To: Dale Robins, RTC Project Manager — Date: 9-20-10

From: Mark Hirota, P.E. PB Project Manager

Subject: **SR-35 Columbia River Crossing Navigation Survey**

INTRODUCTION

A Navigation Baseline report was prepared in 2003 for SR-35 Columbia River Crossing Feasibility Study. For the TS&L report it was necessary to verify proposed design parameters within the study. Modification, upgrading or replacement of the bridge must consider existing and future vessel traffic and ensure safe navigation. The Columbia River Towboat Association (CRTA), U.S. Army Corps of Engineers, U.S. Coast Guard and other river users were contacted to gather information and to confirm conclusions from the feasibility study.

VESSEL TRAFFIC AND TRENDS

The U.S. Army Corps of Engineers, Waterborne Commerce Statistics, Part 4 cargo tonnage and vessel trips for the Vancouver to The Dalles Reach of the Columbia River were obtained for 2005 and 2008. The data was used to update the following tables summarizing the upbound and downbound cargo movements in addition to commercial vessel trips. Data prior to 2005 was reported in the 2003 Navigation Baseline report.

Total Upbound Cargo Tonnage (million tons): 1980 - 2008						
1980	1985	1990	1995	2000	2005	2008
3.5	2.1	2.1	3.3	3.2	3.0	3.1

Total Downbound Cargo Tonnage (million tons): 1980 - 2008						
1980	1985	1990	1995	2000	2005	2008
7.2	6.2	7.6	8.3	7.4	6.9	5.2

Vessel Trips through the Vancouver-The Dalles Reach: 1980 - 2008							
	1980	1985	1990	1995	2000	2005	2008
Upbound:	7,498	5,754	5,234	2,555	1,980	1,586	1,328
Downbound:	7,307	5,754	5,174	2,556	1,907	1,537	1,328
Avg. Daily:	41	32	28	14	10	9	7

Compared to available data reported in the 2003 SR-35 Columbia Crossing report, the cargo volumes and vessel traffic have not increased.

VERIFICATION OF PROPOSED BRIDGE CLEARANCE WITH USERS

Existing navigation conditions has not experienced a significant change since 2003. In July 2009, a fuel barge grounded downstream of the bridge on a shoal that has accumulated at the mouth of Hood River, however, it was reported that the vessel was outside of the navigation channel and the incident was attributed to pilot error. According to river users, the existing channel provides enough width for vessel traffic but encroachment of sediment could be a problem in the future. A wider horizontal clearance could introduce the possibility of pilots taking a different approach angle to the bridge opening. According to the Portland District Corps of Engineers there are no current plans for changing the location of the authorized navigation channel.

Vertical Clearance

Existing conditions of SR-35 (Hood River Bridge) indicate a 67 feet vertical clearance when closed relative to the normal Bonneville pool elevation of 73 feet Mean Sea Level (MSL). The proposed vertical clearance for the new bridge is 80 feet above the full pool elevation of 77 feet MSL. This was confirmed with river users as being adequate and it was noted from CRTA that the bridges upstream have a 79 feet vertical clearance. Cranes, sailboats or tour ships with high clearances rarely navigate the channel with the typical traffic users being barges. Lampson International cranes can reach 130 feet but clearances this high would not be practical and an 80 feet vertical clearance was stated as manageable by Lampson because they can ship the cranes in parts.

Horizontal Clearance

The existing bridge at Hood River has a horizontal clearance of 246 feet. A horizontal clearance of 450 feet is proposed for the new bridge. It was noted from CRTA that the existing clearance is inadequate and two tows cannot pass the bridge opening at the same time. The navigation channel and the bridge opening are not lined up with the westerly winds and it is difficult for tows to safely transit with the 246 feet clearance. According to the CRTA, two-way traffic would account for approximately ⅓ to ½ of the traffic, but the existing opening is currently limited to one-way traffic. A horizontal clearance of 450 feet was acceptable to the river users contacted. The wider clearance addresses safety concerns and the possibility of two-way traffic.

CONCLUSION

The CRTA, U.S. Army Corps of Engineers, U.S. Coast Guard and other river users were contacted and verified that information in the 2003 Navigation Baseline Report is still valid. The recommended horizontal clearance is 450 feet and the vertical clearance is 80 feet above the full pool elevation of 77 feet MSL.

REFERENCES

Southwest Washington Regional Transportation Council, *SR-35 Bridge Feasibility Study, Navigation Baseline Report*, prepared by Parsons Brinckerhoff, March 2003.

Telephone discussion and email, Fred Harding (Shaver Transportation) Columbia River Towboat Association, August 18, 2010.

Telephone discussion, Austin Pratt, U.S. Coast Guard, August 18, 2010.

Telephone discussion, Jerry Grossnickle, Columbia River Towboat Association, August 18, 2010.

Telephone discussion, Jon Gornick, U.S. Army Corps of Engineers, Portland District, August 25, 2010.

Telephone discussion, Linda Shames, Port of Hood River, August 24, 2010.

Telephone discussion, Neil Lampson, Lampson International, August 24, 2010.

U.S. Army Corps of Engineers, *Waterborne Commerce of the United States, Part 4 Pacific Coast, Alaska and Hawaii*, 2005, 2008.

Telephone discussion, Paul Godsil and Gary Collin, Ross Island Sand & Gravel, September 7, 2010.

Telephone discussion, Adam Beeman (First Mate of the Spirit of 98'), CruiseWest, September 7, 2010.