



Bureau of Planning and Sustainability

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West Hayden Island Technical Work Session #2 Meeting Summary September 16, 2011

Agenda

9:00-10:00 – Operational Efficiencies Analysis

10:15-11:15 – Rail Layout Analysis

Operational Efficiencies

Staff gave a brief presentation of City Council's resolution and contractor's scope of work as it relates to the efficiencies of deep water marine terminals, and provided some initial 'take-aways' from the draft report. The focus of the discussion for the work session was on additional efficiencies that could be considered and whether certain efficiencies may not be feasible. The consultant, Worley Parsons, had staff in attendance to provide clarification to their reports.

Comments from Technical Reviewers (TR), Advisory Committee (AC) members and Worley Parsons (WP):

Additional Efficiencies

(TR): The report could benefit from looking at other Pacific Northwest (PNW) terminals. Longview is the newest grain terminal in the U.S. and may provide newest technology.

(TR – 2 comments): Having a barge grain collection terminal can remove these operations from the marine facility. This is known as a mid-stream operation. A transfer terminal could be located in the Tri-Cities area.

(TR): Removing processing operations from auto terminals can reduce storage and dwell time, but this depends on the auto companies operations.

(TR): I have some confusion regarding the report including only one potash terminal. The report should explain why other comparables weren't used in other cases. It seems that the new Westwego terminal in Louisiana could offer information on new terminals along a river system.

(TR): It may be good for the report to clarify why certain efficiencies are used only in certain situations. Some of the findings in the report may be a little out of context, and may be the result of unique situations at play, rather than a general efficiency that could be deployed anywhere.

(TR): There is a difference between operational efficiency and land use efficiency. Their objectives are different and an increase in one doesn't result in an increase in the other.

(TR): As an example to the above, the Port has three auto terminals and they all operate under the different standards of the operators. Some do processing on site, some move to off-site processing and some do processing at dealer. They each have their own ways of increasing efficiency based upon the specifics of their operations.



(TR): I'm not sure that there is enough information on the auto and potash terminal operations to be able to make the distinction whether operational efficiencies can be applied to other terminals.

(AC): It is difficult to form a comparative analysis on these terminals. What is the best way of measuring the efficiency? It seems there are various ways of measuring this, some mentioned in the report. Throughput per acre? Capital/Revenue per acre? Jobs generated per acre? It may be helpful to put this information into a form or table for comparison. Also, from an auto terminal perspective, the examples don't include the rail loops. We need a better understanding of how rail is measured. Lastly, the PNW grain ports have the unique feature of being able to ship regionally via barge. How does this affect rail needs?

(AC): There is a question for what type of technology improvements are required for 'just in time' delivery and loading.

(AC): I have several questions about the forecasts used in the study and the report's scope. First, there seem to be issues or errors in the tables, such as the demand shown in Table 1. How do the demand needs line up with the capacity, and how are the selection of terminal types justified? Why were certain terminal types picked for study? Is there a better selection methodology? What happened to a review of the Asian ports? It seems that a little more discussion on the types of technology working here would provide more clarity.

(AC): Context should be considered in these studies. Issues such as the labor regulations and markets and their differences in different areas should be considered.

(TR): References to the forecasts need to be clarified throughout the report to better make the argument for the selection of terminal types.

(AC): Is there a way to update the information to address need?

(AC): Project staff will be contracting out to update the forecast numbers moving forward.

Feasibility

(TR): Direct Hit option could be an issue. Is Direct Hit really the trend? Our experience is that this is the opposite of where most operators want to go. Most ships need 3-4 sets of unit trains to fill, so it is hard to stack trains for a direct hit from trains to the ship. Most operators plan to invest in adequate storage to load the ship. For potash, a lot of the loading onto a ship consists of a blending of different grades of potash. Portland stores a lot of additional grades of potash on site and would not want to have to coordinate the blending as part of a direct hit operation.

(TR): Ten years ago, there was a big push to consider direct hit, but there seems less interest in pursuing this.

(WP): As a point of clarification, direct hit wouldn't be the sole method of loading. Generally, operators want direct hit to supplement the storage, but not to replace it.

(TR): There are some issues with vertical storage. In NY/NJ, BMW has a vertical storage parking garage but it is used as an overflow area due to issues with operational costs. In NY, above three stories, the cost per slot increases dramatically. Often the viability of vertical storage may have something to do with the value of the auto. I worked on a report for the Port of NY/NJ, which includes a section on auto efficiency.

(WP): There is a grey area between capital costs and operational costs.



(TR): On Direct Hit do issues on reliability, as mentioned in the report create a non-starter situation. From a cost/benefit perspective, the amount of rail infrastructure improvements needed for direct hit could outweigh any benefits.

(TR): The benefit often depends on the amount of throughput per acre desired. However, there is always a need for additional storage and surge capacity.

(TR): Vertical storage may work in specific situations. As an example, the new Nissan Leaf needs a power grid which may be easier to do within a structure. However, it may not be feasible for all cars to be in a structure.

(TR): Access to the 2-track BNSF mainline could make direct hit a real problem in conjunction with the proposed increases in passenger rail to use that line.

(AC): The report gives some ideas but we need flexibility in operations and can't necessarily dictate technology solutions onto West Hayden Island planning.

(AC): I have a question about how these types of improvements like a garage are financed. There is experience in England for certain types of partnerships with the public ports, but here the terminal operators generally control the development.

(WP) – I'd like to summarize and partially respond to what we have heard about some of the main issues:

- Direct hit is an issue and would only be considered as a hybrid system with storage.
- Vertical storage such as a garage could work in conjunction with surface parking.
- Some Asian ports have storage for electric cars and may be worth exploring.
- The value of the car can be considered for structured parking.
- Direct hit is a method to increase the throughput of goods and to limit handling damage.

We will also consider the performance of PNW ports when finishing the last portion of our report which is the last task of the scope.

(Public Comment): As a member of the public involved in the high speed rail effort, I feel it is important for any project to consider the potential effects that an increase in passenger rail or highspeed rail could have on the entry and exit onto West Hayden Island.

Rail Layout Analysis

Staff gave a brief overview of the City Council parameters that dictated the size and location of development and reviewed the scope of work. Staff presented the five rail layouts created by Worley Parsons (WP), and reviewed the alternative layout that staff had asked WP to consider where the rail loop projects south of the east/west power line corridor. Discussion focused around the elements that people liked and those that may be problematic, focusing on the entry/exit from the mainline, the rail loop, the terminal interface and any other issues. A table was presented with this focus, and a summary of the comment presented in the table occurs at the end of these notes.

(AC): It is not clear from any of the layouts how the bridge and roadway connect through the development to the developed part of the island.

(TR): I am assuming that the curves and the slope off the main line are to acceptable standards, but we would need to see detail for the track to determine if dual operations can operate at the terminal.



(TR): It is hard to evaluate the rail without cross sections. Are both motions ok into and out of the terminal? I trust that the engineering has been factored. That said, Option A offers the fewest curves and appears to be the easiest to get on and off.

(TR): Option D appears to have good points in direction.

(WP): For all drawings, the layout works in both directions, the loop has 4 staging areas, the movement off the main line, track spacing is between 15' and 21' (missed some details), there is 21' spacing between bulk and auto staging areas. The balloon or tear drop shaped loop has ability for dual movement, but standard loop may have more difficulty with this. Layouts factored getting entire train off of sloped track before allowing loading/unloading operations.

(TR): Loop may not be an efficient mechanism for loading and unloading autos.

(WR): This is true, it is less efficient, but the layout allows for including a ladder track off of the loop, but this could affect overall storage of autos.

(AC): How much does efficiency get affected by having a ladder track?

(TR): Is there enough clearance between the track and Hayden Island Drive on Option C?

(AC): I like Options B, C, and D from an upland perspective but these provide a challenge from a shallow water habitat perspective.

(AC): These options will bring up fill issues for areas that are below Ordinary High Water (OHW).

(TR): How do Options B, C and D work in relationship with the slough bridge and overpasses or with the south power line? Would they have to be moved? Option A seems to have the best opportunity for an arterial connection.

(TR): Tear drop layout is good, but could be an issue if there are 'at grade' crossings on the site.

(AC): Is it possible on Option A to handle two different materials at once? It looks like it is but not sure. However, the road doesn't appear to be off public access across the island. On Option B, the turn radius appears tight. Options B, C & D should spur discussion on shallow water habitat and what to do with the powerlines. For Option C & D especially, the powerlines conflict with the bulk storage structures. It may be beneficial to show the dual auto facility developed by the port at next week's advisory council.

(TR): Will the rail be entirely on fill or on piers?

(AC): I'd like to restate the issue of the limited public access for East Hayden Island to the bridge. This is an important aspect to the community. I'm also confused by the use of the rail loop for auto loading. It seems that a ladder track is needed. Also, is it feasible to locate the auto terminal close to a grain facility which produces dust? It would help to have some clarity on the dock drawings to indicate how ships and barges can use the facility, but this may be something for later in the process.

(TR): I'm not concerned about showing the ladder track. It can always be included and fit within the loop. Also, the Toyota terminal is located near a grain terminal. It should be noted that UP is running 10,000 foot auto unit trains into Terminal 4 through the ladder track system. Also, it should be noted that approximately 30% of the incoming grain shipments to the port is by barge.

(TR): Was a second connection considered to access the rail facilities over at Portland's T6? Could we use a bridge on the west side or a parallel bridge to the main line, to remove the possibly entry/exit right off the main line on the island?



(AC): Linking high-speed or other increased surface rail is limited on the existing tracks, but the high speed elevated crossing might not be able to get integrated into existing tracks. There might not be capacity.

(TR): Currently Washington is looking at the existing Columbia rail bridge for its high-speed study. With improvements from Vancouver to the north, there is improvement for two additional trains.

(TR): Any siding coming from the south would need to consider all the train movement from T6. Any rail bridge to west part of the island would violate the council parameters for development.

(TR): With the length of unit trains, there would be a problem in creating a side track long enough, both from the south and from the east. Its unlikely it would be long enough to get the entire train off a main line track and onto a side track.

(TR): The AORTA website as part of its documentation against the CRC includes a video illustrating a potential passenger train bypass track across the island as part of a rail/truck bridge across the Columbia. This would help relieve congestion on the main BN/SF line. It's located on the site under CRC common sense alternatives.

(AC): Would the WHI rail development preclude expansion of passenger traffic?

(AC): The port has created target study of the Columbia River rail bridge. Some of the big congestion issues are not related to the bridge itself, but to the rail intersections in North Portland.

(Public Comment): With potential growth of passenger rail and possible eventual high-speed rail, at some point we will need to separate passenger rail from freight rail. There does not seem to be a lot of coordination between Washington and Oregon on high-speed rail. These issues won't be answered with the WHI work since its focus is too limited, but we need to implement further study on this issue as part of another project.

On the following page is the summary table that was filled out during the work session.



Rail Alignment Analysis Summary

<u>Elements/ Options</u>	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>	<u>E</u>	<u>Notes</u>
Entry/Exit	<ul style="list-style-type: none"> ▪ Quicker on/off mainline (+) ▪ Flexibility (+) 	<ul style="list-style-type: none"> ▪ Flexibility (+) 		<ul style="list-style-type: none"> ▪ N or S off of mainline (+) ▪ Can go left of right on rail (+) 		All can go North or South. Speed? Slope? On fill or piers? Connections from T6 to island? Advantage to pull off mainline to rebuild?
Rail Loop	<ul style="list-style-type: none"> ▪ Fewer curves (+) ▪ Dual movement (+) ▪ Option for Ladder line (+) ▪ Rail at grade decreases flex (-) ▪ 150 unit train possibility (+) 	<ul style="list-style-type: none"> ▪ Dual Movement (+) ▪ Tight turns (-) ▪ Option for Ladder line (+) 		<ul style="list-style-type: none"> ▪ Clearance over Hayden Is. Dr (o) ▪ Tight turns (-) 		Rail curves and weight. Tail and head of train is where on terminal when moving? Auto load/unload not typically on loop. Grade separation for rail and road
Terminal Interface	<ul style="list-style-type: none"> ▪ Terminal on higher ground (+) 		<ul style="list-style-type: none"> ▪ Bulk Storage and Powerline (-) 			2 activities at same time. Labor issues. Train in motion next to one being loaded Auto train is smaller. Ladder tracks? Auto & bulk operators don't want to be close. Barge and ship loading.
Other?	<ul style="list-style-type: none"> ▪ Handle two materials (+) ▪ Safety (-) 	<ul style="list-style-type: none"> ▪ Upland forest (+) ▪ Shallow water habitat (-) ▪ Less fragmentation (+) ▪ Fill below OHW (-) ▪ Powerline issues (o) ▪ Safety (-) 	<ul style="list-style-type: none"> ▪ Upland forest (+) ▪ Shallow water habitat (-) ▪ Less fragmentation (+) ▪ Fill below OHW (-) ▪ Powerline issues (o) ▪ Safety (-) 	<ul style="list-style-type: none"> ▪ Upland forest (+) ▪ Shallow water habitat (-) ▪ Less fragmentation (+) ▪ Fill below OHW (-) ▪ Powerline issues (o) ▪ Safety (-) 		Connect bridge to island for thru-traffic. Rail interface on WA & OR side. Capacity conflict on main line with passenger rail expansion. Need cross sections Best connection with bridge to local roads. Recreation and public access. High speed rail.

