I've had a chance to review the Port's Cargo Forecast and Capacity study and have a number of questions:

- **My understanding is the terminal proposal is focused on autos, grain and bulk materials, is this correct?** Yes
- **Is there any consideration of break bulk or liquid bulk on WHI?**
  Liquid bulk: no – existing liquid bulk terminals have the capacity to handle all expected growth in the 25-year horizon.
  Break bulk: possibly – while existing terminals have enough capacity to handle projected breakbulk growth, there may be some advantage offered by WHI with its more efficient ship to rail configuration. Also, WHI might be a good location to manufacture or assemble large bulky objects for export that cannot easily be trucked over the highway system.
- **The forecasts are essentially all assumptions of steady growth rates - reality of course is lumpy. What are underlying drivers that will affect this growth? For example is there an effort to recruit another bulk category to the Port of Portland?**
  The underlying drivers are projected growth in the Asian/Pacific economy, and long term agricultural prices. Because this is a 25-year long range planning exercise, we are not as concerned with the lumpy year-to-year changes. Similar to how we forecast and plan for housing growth – year to year growth in housing production cycles up and down with business cycles, but long term averages are still relevant – a 25-year period will include several business cycles of higher and lower demand. Marketing efforts cannot really begin until land is zoned for development. The facility at the Port of Longview may have been built in Portland if we had had the land available at the time. Another factor is the fact that several of our existing grain terminals are near the end of their useful life, and are functionally obsolete (from a rail access point of view).
- **FYI, when Susie Lashene called around to ask if we had questions, I asked for more years of history in each category. I'd like to understand the volatility in the commodity flow rates.**
  The best summary of this is on page 6-15 of the Public Cost/Benefit Analysis. It shows cargo tonnage in the Lower Columbia from 1962-2007. It is a good illustration of the way long term trends and short term "lumpiness" plays out.

The City does not take too much stock in individual commodities, and year to year shifts. Commodities will change as technology and economies change. Nobody would have predicted wind turbine market 25-years ago. That said, grain and dry mineral bulks are basic commodities that are necessary in any modern economy – they have some amount of long term staying power.

2) SB766 Status

Is this project eligible for SB766 status? If so, does the Port plan to pursue this? If the Port does not, shouldn't the IGA specify clearly that they are forgoing that option?

Yes, in theory, 766 could have an impact on WHI. But as a practical matter, no, it is highly unlikely that 766 would actually be used WHI. This is a non-issue, for several reasons:

- A lot of permitting action on WHI will occur at the federal level. For example, docks will be in-water, so ESA consultation will occur, and there will be an EIS. Such projects are not eligible under 766.
- Federal funding likely be used for roads and rail work, and will trigger ESA consultation and EIS - again not eligible.
- The Port has stated publicly and in writing that they do not support 766 use on WHI.
- Finally, the expedited process offered by 766 is not any faster than the City's existing permitting process. In the absence of the above noted issues, 766 only offers a process advantage if there is a local discretionary land use review, which is not currently required by the proposed zoning for WHI. The marine terminal would be allowed by right, so there would be no specific reason to seek 766 relief, even if you could find some element of the project that was eligible.

It should be noted that other entities besides the Port may nominate the site for 766 status, perhaps for symbolic reasons. The City will likely make its own 766 nominations, and we intent to take a comprehensive look at what makes sense overall/citywide, as part of the Comprehensive Plan work. For this reason, staff does not support pre-determining this now via a site-specific IGA.

3) If only 300 acres of the island are being proposed for development, why don't we just annex those 300 acres? (I think I know the answer to this, but I want to validate my assumptions.)

Because the 500 acres would not be as well protected if it remains outside the City, with its existing rural farm/forest zoning. The City zoning can offer a greater level of permanent protection for those acres. And, Portland Parks wants to manage the site, while Metro and the County do not.

4) Climate Action Plan consequences - do we have any assessment of whether this terminal would decrease or increase overall GHG emissions in the Pacific Northwest? Are there are impacts relative to our Climate Action Plan?

Development of WHI for marine terminal purposes is generally expected to help us reduce our GHG emissions. The CAP includes development of efficient intermodal freight infrastructure as an objective (Objective 7, page 45). There are also objectives and actions about protecting and restoring natural areas, and adapting to climate change in the CAP too (Urban Forestry and Natural Systems, page 51; Climate Change Preparation, page 56).

There are several dimensions to this question, as it relates to WHI:

Freight movement on an ocean-going ship is significantly less carbon-intensive than other freight modes:

CO2 emissions - grams per ton-mile (estimates from a variety of sources)

- ocean-going ship: less than 10
- inland waterways barge: 15-20
- rail: 20-30
- truck: 65-135
- air: 100-1000

a nice graphic from MIT:
http://web.mit.edu/newsoffice/2010/corporate-greenhouse-gas-1108.html

In general, this means we want to develop infrastructure that brings ocean-going ships as far inland as possible, and connect those ships with barge or rail. Right now, the Columbia River Shipping channel depth permits large ocean-going ships to reach Portland/Vancouver. If market demand plays out as projected, and the Port of Portland does not develop WHI, some demand may be met by expanding other downstream Ports - Longview, Kelso, St. Helens, Astoria. This is already happening (for example, the new grain terminal in Longview). Failure to develop sufficient marine terminal capacity in Portland/Vancouver will encourage more of those facilities to develop farther downstream, shifting freight to a more carbon intensive mode. This is a significant impact, as the emissions from the different modes differ by several orders of magnitude.

It is estimated that each acre of forestland and grassland on WHI sequesters approximately 0.6 tons of carbon annually. This equals as much as 180 tons sequestered annually, for the 300 acres of development impact area. To put in perspective, a typical household produces up to 20 tons annually (therefore, the forest sequesters about nine households worth of emissions). Consider that 8-9 million tons of grain moves through the new terminal in Longview annually, arriving from inland areas by barge or train. If that grain had instead been loaded to ocean-going ships in Portland, it would lead to a reduction of 1,944-7,936 tons of shipping-related carbon emissions that could have been saved annually (ten to forty times the carbon sequestration value of WHI forests, or

several hundred households worth of emissions). Assuming the price for a carbon offset credit is about $10 to $30/ton, this equates to a theoretical lost benefit of $19,440 to $238,080 annually.

The WHI plan is based on a large "unit train" loop design, which facilities efficient train movements. No other Port of Portland facility has this capacity, which means that today many trains must be broken up in rail yards before they can be loaded or unloaded. WHI development would give Portland the ability to directly load and unload large industry-standard trains to/from ships. For this reason, WHI development would reduce local train-related emissions by eliminating extra trips from the rail yards to the marine terminal, making the local freight rail system operate more efficiently.

Additional downstream port development likely require development of additional truck and rail infrastructure along the Lower Columbia. Existing roads and rail infrastructure on the Oregon side of the river are particularly ill-equipped to handle growth. Portland/Vancouver is the only location in the Lower Columbia with access to the deep shipping channel, the interstate highway system, and two competing transcontinental railroads. Building new infrastructure elsewhere in the Lower Columbia would have its own environmental impacts. In general, maximizing existing infrastructure will minimize GHG emissions because building large scale infrastructure is a fairly carbon-intensive activity. This is part of our effort to plan for a compact urban growth boundary, building up rather than out.

Meeting marine terminal growth demand elsewhere in the Lower Columbia will also potentially increase emissions from car and small trucks in the region, because the majority of the longshore workers and firms that provide logistical support for marine terminal operations are based in Portland. There is an existing cluster of businesses located in Portland built up around the Port. In other words, allowing the future demand to drift to downstream ports will spread out this industry, and could put more service trucks and longshore cars on I-5 and/or Highway 30.

PBOT has also modeled the local carbon impact of the roadway traffic on Hayden Island. With development there would be a local increase in carbon emissions on NHID, from Port-related traffic.

Annexing and protecting 500 of the 800 acres on WHI as open space would add significant acreage to the City's inventory of protected natural areas, consistent with Objective 13 of the CAP. Without this annexation and zoning action, those acres would remain as farm/forest land, with no long term land use agreement.

Some members of the AC asked about sea level rise and the impact to WHI. The best information we have on that is from two sources:

- Sea-Level Rise for the Coasts of California, Oregon, and Washington: Past, Present, and Future. Committee on Sea Level Rise in California, Oregon, and Washington. National Research Council. 2012.
- Sea Level Rise in the Coastal Waters of Washington State. Washington Climate Action Group. University of Washington. 2008

Under most modeling scenarios, sea level rise is not a direct threat to the feasibility of a WHI marine terminal. Due to coastal geological uplift, sea level rise estimates for the Columbia Estuary over the next century is measured in inches, not feet. The more likely scenario would be disruption to normal hydrological cycles resulting in less snowpack and more river flooding throughout the Northwest - affecting hydropower generation, salmon survival and water resources in general. Because the flow of the Columbia River is heavily managed, it is not clear if this would actually lead to additional food events on WHI. Keep in mind that increased flooding would also impact land-based transportation infrastructure.

5) Rail Network considerations

- Several activists have suggested that the projected level of rail traffic accessing the terminal is inconsistent with forecasts for future rail growth - particularly passenger rail - in the corridor and over the bridge. What rail improvements does the terminal plan require if any?

The IGA includes advocacy for two projects to improve rail efficiency overall (the North Portland Junction and the rail spur to WHI). The WHI facility by itself would actually improve rail flow efficiency in the region because it would have single "unit train" loop. This allows the train to arrive and unload its cargo as one unit, rather than being broken up in the rail yards, and shuttled back and froth to the terminal. True high speed would need separate track, with or without this project. There is a white paper (North Portland Rail Analysis – Summary of Existing Studies) completed by staff that summarizes what we know about the rail system impacts.

As you noted, the IGA does not mention the rail bridge upgrade.

- Have the proposal's assumptions about rail operations been vetted against ODOT and WashDOT plans for passenger rail?

See the white paper noted above. We have had meetings with the railroads and ODOT. They were involved in review of the white paper, and reports from both DOTs are referenced in the white paper.

- Will the rail improvements necessary to access the terminal be publicly funded or funded by the railroad companies?

Not determined, probably both. For purposes of the Cost/Benefit we assumed public funding. Like the WHI bridge, the rail spur project is currently listed on the Metro RTP.

6) The report mentions an existing waste water outfall on the island. I'm curious about the purpose and function of this.

It is the outfall for the entire City's sewage system, near the rail bridge.

7) Port Contributions to Island Security

The report mentions that the Port provides some security services on the Island today and might increase funding if this terminal is built. What services are provided today and what problems are they intended to address?

Periodic patrols by Port employees, with occasional coordination with County Sheriff or Portland Police. The primary issue is the occasional presence of homeless or transient youth on the site.

8) North Hayden Island Drive

I would appreciate a briefing session (probably including PBOT staff) that covers:

- proposed street design designations for the street
- access points now and in the future from the street to neighboring properties/neighborhoods
- likely crossing treatments and locations
- current assumptions about how the CRC will provide Island access - both for autos and transit

We can arrange a more detailed street design briefing. In the meantime:

- We propose to change the classification from a Truck Access Street to a Major Truck Street. The design classification would be "Urban Road".
- The street serves the Mall, the manufactured home community, and a number of industrial properties east of the railroad corridor. The access points are expected to remain the same, though the WHI Plan proposes some intersection and crosswalk upgrades.
- Several potential crossing upgrades are identified on Attachment C to the IGA, which would be upgraded to meet City standards for the proposed classification.
- CRC interchange designs are in flux, but the most recent planned configuration is shown in a drawing as part of Attachment C to the IGA. Additional meetings are underway with CRC staff to consider other alternatives.
- The proposed NHID upgrade may include a continuous separated bike/ped facility extending from the LRT station to the WHI recreational trailheads. This would significantly improve walkability and transit access for the community.