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US fast ferry test in Plumper Sound

A catamaran passenger ferry designed for service between Bremerton, Washington State and Seattle will be tested in Plumper Sound for about a month starting on May 25, according to Victoria engineering firm Golder Associates. The *Rich Passage 1*, a 24m, 118-passenger aluminum vessel equipped with adjustable hydrofoils, will undergo performance and wavemaking evaluations over a 1.5 nautical mile course set in the middle of the channel between Razor Point on North Pender Island and Croker Point and Payne Point on Saturna Island (see chart on page 8).

The test course will be approximately NNW/SSE and the vessel will accelerate to test speed before entering the 1.5 nautical mile 'performance zone'. An array of four wave measuring and recording devices will be moored at various distances opposite the mid-point of the course.

Test runs will be made at speeds ranging from 10 to 40 knots with various vessel loadings and hydrofoil angles. Detailed measurements of vessel performance and behaviour will be made.

It is estimated that the waves produced by the vessel will be comparable to the average winter waves in Plumper Sound—that is, typically between 0.2–0.3 metres, with an estimated maximum of 0.7 metres.

The trial crews will apparently base in Browning Harbour. It is anticipated that trials will not be conducted on weekends and holidays.

Golder Associates have applied for the necessary permits from Transport Canada (*Navigable Waters Protection Act*), Department of Fisheries and Oceans (*Fisheries Act*), Canadian Coast Guard (Notices to Shipping), and Canadian Border Services Agency (temporary importation of vessel).

The reasons that Kitsap Transit, the owner of the new vessel, chose Plumper Sound for these tests were that it was relatively close by, had similar weather conditions, but was free of heavy marine traffic which would complicate

wave measurements. Also, given the history of high-speed passenger ferries in Rich Passage, it seems unlikely that a full range of tests could be conducted there.

Fast Ferries in Rich Passage

Rich Passage connects Bremerton with Puget Sound, and lies between Bainbridge Island and the Kitsap Peninsula. Named by explorer Charles Wilkes in 1842 after the expedition's botanist, William Rich, it is about 8km long and a little less than 1km wide at its narrowest. It has a 90° turn in the middle, with the result that wake disturbances are spread out on one side and concentrated on the other. It has significant tidal currents but is relatively sheltered; however, it experiences heavy marine traffic including ten or more Washington State car ferries each day, tugs and tows, and ships coming and going from the Bremerton Naval Station.

In the late 1990s, Washington State Ferries made a decision to initiate a Passenger Only Fast Ferry (POFF) program to connect urban areas around Puget Sound. The initial route chosen was Bremerton to Seattle; the existing car ferry service took 55 minutes each way. Two 143ft catamaran ferries, each with a 350-passenger capacity, were commissioned. The first, the \$9.5 million *Chinook*, went into service in March 1999. It had a top speed of 34 knots, made the trip in 30 minutes, and soon gathered a loyal group of commuters.

It was not long, however, before a group of waterfront homeowners along Rich Passage started to complain that the *Chinook's* wake was washing away beaches and damaging seawalls. They launched a class action suit, and in July of 1999 the courts ruled that in initiating the service, Washington State Ferries had failed to fulfil the requirements of the state's *Environmental Policy Act*, because it had not considered the effect of vessel wake on the shoreline.

This was new—the legislation had never before been applied to a vessel and a shoreline. The judge ordered the

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Island Tides, Box 55, Pender Island, BC, Canada.
Email: islandtides@islandtides.com.

Phone: 250-629-3660. Fax: 250-629-3838.
Website: <http://www.islandtides.com>

Chinook to slow to 12 knots through Rich Passage. This lengthened the trip time to 40 minutes from 30, reduced the potential number of trips per day from 17 to 11, and resulted in fare increases. The POFF was no longer so attractive to commuters. The *Chinook's* sistership, the *Snohomish*, which went into service in the fall of 1999, was, of course, subject to the same restrictions.

Extensive studies followed of wavemaking and its effect on the shoreline, but in 2004, the POFF project was killed. The Rich Passage residents' court action was settled for \$4.5 million. The two vessels languished for four years, but were put up for sale on eBay in 2008, at \$9 million for the pair. It was reported that both needed extensive maintenance, including engine overhauls. It is not known what they eventually sold for.

Since that time, several efforts have been made to restart a high-speed passenger service, all without success.

The *Rich Passage 1* is about half the size, and its capacity is about one-third as many passengers, as the *Chinook* and the *Snohomish*. It is expected that the hydrofoils, which act like underwater airplane wings to lift the vessel out of the water at higher speeds, will substantially reduce the size of the waves generated.

Implications for BC Ferries

The three 37 knot Pacificat ferries built by BC Ferries were significantly larger than the Washington State Ferries' POFF vessels, but they were built at about the same time: completed in 1998-2000, three years late. They were 122 metres long, carried 250 cars and 1000 passengers, and the total cost for all three was close to \$450 million.

They, too, were reputed to create waves that damaged the shoreline. On the Horseshoe Bay—Departure Bay route, this complaint was met by reducing the speed of the vessels at Snake Island going in to Departure Bay, and at Passage Island entering Horseshoe Bay.

The Pacificats had been championed by NDP Premier Glen Clark. A new NDP Premier, Ujjal Dosanj, put them up for sale, and they were eventually sold by Liberal Premier Gordon Campbell in 2003 at \$19.4 million for all three, to the Washington Marine Group. They languished too, tied up in North Vancouver until 2009, when they were sold for use in the United Arab Emirates. ✍