



Newsbrief for Waterfront Property Owners

Rich Passage Passenger Only Fast Ferry Study

A series of meetings was held in August 2008 for waterfront property owners: Bainbridge Island on August 6, East Bremerton on August 13, and Port Orchard on August 20. At these meetings, the study team presented new information on the plans for design and construction of a new research vessel and for vessel trial operations, along with an update on beach nourishment and new results of beach impact assessment modeling. This newsbrief summarizes the questions asked during the property owner meetings and the responses of the study team. As always, comments and questions regarding the research program are welcome.

EIS AND BEACH RESPONSE

What is the status of the beach nourishment study?

In response to initial efforts throughout 2006 to obtain environmental permits for the beach nourishment study, the Washington Department of Fish and Wildlife (WDFW), the Suquamish Tribe, and the City of Bainbridge Island requested that an Environmental Impact Statement (EIS) be prepared to disclose the potential impacts of the study and to evaluate alternatives to beach nourishment. It is the position of the study team that this request was based primarily on the lack of a clear understanding about the purpose and nature of the beach nourishment program and its relationship to the larger passenger only fast ferry (POFF) study. In particular, WDFW expressed concerns about the adequacy of the proposed biological monitoring program.

In mid-2007, the project team and WDFW staff reached agreement in principle to modify the biological monitoring program in a fashion that would allow issuance of a revised State Environmental Policy Act (SEPA) checklist and Mitigated Determination of Non-Significance (MDNS) for the study.

In late 2007, the Federal Transit Administration (FTA) determined that research funds would not be approved in the current grant for conducting the research on beach nourishment, citing concerns regarding impacts to shoreline habitats and biota.

Concurrently, the study team conducted an internal evaluation of the need for an EIS that would address regular commercial passenger ferry service that may be proposed on the Seattle-Bremerton route after completion of the POFF study. The study team determined that, if commercial service is proposed, an EIS would provide an appropriate framework for addressing potential concerns of waterfront property owners, the regulatory and resource agencies, and other stakeholders.

Does the WDFW have biological data from the study area prior to previous WSF POFF operations in 2000 that have not been made available, despite repeated requests from property owners?

The study team is not aware of such data, but research is being conducted to identify and collect existing data for analyzing effects on air and water quality, plants and animals, energy and natural resources, land and shoreline use, and public services. The study team will publish a bibliography of available data as part of the EIS on commercial service.

Can biological data collected since 2000 be considered representative of baseline conditions?

Research so far indicates that beach volumes have returned to pre-2000 conditions and continue to fluctuate on a seasonal and inter-annual basis. For some marine biota, beach volumes are thought to represent a reasonable surrogate for habitat condition. However, there are numerous factors affecting the status of biota within Puget Sound. These include ongoing loss and alteration of habitat from residential and commercial development, pollution, and large-scale fluctuations in ocean conditions. Although the current biological sampling program likely gives a fair picture of baseline conditions, it is not possible to “turn back the clock” to any given baseline period. As mentioned above, research is being conducted to identify and collect existing data for analyzing habitat effects, and if any data collected prior to 2000 are available, this information will be compared with data collected in the current biological monitoring program.

Why not interview property owners to gather information on the state of the beaches and biological communities that existed at different time intervals: pre-fast ferry, during WSF fast ferry, and post-fast ferry?

The research team encourages property owners to provide anecdotal accounts of the condition of their beaches prior to previous POFF operations and to provide dated photographs where possible.

NEW RESEARCH VESSEL

The overall size and displacement of RV3 is large relative to Spirit. Can it meet the wake criteria, and aren't the associated operating costs of a larger, faster vessel much higher?

There are a number of reasons why the overall size and displacement of *RV3* is considerably greater than *Spirit*. The primary reason is that the hull needed to be longer to reduce the wakes, but the most significant factor in design was the *RV3* operational criteria of a 37-knot speed fully laden with 150 passengers, compared to *Spirit's* criteria of 27 knots and lower capacity. The additional required power, related drive-train, and propulsion of *RV3* affected the size and weight significantly.

Although the project team was near completion of the design and specification for *RV3*, the design process led to an opportunity to make further modifications and enhancements in design that will potentially lead to further significant improvements in wake performance as well as cost savings on construction, operation (fuel), and maintenance. The challenge for the new research vessel design is to optimize transport efficiency within the constraints of a stringent passenger wake criterion, crossing time, and passenger capacity. The revised criteria for the research vessel include the following requirements:

- Meet or perform better than the wake criterion set by the research program.
- Achieve a crossing time of 35 minutes or less rather than the original criterion of a 30-minute crossing (equivalent to previous WSF fast ferries). The 35-minute time is consistent with equivalent crossing time for ferries from Bainbridge Island to Seattle. The slightly longer crossing time should allow for reduction in power requirements and for a more fuel-efficient operation.
- Achieve a target capacity of 120 passengers; reducing the capacity from 150 passengers will achieve significant weight savings in itself, but will also allow for a smaller boat with lower power requirements.
- Meet a noise criterion as follows: Sound Exposure Level (SEL) of 70 dBA at 1,000 feet for a single pass-by.
- Use a single deck design with side-loading on both sides. *RV3* was designed with a single deck criterion, but also included bow loading which required additional deck space.

Do the specifications for the RV3-based research vessel have any limits for noise of operation? What is the anticipated noise level of RV3 compared to the noisy Spirit?

The new vessel will be expected to meet the following noise criterion: Sound Exposure Level (SEL) of 70 dBA at 1,000 feet for a single pass-by. This is based on sound level measurements taken of POFFs in San Francisco Bay and FTA guidelines for rail and bus transit projects. Analysis indicates that this noise level would result in no adverse impacts on average day-night noise levels from ferry operations at a distance of 130 feet or more from noise-sensitive land uses along the shoreline. The sea trials will be used to test this criterion.

An article in the Kitsap Sun discussed the purchase of several vessels by Kitsap Transit. What is the purpose of these vessels and what is their relationship to the research?

The Kitsap Sun article reports correctly that the Kitsap Transit plan includes purchase of two ferries as follows: (1) a low-wake, fuel-efficient prototype for the wake research program and (2) a used ferry for Kitsap Transit's Bremerton-Port Orchard route. The latter vessel is not intended for use by the research program.

What is the total cost of vessel operations, and are the costs provided by the research program actually research costs or operating costs?

The research program developed an estimate of vessel operating costs that included fuel use, labor, overhead, and vessel maintenance. The operating costs were combined with route demand data from previous WSF POFF and KFC POF operations on the route to develop a cost-per-passenger trip (\$8). It is anticipated that such an approach would be used to develop cost recovery measures during the research tests and to gather information on rider demand.

Who will be responsible for measuring the performance and impact of the new research vessel?

Pacific International Engineering (PI Engineering) has developed a hull and vessel performance monitoring test program that includes wake measurements that will be implemented as part of the research program. Initial wake and vessel performance monitoring testing will take place prior to commencing in-situ impact studies.

Can a single 150-passenger vessel meet the demand on the route? Will more vessels be needed in the future, leading to increased cumulative impacts?

PI Engineering is developing criteria for low-impact vessel operations which will be tested and evaluated as part of the EIS process. The EIS will also address the potential demand on the route. At this time it is premature to conclude whether a single vessel will meet demand and whether potential future operations involving one or more vessels might lead to increased impact.

What is the carbon footprint of the proposed research vessel? Won't the new boat use more fuel and have a higher carbon footprint per passenger than the car ferries? Car ferries could carry many more passengers than they carry now with no significant increase in fuel use or carbon footprint.

The research program is focused on assessing the physical and biological impacts to shorelines that might result from operating a passenger fast ferry service between Seattle and Bremerton. If commercial service is proposed, the project team anticipates the carbon footprint of POFF would be addressed as part of the EIS.

Would an adjustable foil and/or interceptor help reduce wakes and could they be designed to automatically “adjust” to minimize wake damage? If the new vessel’s foils do not adjust automatically, would they be set optimally in real time in regular service? Vessel safety and speed, not wakes, will almost always take precedence for the crew in regular POFF operation.

Any system to automate the movement of the foil in response to ambient conditions would be very expensive to implement. This is often done for purposes of ride control, particularly on large wave-piercing catamarans which are very pitch sensitive. In such an installation the vessel is fitted with numerous sensors which feed a continuous stream of data into a computer. The software then sends instructions to the foil system which instantaneously reacts to counter the vessel’s movement in an attempt to dampen the ride for passenger comfort. In terms of wake height control, one would need a GPS system that measures wake height behind the vessel and then changes the data into instructions for the foil to respond in a way that reduces the wake to a minimum. Clearly this would require not only significant hardware, but also development of software which would be prohibitively expensive.

However, the study team will have a significant set of data following the planned sea trials for the vessel as well as a body of knowledge from previous studies with foil-assisted vessels, which will enable us to produce optimum settings for wake wash, fuel efficiency, and speed. Such information will enable the captain to operate the boat in all conditions at optimum foil settings. The foil adjustment electronics will be linked to the vessel’s computer system and GPS; this will allow downloading of the history of settings at any one time and comparison of the data with the recommended settings.

Also, it should be noted that the interceptors will have a much stronger effect on wake performance than the adjustable foil will have. Currently, the interceptors are designed to be fixed in one position, of which we will determine during sea trials to be the optimum setting generally. However, the interceptor could also be designed to be adjustable while underway in a similar manner to the foil, providing an opportunity to optimize the wake against fuel consumption. For instance, when the vessel enters an area where minimizing the wake takes priority, the interceptor could be set to the optimal wake setting, and as soon as the vessel leaves the area it can be lifted, which will reduce the vessel’s power requirement and lower fuel consumption. Furthermore, this could be achieved with an electro-hydraulic system linked to the ship’s computer and GPS system to automate the setting. These changes will be considered in the final design.

RESEARCH PROGRAM

Why is a “fast” ferry needed at all? Is a fast ferry an unaffordable luxury given the potential for associated impacts to shorelines and the environment?

The research program is focused on assessing the physical and biological impacts to shorelines that might result from operating a passenger fast ferry service between Seattle and Bremerton.

The project team anticipates that “demand” and “need” for commercial POFF service would be addressed as part of the EIS.

Does the research program have a hidden agenda to introduce commercial POFF service, given the program’s role in facilitating the design and construction of a new research vessel?

Throughout the study, the research team has maintained an open dialogue with waterfront property owners on the research results. The team continues to hold the conviction that participation of waterfront property owners is essential to the success of the program and has expressed willingness to share data and publication of results with property owners. It is important to distinguish that success of the research relies on reaching consensus on scientific understanding and predicting accurately the impacts of ferry operation and other mechanisms on the shoreline. The research program does not measure success in terms of the implementation of any proposed commercial service which might be anticipated by vessel operators.

Has the research program looked at the effects of vessel wakes and associated impacts of vessels on marine mammals and aquatic birds?

The Biological Assessment prepared for the research program determined that with adaptive management measures in place, the sea trials will not have adverse effects on killer whales and other marine mammals and birds listed under the Endangered Species Act. If any whales are observed in the vicinity during the trials, the trials will be halted until the animals leave the area. If commercial service is proposed, the determination of related impacts to aquatic habitats and species, including marine mammals and birds, would be addressed and documented as part of the EIS.

What is the status of the long-planned economics study?

Basic passenger ferry demand data are available from previous passenger-only operations on the route and these have been used to determine the cost recovery potential during the research trials. The research study is focused on assessing the physical and biological impacts to shorelines that might result from operating a passenger fast ferry service between Seattle and Bremerton. The study team determined that, if commercial service is proposed, an EIS would provide an appropriate framework for addressing route economics.

Website, Project Information & Feedback

Property owner participation is essential to the success of our research program and we encourage your input regarding this study and the plans for future work.

Further information on the study can be obtained from the project website: www.pugetsoundfastferry.com or by sending e-mail to:

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