

Appendix A

Cross Sound History and Background

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KITSAP TRANSIT

Task 1—Cross Sound History and Background



June 2014 | Final Report



Passenger-Only Ferry Business Plan and Long Range Strategy

Task 1 — Cross Sound History and Background Final Report

June 2014

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1. Introduction

Extensive previous studies have been conducted by various organizations on the need, feasibility, and potential governance and funding structures for passenger-only ferry (POF) service throughout the Puget Sound region, specifically for cross-sound runs to downtown Seattle. Additionally, there is a long history of POF service and operators, with a mix of success. To avoid reinventing the wheel and to ensure that the next step forward for Kitsap Transit (KT) is a truly implementable POF plan, this first task reviews and assesses the history of cross-sound POF services and studies to provide a historical framework for the Kitsap POF plan. Most importantly, this section identifies lessons learned to illuminate the path forward, highlighting the pitfalls to avoid and successful choices that could be emulated.

2. History of Cross-Sound Passenger-Only Ferry Service

The first POF service in the region started operating in the early 20th Century. The privately owned Mosquito Fleet served Seattle, Olympia, Tacoma, Port Townsend, Everett, Bellingham, Victoria, Vancouver, Bremerton, Vashon Island, Bainbridge Island, and other ports in the region. By 1935, service consolidated to fewer routes under a single company, the Black Ball Line. Extensive road development and an unpopular fare increase (later rolled back by the legislature), along with the introduction of passenger vehicle ferries, signaled the demise of POF service following World War II. Seemingly ever since, there has been a back-and-forth of referendums and initiatives first funding then defunding POF services. Please refer to Figure 2.1 for a look at the history of POF service in the Puget Sound.

2.1. WASHINGTON STATE FERRIES

In June 1951, the state of Washington acquired most of the Black Ball Line and began service as Washington State Ferries (WSF), offering valuable and reliable service for cross-sound commuters; however, between 1993 and 2000, three voter-approved measures deeply affected WSF finances. First, Initiative 601 (1993) significantly curtailed ferry system spending. Then, with Referendum 49 (1998), voters approved transfer of revenue out of the general fund to benefit transportation projects, including providing improved ferry service through the purchase of new POF vessels and terminal upgrades at Southworth and Kingston. Following this funding, plans were developed to improve terminals, replace aging vessels, increase service frequency on existing runs, and add new passenger-only boats and service. Subsequently, POF service began on direct runs from Bremerton and Vashon Island to downtown Seattle with direct runs from Kingston and Southworth also envisioned. Initiative 695 (I-695), approved in 1999 lowered the state Motor Vehicle and Excise Tax (MVET) and brought all of this to a sudden halt with state ferry funding slashed by

\$93M between Fiscal Year (FY) 1999 and FY 2001. While I-695 was declared unconstitutional in March 2000, the Legislature quickly took separate action after the court decision to establish the \$30 car tab fee and repealing the MVET. These actions left WSF without the funds it needed to continue to provide service. WSF was forced to compensate for the loss of funds by increasing fares and reducing service. The service reductions eventually included the end of POF service between Kitsap County and Seattle.

2.2. KING COUNTY

In 2007, King County (County) formed a Ferry District, which, along with creation of the King County Department of Transportation (DOT) Marine Division, assumed the POF service from Vashon Island to downtown Seattle from WSF. Through the creation of the Ferry District, the County was given the authority to levy taxes and incur debt, to provide POF service. Since 2008, the Ferry District has operated two POF routes – one from Vashon Island to downtown Seattle and one from West Seattle to downtown Seattle (formerly the Elliott Bay Water Taxi).

2.3. KITSAP TRANSIT

KT has been involved in POF service since the agency's inception in 1982, initially only to ensure that the foot ferry between Bremerton and Port Orchard continued to run. In the early 1990's, KT initiated a fare subsidy program with the private operator integrating the foot ferry with bus service. After I-695, which lowered the MVET and defunded WSF service as discussed above, the agency turned their attention to establishing a Kitsap-based cross-sound POF service. Since then, KT has continued to work to develop stable funding for such a service, pursued research for a high-speed low-wake vessel for POF service through Rich Passage (note that this research is discussed later in this document), partnered with private franchise ferry operators to resume Bremerton service abandoned by WSF, and supported a (now canceled) contracted POF service from Kingston.

KT has proposed ballot measures to raise local tax support for passenger only ferry service on two occasions. In 2003, KT put forth its first measure proposing a sales and use tax increase of 3/10 of 1 percent and an MVET on license renewals at 3/10 of 1 percent of the value of motor vehicles. Following failure of the first proposition KT began working with Kitsap Ferry Company (KFC) and Aqua Express to provide service to Seattle from both Bremerton and Kingston. In 2007 KT offered a second measure to fund passenger only ferries proposing a local sales and use tax of 3/10 of 1 percent. This measure was also defeated although by a smaller margin than the first one in 2003.

In 2004 KT entered into a joint development agreement with KFC to develop passenger only ferry service between Bremerton and downtown Seattle. KT provided the capital assets with KCF responsible for operation of the service. Ferry service began in Summer 2004 with four round trips each weekday at a one-way fare of \$7.00. For fee services such as guaranteed boarding, newspapers and coffee service were offered. With slow downs through Rich Passage to prevent wake damage, the crossing took about 40 minutes, 20 minutes less than the WSF passenger vehicle ferry. The service was discontinued in 2007 when the tax measure failed.



In January 2005 Aqua Express began operating as a commercial service between Kingston and downtown Seattle with five round trips each weekday averaging about 300 riders per day. The one-way fare was \$5.25 with an additional \$3 surcharge for bicycles. Additional revenue was realized through advertising, food, and drink sales, as well as vessel charters. Ten months later in the fall of 2005, Aqua Express suspended service citing lower ridership than anticipated and rapidly escalating fuel costs.

In 2008, KT purchased the Port Orchard-Annapolis-Bremerton Foot Ferry service from Horluck Transportation, a private operator. Operated for KT by Kitsap Harbor Tours, the KT Foot Ferry(KTFF) has been in continuous, successful operation since 2008, carrying over 450,000 passengers with a farebox recovery rate of 35% in 2013. (Note that this recovery rate is somewhat inflated because of the Puget Sound Naval Shipyard (PSNS) Transportation Incentive Program (TIP). The PSNS TIP is an employer program sponsored by the shipyard that increases revenue for the foot ferry because there are so many shipyard riders going primarily to Annapolis from Bremerton. The cross-sound service would probably not have as high a percentage of shipyard workers, so it would likely not see as much PSNS TIP revenue). The KTFF serves the Port Orchard Ferry Dock, Bremerton Ferry Dock, and Annapolis Ferry Dock and Park & Ride, and charges the same fare as KT bus service. KT owns two vessels, the historic Carlisle II and the Admiral Pete. Responding to ridership increases, (up 45% between 2008 and 2009), KT began expanding passenger carrying capacity initially by renovating the Admiral Pete from an 80-passenger to 120-passenger vessel and is now engaged in a design-build effort to acquire a sister ship

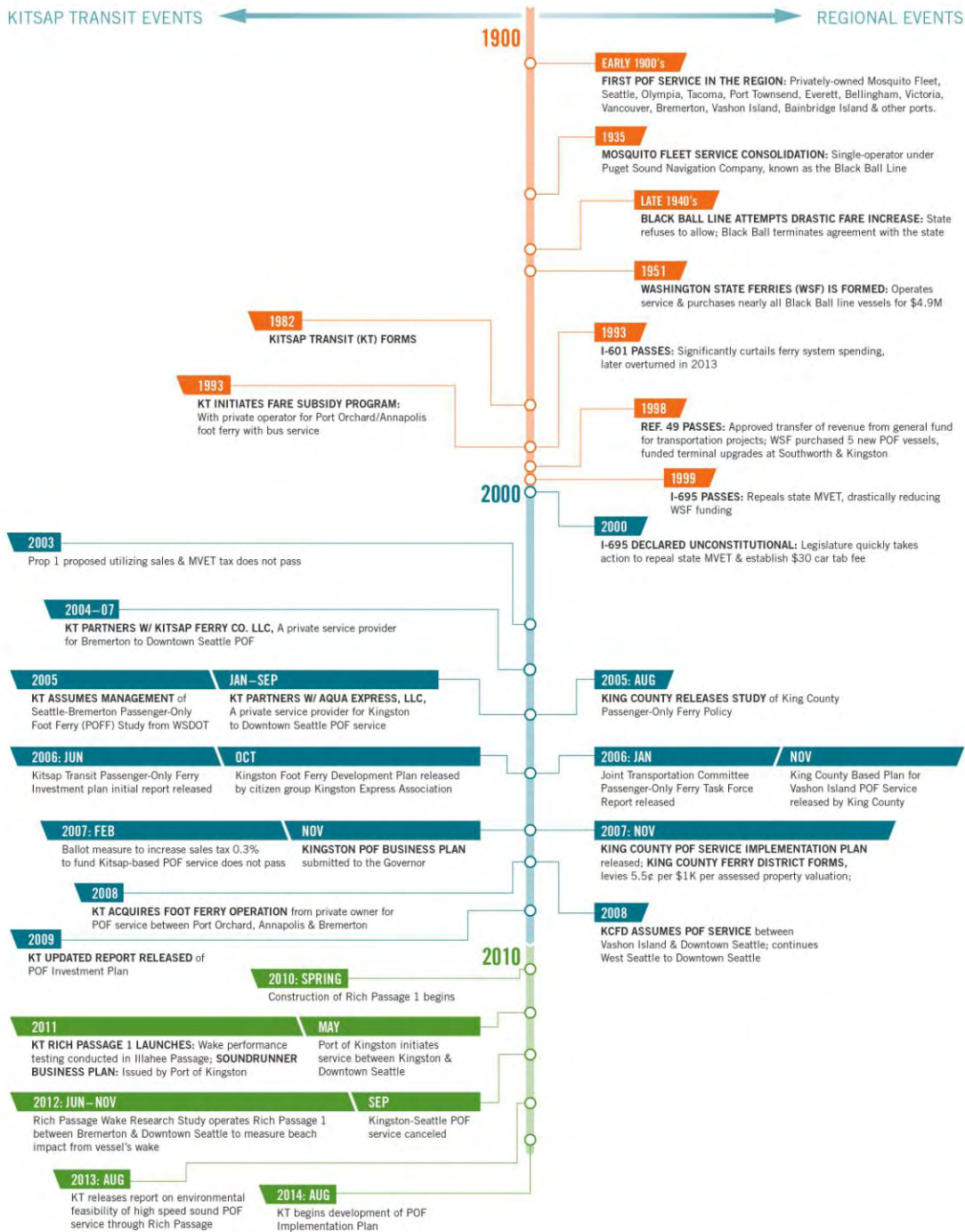


Figure 2.1: Passenger-Only Ferry Service Timeline

3. Previous Studies and Plans

The topic of cross-sound POF service has been extensively studied by various agencies. This section seeks to provide an understanding of past work, with a focus on evaluating options and best practices, to inform recommendations to be outlined in the fully developed KT POF Implementation Plan.

3.1. JOINT TRANSPORTATION COMMITTEE TASK FORCE REPORT

Objective: Assess the most reliable and cost effective means of providing POF service.

Lead agency: Washington State Legislature Joint Transportation Committee (JTC) Task Force (TF).

Date completed: January 2006

Summary of findings:

This report recognizes that POF is an important component of state, regional, and local transportation infrastructure and should be promoted and funded. The report found that POF service would not be sustainable without subsidies. The finding was based on key criteria that include level of need for additional transportation options, existing service and/or existing infrastructure, and the level of integration with local planning and land use requirements, as well as advancing Washington State commuter Trip Reduction goals. The report also finds that the focus should be on connecting Seattle, Bremerton, Kingston, Southworth, and Vashon Island. The Task Force also recommended additional analysis of traffic projections, revenue, and costs.

3.2. KINGSTON FOOT FERRY DEVELOPMENT PLAN

Objective: Fulfill the need for a locally operated, fast, reliable, and affordable foot ferry between Kingston and downtown Seattle.

Lead agency: Kingston Express Association

Date completed: October 2006

Summary of findings:

The Plan, drafted by a non-profit corporation composed of Kingston citizens and business owners, identifies a compelling need for POF service from Kingston to downtown Seattle. The Plan also cites current commuting options that require driving to Seattle using WSF's passenger vehicle ferries involving up to \$36 daily in ferry and parking fees for a three-hour round-trip commute or a multi-legged commute involving some combination of car, ferry, and train (with an average commute of four-hours round trip).

Recommended governance, funding, and service attributes of the proposed Kingston Express include the following:

- Manage service with a Washington non-profit corporation/Federal 501(c)3 organization made up of riders, regulated by the WUTC, and inspected by the U.S. Coast Guard with a licensed captain as its sole initial employee.
- Initially utilize an 80-passenger ferry operating one run each way per day traveling to downtown Seattle in the morning and returning to Kingston in the evening with service expanding as ridership grows.
- Operate on a revenue basis without ongoing public subsidy; however, an initial government subsidy as “bridge” funding would be required until ridership is sufficient to enable self-sustaining operations. The proposed bridge funding would entail KT distribution of 5 percent of its current budget evenly between four regions: North, South, Central, and West Kitsap.
- With this “bridge funding” subsidy, the fare structure would include a \$9.50 roundtrip fare for members of the proposed governing Kitsap Express Association and \$12.00 roundtrip fare for non-member, occasional riders and visitors.
- Oversight would be provided by a new marine transportation division created by Kitsap County with a director responsible for coordinating the development of cross-sound foot ferry service, stakeholder outreach, and coordinating legislative consensus. The director would be appointed by the KT Board of Commissioners and supported by a small staff.

3.3. KING COUNTY POF POLICY STUDY BUSINESS PLAN AND IMPLEMENTATION PLAN

Three linked documents are reviewed in this section. The Policy Study was completed first with the Business Plan following soon after, and both feeding directly into the development of the Implementation Plan.

King County POF Policy Study

Objective: Determine under what conditions and circumstances it may be appropriate for King County to invest in and/or participate in POF service.

Lead agency: King County

Date completed: August 2005

Summary of findings:

The Study focused on key policy questions of whether King County should participate in waterborne transit, potential funding approaches, and the best operating approaches.

For the first question, whether King County should invest or participate in waterborne transit, and, if so, under what circumstances, the Study found that participation should only be undertaken under specific conditions. The specific conditions identified – the availability of alternative public transit modes coupled with limited waterborne transit ridership potential – led to the recommendation that the market would not support wide-scale implementation.



The Study then asked, if an investment or participation is warranted based on both limited alternative public transit options and an increased waterborne transit ridership potential, what funding approach or approaches should be considered. As with other documents reviewed, this Study found that some level of public subsidy would be required for operations. Such a subsidy could come from existing funds (e.g., cut bus service), new revenues (e.g., new sales tax), and dedicated funds (e.g., create a Ferry District that collects revenue from property taxes).

Finally, the Study considered what operating approaches would best achieve county objectives and mitigate risk, and found there are a range of operating approaches, from direct ownership whereby King County owns and operates the vessels, possibly providing the terminals; to private company operators either via contracted services or public-private partnerships (P3); to a public-public partnership model whereby King County funds the POF service without direct operational involvement, such as supporting WSF in delivery of service, and could include partnerships with local cities or other agencies to deliver infrastructure.

King County Business Plan for the Vashon Island POF Service

Objective: Set a plan for King County to assume responsibility for the Vashon POF service from WSF through a newly formed Ferry District whose business plan is to be submitted to the Governor to qualify for funds from the sale of the WSF Chinook class vessels.

Lead agency: King County

Date completed: November 2006

Summary of findings:

The Washington State Legislature announced its intention to end directed state funding for the Vashon POF on June 30, 2007. King County subsequently submitted a business plan to assume this service as a newly-formed Ferry District, as allowed under statute.

The Plan identified the business and legislative arrangements that would be necessary to enable new service on the triangle route between Seattle, Southworth, and Vashon. The plan identified facilities and vessel needs, parking and transit connections, and the commitments and partnerships that would be required for a successful service.

The ability for King County to assume provision of POF service was dependent upon establishment of agreements with the King County DOT to provide certain management and administration services; King County DOT in turn contracting with WSF to provide certain vessel and terminal services (with potential for future migration to in-house operations); the King County Council approving establishment of a Ferry District; and commitment from the State of Washington (State) to fund, operate, and maintain existing WSF service through June 2008 (with no King County or Ferry District participation).

In addition, King County would require net proceeds from the sale of the existing WSF Chinook class vessels be appropriated to the Ferry District. In order to ensure availability of union labor, King County would require the State's successful negotiation of an extension of the Masters, Mates & Pilots (MM&P) and Inland Boatmen's Union (IBU) supplemental POF agreements so that they are in effect when service is assumed by the Ferry District along with the State's commitment to negotiating fair and reasonable agreements for the provision of services that King County or the

Ferry District wish to subcontract with WSF. Clarification by the State that the Ferry District has the ability to use its tax revenue to fund connecting shuttle services and other landside improvements within King County would also be required in addition to the State taking legislative action to grant the Ferry District the authority to issue bonds and incur debt. Finally, the State would need to assume responsibility to provide funding as needed to overcome any deficits between available federal and other outside funding and costs for improvements to the identified terminal facilities, and the Ferry District would need to be able to utilize outside shipyards for major vessel maintenance in addition to use of overnight tie-up and maintenance at a convenient location within King County boundaries.

The Plan assumes a purchase of two 250-passenger vessels for the triangle route or two 149-passenger vessels for the direct route. For either alternative, one vessel would be used for active service and one would be a back-up vessel. Both route alternatives proposed an improved level of service with three sailings per peak period per peak direction under a commute travel-optimized schedule.

Both route alternatives propose utilization of existing WSF terminal facilities on Vashon and at Pier 50 (downtown Seattle), which will require some near-term improvements to support ongoing operations, as well as new facilities required, and assumes that the Ferry District will also be involved in long-term infrastructure improvements. The Plan assumes that WSF will retain ownership of existing facilities at Vashon and assumes that lease agreements for the use of the terminals would not include charges to recover capital costs from the Ferry District. Operations and maintenance would be provided by WSF as a contracted service with the Ferry District paying a marginal operating burden.

The triangle route would also require an entity, such as the State, and/or KT funding the cost of construction of a new POF facility at Southworth, exclusive rights for the Ferry District to operate ferry service between Southworth and downtown Seattle, and commitment from the State and KT to provide parking and transit connections at Southworth to support POF operations.

King County POF Service Implementation Plan

Objective: Successfully implement POF service for two existing routes serving West Seattle to downtown, and Vashon Island to downtown, under authority of the new Ferry District and managed by the newly formed King County Department of Transportation (DOT) Marine Division.

Lead agency: King County

Date completed: November 2007

Summary of findings:

The Implementation Plan, a document comprised of several chapters and presentations presented in two volumes, provided a path forward for a King County POF system. The system would be governed and funded by the Ferry District (formed in 2007) and operated by the King County DOT via a newly formed Marine Division with primary responsibility for providing the POF services. After the successful submittal of the business plan for the assumption of the Vashon Island POF service from WSF and the successful formation of the Ferry District, King County took over two existing routes: 1) the Elliott Bay Water Taxi serving West Seattle to downtown Seattle and 2) the Vashon Island route serving Vashon Island to downtown Seattle.



Some key specific recommendations from the Implementation Plan include the following:

- A proposed levy rate of \$0.55 per \$1,000 of assessed value to cover two existing and up to five future routes.
- Service would operate during weekday peak periods (approximately 6:00 am to 9:00 am and 4:00 pm to 7:00 pm) with three round-trip sailings per peak period.
- Ferry District organization and reporting was defined with a general manager supported by three reporting managers: operations, maintenance, and administrative. It is assumed that vessel operations will utilize leased vessels for at least the first two years.
- Recommended operating labor of three-person crew per vessel.
- Develop maintenance costs for budgeting purposes including terminal/facility and vessel costs. Costs should reflect partnership agreements (e.g., contracted services with WSF for terminal/facility maintenance).
- Terminal operations were assumed to be leased or operated under a cooperative agreement with WSF.

3.4. KITSAP TRANSIT PASSENGER-ONLY FERRY INVESTMENT PLAN

Objective: Determine a path forward for KT to provide sustainable POF service and identify the initial service areas.

Lead agency: Kitsap Transit

Date completed: *Initial report: 2006, Updated: 2009*

Summary of findings:

The Investment Plan offers a proposed approach for the implementation of POF service based on previous experience with the Kingston and Bremerton services, through which the agency found that private-public partnerships were not effective and that significant subsidies (30 to 40%) would be required to sustain adequate levels of service.

General findings (from previous surveys at Kingston, land use initiatives, and commuter transportation) support the need for a POF service from three ports (Bremerton, Southworth, and Kingston) to downtown Seattle within the following parameters:

- Initiate service during peak periods only
- Use smaller, more efficient boats with limited crew
- Fares are the most important element in generating demand and sustainable revenue (projected at \$8 to \$10 roundtrip, with smart card integration to minimize cash handling)
- Environmental impacts must be mitigated, including fuel consumption, emissions and impacts to shorelines

3.5. PORT OF KINGSTON BUSINESS PLAN: KINGSTON TO DOWNTOWN SEATTLE REGIONAL PASSENGER-ONLY FERRY SERVICE

Objective: Set a plan for the Port of Kingston to offer POF service on a Kingston-Downtown Seattle run, to be submitted to the Governor as required to qualify for funds from the sale of the WSF Chinook class vessels.

Lead agency: Port of Kingston

Date completed: November 2007

Summary of findings:

Engrossed Second Substitute Senate Bill 5862 required submittal of a Business Plan to the Governor and Legislature by November 1, 2007 to seek grant funding described in RCW 47.01.350 for POF service. The Plan submitted by the Port describes the need for service, legal authority to provide service, governance model, and available funding, along with the anticipated required capital investments in vessels and terminal facilities. The Plan describes operations including service hours and costs, revenue streams, and conditions and assumptions for the Port to be able to provide POF service.

The Plan also noted the 2003 and 2007 failed ballot measures introduced by KT to increase taxes to fund POF service. Following the 2007 ballot measure failure, the Port sought funding directly and was awarded a \$3.5 million federal grant providing funds for the necessary capital investments. Assuming these funds were available in June 2008 plus one year for construction of a new vessel, the Port could start service in the fall of 2009.

Service would begin optimized for commuter travel with one roundtrip sailing in the morning departing Kingston at 7:00 AM and departing Downtown Seattle for the return trip at 7:45 AM and one in the evening departing Kingston at 4:45 PM and departing Downtown Seattle for the return trip at 5:30 PM Monday through Friday. Hours of operation for the crew will be 6:30 AM to 9:00 AM and 4:15 PM to 7:00 PM. As demand grows, additional sailings may be added. Service would be coordinated with existing land-based transit providers and with WSF and KCFD. The Port proposes utilizing existing passenger-only terminal facilities or newly updated facilities in Kingston and existing WSF facilities at Pier 50 in Downtown Seattle.

The Plan assumes purchase of two 100-passenger vessels – the primary vessel providing regular service will be new, and the second, back-up vessel will be purchased used. This second, back-up vessel will also give the Port the flexibility to expand service as ridership grows.

Fares (roundtrip) are set at: adult walk-on \$15.00, ticket book \$13.50, quarterly pass \$12.00, and senior (over 65) or disabled \$7.50. Annual fare revenue is estimated at \$246,000 in 2009 up to \$664,000 by 2012. Additional revenue via advertising placed on the boats is not expected to exceed \$500 per month. While the Port generates property tax receipts, because the service will be provided to a much larger regional population base than those in the Port's taxable jurisdiction, the Port does not plan to use these funds for POF service

3.6. PUGET SOUND REGIONAL COUNCIL PASSENGER-ONLY FERRY STUDY EXECUTIVE SUMMARY

Objective: Provide a framework to guide regional stakeholders as they consider opportunities for developing POF service that considers regional coordination, integration with existing service, land use concerns and goals, and provides a plan that can be incorporated into the Transportation 2040 plan.

Lead agency: Puget Sound Regional Council (PSRC)

Date completed: November 2008

Summary of findings:

The PSRC study that examined the role of POF in the region's transportation system, assessed the market for POF service, included ridership forecasts, identified and evaluated possible routes, and developed a regional framework to guide future decisions on systems investments and opportunities. Stakeholders included in the development of the plan include local transit agencies, such as KT; cities and counties, including the King County Ferry District; system users; ports; WSF; WSDOT; the State Legislature; and the Washington Transportation Commission. This summary focuses on the findings relevant to KT.

Route evaluation and market demand results found the following:

- Immediate-term most viable routes included both existing and new routes in Kitsap County. Currently unserved routes identified Kingston to downtown Seattle, Bremerton to downtown Seattle, and Southworth to downtown Seattle.
- Medium-term (within the next four to ten years) routes with high potential included one route in Kitsap County: Port Orchard to downtown Seattle.

Findings for existing routes include the following:

- Port Orchard – Annapolis – Bremerton (KTFF): because this is a critical connection between Port Orchard and Annapolis and the Bremerton to Seattle ferry and between those cities and the Bremerton urban core, the study recommends continuing service with greater service levels during the morning and evening peaks. One 80-passenger vehicle operating at 22 knots is recommended.
- Bremerton – Downtown Seattle: POF service previously connected these urban centers and the terminal infrastructure exists at both ends along with excellent transit connections. POF service would be able to cross the sound in half the time of the existing passenger vehicle ferry service. Four 149-passenger low-wake vessels operating at 30 knots are recommended.
- Kingston – Downtown Seattle: POF service previously operated between these cities. Capital costs for minor repairs or upgrades to the existing terminal are anticipated to be minimal. Currently, WSF passenger vehicle ferry service offers commuters the fastest connection with ferry service to Edmonds and transfer to the Sounder commuter rail into Seattle. POF service would reduce travel time by 42 percent. Two 149-passenger vessels operating at 30 knots are recommended.

- Southworth – Downtown Seattle: Walk-on customers currently take the WSF passenger vehicle ferry service to Vashon Island and transfer to the existing POF service to Downtown Seattle. POF service directly from Southworth would reduce travel time by 50 percent. Southworth was deemed the most promising location for a POF terminal as it will be easier to lease and modify a portion of the existing WSF terminal (adjacent to abundant parking). Two 149-passenger vessels operating at 30 knots are recommended.
- The Port Orchard route, flagged as medium-term, would be served in the immediate term by the Bremerton to Seattle route, connected by KTFF from Port Orchard and Annapolis. Assumptions include the use of the existing ferry terminal currently used for KTFF service. This would require additional berthing space.

Four primary policy components of a successful POF system were identified as follows:

1. **Locally Appropriate Governance:** Governance could be private operations, public-private partnerships, or public operations. Key findings related to governance include that partnerships will be integral to POF service success, service providers should start with small-scale business plans where feasible, governance models must consider the ability to generate operating funds, regional oversight is important, and that the region should reduce reliance on WSF for POF. WSF has been stretched thin and must focus on maintaining its much-needed reliable passenger vehicle ferry service.
2. **Sustainable Financing:** Funding can be generated through fares, federal grants, local taxes, bridge tolls, private funding via partnerships, concessions, charters, advertising, and possible philanthropic grants. Peer POF systems operating as part of a public transit network show normal farebox recovery rate of 20 to 40 percent, thus requiring a subsidy.
3. **Supportive Land Use:** Dense, mixed-use developments surrounding ferry terminals provide an effective way to build ridership and increase accessibility. Recommendations include development of supportive land use and zoning policies matching the local context and enabling application of Water Transit-Oriented Development concepts, designing around the pedestrian first, developing a mix of land uses near terminals, and using the terminal as a focal point for concentrated development.
4. **Good Transportation System Integration:** The most successful POF services typically serve dense walkable areas and provide excellent connections to landside public and private transit modes. Keys to system integration are identified as encouragement of non-single occupancy vehicle access to terminals; building from the pedestrian's perspective; maximizing pedestrian safety, accessibility, and comfort; providing comprehensive, frequent, and direct supportive transit service; minimizing scheduling and physical conflicts between modes; and strategically managing parking demand (e.g., time-limiting or paid street parking, utilize park-and-ride lots).

3.7. SOUNDRUNNER BUSINESS PLAN FOR PASSENGER ONLY FERRY SERVICE KINGSTON TO SEATTLE

Objective: To offer a sustainable plan for the Port of Kingston to continue providing POF service on the Kingston-Downtown Seattle route.

Lead agency: Port of Kingston

Date completed: November 2011

Summary of findings:

This Business Plan presents a proposal for continuation of Kingston-Downtown Seattle POF by the Port of Kingston. The Plan was built on the previous Business Plan submitted by the Port in 2007. The Plan updated the justification/need for the service, available funding, service goals, challenges and solutions, vessels, marketing plans, service structure, and ridership and revenue forecasts.

The Port began regular service on the Kingston-Downtown Seattle route in October 2010 with service suspended in November 2010; then resumed May 31, 2011 after reconfiguration of operations and management (running uninterrupted from May 31, 2011 to November 1, 2011 when the Plan was published).

With the goal to eventually fully fund service, a farebox return goal of 50 percent was identified; one-way tickets at the time were \$7.00 and a 20-multi-use pass was available for \$130 and a 40-multi-use pass for \$250. It was predicted that fares would be required to increase by 5 to 10 percent per year starting in 2013 to offset increases in fuel, crew, and insurance costs.

Table 3.1: Fare Strategy for Kingston-Downtown Seattle Route

Route Fares by Year at ~10 Percent Increase per Year				
Fare Type	2012	2013	2014	2015
<i>One-way</i>	\$7.00	\$7.70	\$8.50	\$9.25
<i>20-multi-use pass</i>	\$130.00	\$143.00	\$157.00	\$173.00
<i>40-multi-use pass</i>	\$250.00	\$275.00	\$302.50	\$332.75
<i>Care taker/child under 5</i>	Free	Free	Free	Free

Ridership must grow by one rider per week or five riders per month to meet the goals outlined in the plan. ORCA was implemented November 2011 on the Port's POF service to encourage use by commuters reimbursed by employers. This, coupled with the marketing outlined in the plan, is expected to assist in meeting or exceeding ridership projections.

As mentioned above in the 2007 Plan summary, the Port was awarded a Federal Transit Administration (FTA) grant (\$3.5M, 2007) for POF vessels and terminal facilities. This grant did not include funds for operation of service. The Port was then awarded \$750K in toll credits from the State to partially match the federal grant (as required for award). Finally, the Port was awarded a \$977,000 FHWA grant in 2011 to be used for docking facility improvements. The State also made available \$150,000 to the Port from the net proceeds of the sale of the Chinook and Snohomish passenger-only ferries. The Port planned to use the funds for 2011 operating costs. In addition, the Port has contributed \$150,000 and \$800,000 in funds.

The Port will focus on marketing to North Kitsap, Jefferson, and Clallam counties to continually build the base ridership and meet the projected numbers for the first five-year period.

3.8. CONCLUSIONS

The previous studies have consistently found that passenger-only ferry (POF) service is a vital element of the regional transportation infrastructure in the Puget Sound. However, some level of financial subsidy is required to maintain service while keeping fares at a competitive rate.

There were some contradictions on the best approach to offer service, with most finding that the public-private partnership is not an effective method and suggesting instead that, if the state does not continue to provide service via WSF, contracted services or public agency-to-public agency partnerships offer the most viable method of delivery. The creation of a Ferry District worked well for King County as a means to provide POF service and could be considered. The Vashon Island and West Seattle runs are still active; however, service has yet to expand to future proposed routes. In addition, King County is currently looking to consolidate administrative functions into the DOT for efficiency, while maintaining the structure and ability to collect tax funds. With this in mind, further analysis of this governance and funding model would be required.

4. Lessons Learned

The following lessons learned are derived primarily from the documents summarized in the previous section. These documents' findings were focused on because they were region-specific and would speak most closely to the concerns of and options for KT as the agency determines the path forward for implementation of a sustainable POF service.

4.1. WHAT IS THE NEED FOR PASSENGER-ONLY FERRY SERVICE?

Repeated studies identified the need for POF service in order to reach under-served areas, to mitigate congestion (particularly in Downtown Seattle and along the waterfront), and to overcome limited transportation options. For example, commuters in Kingston utilizing POF service could cut travel time by as much as 42 percent, reducing a four-hour round trip commute to just over two hours. In addition, POF service is cited as a key element to support business development in the city centers of the communities it serves (such as Bremerton and Kingston).

POF service can be instrumental in meeting land use and transportation goals (e.g., reduced congestion, improved commute alternatives, increased responsiveness to growth) in addition to supporting the Washington Commuter Trip Reduction (WCTR) goals.

4.2. WHY DID PREVIOUS KITSAP POF SERVICE NOT SUCCEED?

Insufficient, sustainable funding source and insufficient, unreliable service are the primary reason POF service has not been successful. Furthermore political shifts led to reduced funding for WSF service and subsequent elimination of state's low farebox recovery POF service. Nearly every study reviewed clearly identified the need for public subsidy to ensure sustainable service. The private-public partnerships KT previously entered into with Aqua Express, LLC for the Kingston run and Kitsap Ferry Co., LLC for the Bremerton run both failed. Lower than expected ridership and rapidly rising fuel costs were major factor in these failures.

4.3. SERVICE, OPERATIONS, GOVERNANCE AND FUNDING, AND FUTURE CONSIDERATIONS

The general findings from the document review regarding previous and current services general operations practices (e.g., single service provider, contracted service, fares), governance and funding, and future considerations (e.g., level of subsidy anticipated, service provider successes) found the following:

- **Service:** There is an existing demand for POF service in Kitsap County, particularly between Kingston and Downtown Seattle and Bremerton and Downtown Seattle, for peak period, commuter-based service at a minimum. Multiple studies found that there is an existing market in these communities and that service would be well-received.
- **Governance:** Several governance models have been utilized for POF service in the region. WSF offered service under the public model, but funding was cut by the Legislature as a result of I-695, which resulted in the end of WSF-provided POF service. A model akin to a public-private partnership (P3) (whereby the private service provider received certain considerations and KT provided some goods and services, with the private providers at risk for their investment) has been attempted by KT for both the Kingston and Bremerton runs, both of which were not successful because the private service providers could not cover their costs. Finally, King County has been operating POF service between Vashon Island and downtown Seattle and West Seattle and downtown Seattle (Elliott Bay Water Taxi) since 2008 after the successful formation of a Ferry District with service managed by the King County DOT Marine Transit Division. Potential governance models will be discussed in more detail in Task 2.
- **Funding:** KT identified a goal of 95 to 100 percent farebox recovery on commuter routes and 40 percent on off-peak routes, with fares eventually covering 60 percent of operations funding across the entire schedule. Additionally, PSRC in their report called out what would be required to achieve a 40 to 60 percent farebox recovery rate. While there are many other potential revenue streams available to a POF service, such as advertising, concessions, and chartered service, most studies found that some form of public subsidy, would be required for sustainable service. The formation of a Ferry District in King County allowed the District to collect taxes and incur debt, both important elements to ensure sustainable service via appropriate levels of public subsidy. Potential funding models will be discussed in more detail in Section 2.
- **Future Considerations:** The studies reviewed were all completed before the end of 2009, which leaves most of the capital program and operation cost values suspect. There has been

considerable fluctuation in the market since then, particularly with changes in fuel costs. There is also likely an opportunity to look more carefully at land use and development in order to support POF service. Through the development of dense, mixed-use sites around the POF terminal area, the ridership base could organically increase. Encouraging such development would also likely help manage growth in the cities served and revitalize the urban core.

5. Summary and Findings of Wake Research Study

In 2005, KT assumed management of the Seattle-Bremerton Passenger Only Fast Ferry Study. The study was designed to investigate the feasibility of adding passenger only fast ferry service between Seattle and Bremerton. Using a multi-disciplinary approach the project collected data and developed predictive tools to model wake impacts, designed and optimized a low- wake high speed ferry (Rich Passage 1), documented shoreline conditions for a period of years, and tested the shoreline impact of the Rich Passage 1 in regular operating service. The history, findings, and recommendations of this study can be found in the sections below.

5.1. HISTORY OF FAST PASSENGER FERRIES ¹

Fast ferry service is not a new concept in Kitsap County. For many years, the City of Bremerton, KT, and the State have worked on initiatives to provide passenger only fast ferry (POFF) service between Seattle and Bremerton. In 1978, WSF and Boeing operated a Boeing jetfoil for six weeks on the Puget Sound. While the high-speed passenger only ferry service offered a viable means of reducing automobile usage and promoting passenger-only travel, the service was determined to be too expensive to operate and maintain.

As traffic congestion continued to worsen in the region and opportunities for economic development were being pursued, POF service was again considered in 1984 by WSF as a part of their 1990 to 2000 Long Range Plan Update. Citing increased traffic congestion and increasing auto ferries ridership, WSF recommended introduction of POF service from Downtown Seattle to Bremerton, Vashon, and Southworth. Local interest in passenger only service was also growing at this time. Led by a business group from Bremerton, the State Transportation Commission was urged to initiate a demonstration route from Bremerton to bolster redevelopment locally and improve service options County-wide.

This passenger only route between Bremerton and Seattle was established by WSF in 1986 with the purchase of the Express (later known as the Tye), a catamaran built by Nichols Brothers of Whidbey Island. The vessel carried 319 passengers and operated at a cruising speed of 23 knots. Two new monohulls, the Skagit and Kalama, carrying 250 passengers at a cruising speed of 25 knots, were added in 1989 to expand service between Seattle and Bremerton and initiate service to Vashon Island.

¹ Summarized from Marine Transportation Association of Kitsap website: <http://www.mtak.org/History.html>

Rich Passage is a narrow channel of water between Bainbridge Island and the Kitsap Peninsula, located along the Seattle-Bremerton POF route. Residents along this channel began to raise concerns about shoreline damage, citing large wakes from the high speed POFs. The State retained a consultant who found that beach erosion and bulkhead deterioration would likely accelerate should POFs continue to run at full speed. This finding prompted WSF to slow the passenger POFs to less than 12 knots through Rich Passage in the summer of 1990. This slow down increased travel time from 40 minutes to a 55-minute crossing. This is a savings of only 5 minutes over the auto ferry crossing, thereby reducing the competitive advantage of the POFs.

In response to concerns for shoreline erosion along Rich Passage, WSF acquired two passenger ferries, the Chinook in 1998 and Snohomish in 1999. Both vessels were designed to run at higher speeds while reducing wake wash, therefore reducing shoreline erosion. Shortly after the new vessels began operating legal action was soon brought by shoreline residents in the Rich Passage area resulting in the permanent slow-down of the 30 minute service on the Seattle-Bremerton route.

In 2003, funding for POF service to Bremerton was eliminated by the Legislature due to dwindling ridership and decreased funding caused by taxpayer initiatives. In this same year, new legislation was approved to grant KT and other transit properties the opportunity to support a POF service through local tax initiatives.

5.2. KITSAP TRANSIT RICH PASSAGE SHORE RESPONSE STUDY

To determine the feasibility of high speed passenger ferry service through Rich Passage, the Seattle-Bremerton Passenger Only Fast Ferry Study, a multi-disciplinary study designed to evaluate the environmental feasibility of re-introducing high speed POF service on the Seattle to Bremerton route, was initiated. The final phase of the project measured and analyzed the performance of Rich Passage 1 (RP1), a new low-wake design, foil-assisted catamaran, constructed for KT. Results of the study compared baseline beach conditions recorded between 2004 and 2012 to modeled and actual wake wash, as well as other natural impacts recorded from June 25 to November 2, 2012. Beach morphology and sediment composition were analyzed using high-resolution, three-dimensional laser scanned surveys of selected beaches before, during, and after the test interval. These surveys enabled detailed mapping of the foreshore at an unprecedented level of detail.

Shoreline change is a function of natural and man-made occurrences, which include local topography and bathymetry, sediment characteristics and supply, speed and direction of tidal currents, and exposure to wind-waves, as well as exposure of the site to vessel sailing line, size, speed, and operating frequency of vessels. The beaches within the Rich Passage study area change significantly each season and each year depending on regional variations in climate, as well as the variations in the local site-specific factors.

Operational Testing

Operations of the RP1 during this monitoring period included different intervals of one-way trips (40 and 60 trips per week) to draw conclusions about sediment transport as it relates to number of sailings. Additionally, the nature of ferry operations (requiring speed ups and slowdowns), as

well as the path of the route itself (straight verses curved paths of travel), were all analyzed through this study.

Findings

The findings are very site specific and thoroughly documented by Golder in the August 2013 Wake Research Study. Generally, the findings showed that sediment transport and other beach responses are within ranges observed as long-term trends, such as seasonal and inter-annual variability caused by increasing wind speeds and wind directional shifts. The study also found the following:

- No direct correlation found between wake-wash energy and the distance from the RP1's sailing line; however, it was noted that shoreline located on the outside of the sailing line curvature at Point Glover receive higher energy wake wash.
- Wake wash from the RP1 along Point Glover generates more wake power at the shoreline while travelling from Seattle to Bremerton than vice versa.
- Vessel operations, which create the most wave energy, include acceleration, deceleration, and traveling at hump speed (the specific speed of a boat that creates the largest wave height).
- Operating RP1 at speeds that are not in the optimum range of 34 to 37 knots, as well as acceleration and deceleration, may create more significant wake wash; however, beach response was noted within the scale of the seasonal changes that were observed during the baseline studies.
- No trend in sediment transport patterns or rates directly correlated to number of RP1 sailings tested (40 versus 60 trips per week).
- While long-term, cumulative effects of ferry operations should not be overlooked, the research indicates that the potential for long-term effects from future operations (that are consistent with the operational parameters tested) appear insignificant.²

Identified Conclusions and Guidelines for Future Operations

The Golder report identified that any future POF operations with a RP1 or equivalent vessel should consider the potential for long-term cumulative effects should more frequent transits than tested (60 trips per week) be required. The report also identified that ongoing monitoring on a semi-annual basis is recommended at one site at each of the following four shorelines: East Bremerton, Point White, Pleasant Beach, and Point Glover.

The report offers the following guidelines for POF operations in order to minimize the potential for long-term beach response:

- "Limit initial operations with a POF vessel such as RP1 or equivalent to previously tested conditions (60 trips per week) for at least three months, then increase the frequency of trips. Operations and modifications to operations should be accompanied by a beach observation and monitoring program.
- Begin operations during a month that does not typically correspond to a seasonal shift (i.e., avoid starting in June or October).

² Wake Research Study Executive Summary, Golder 2013



- Pre-program Hull and Foil Monitoring System (HFMS) with optimized settings for three loadings, rather than two loadings as was done during in-situ beach response testing.
- Operate RP1 at optimal speed (36 to 40 knots) starting as close to Bremerton as possible before the sensitive shorelines along East Bremerton, and avoid accelerating and decelerating in Port Orchard Reach and Rich Passage.
- Monitor beach response using laser scanning surveys and beach photo observations monthly for first three months and quarterly thereafter.”³

Wake Wash Technical Criteria

As shown in the newsletter “Summary of Wake Wash Acceptance Test Results from Rich Passage 1” (Golder 2013) and also briefed to the KT Board of Directors on February 6, 2013, the following graph depicts the wake wash criteria established for Rich Passage and the performance of RP1 at all wake wave periods and heights developed at a speed of 36-37 knots:

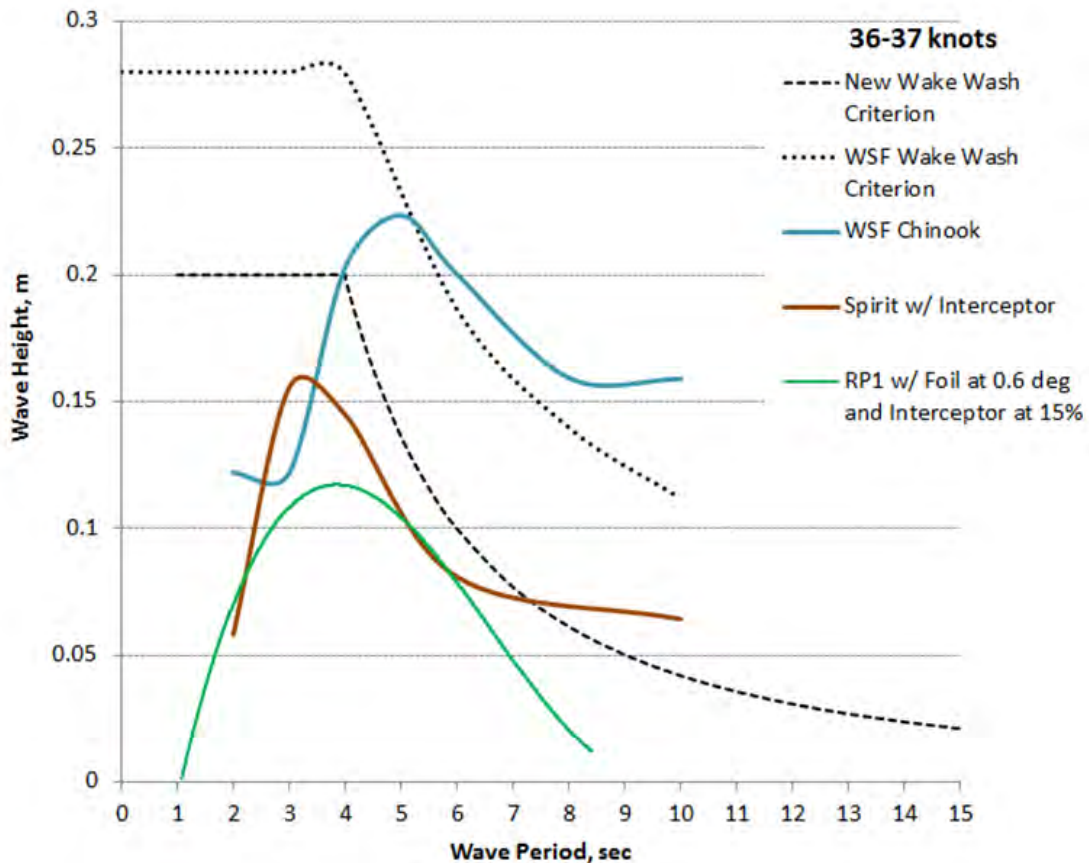


Figure 5-1: Summary of Wake Wash Acceptance Test Results from RP1 (Golder 2013)

³ Wake Research Study Executive Summary, Golder 2013

5.3 BREMERTON-SEATTLE – DRAFT ROUTE PLAN

As shown above, optimum wake response speed for RP1 is 36 to 40 knots and optimum fuel economy speed is 26 knots (All American Marine Specification Sheet). In keeping with all the above guidelines and criteria, the below route strategy would need to be invoked to meet the route trip time goal of 30 minutes, optimize fuel economy, safety, and comfort, while achieving a wake wash response that meets the established criteria:

Table 5-1: RP1—Bremerton to Seattle Route Strategy

Route - RP1 - Bremerton to Seattle				
Route Element	Distance (Statute Miles)	Average Speed (kts)	Average Speed (MPH)	Time Required (minutes)
Bremerton - Manuever	0.3	8.0	9.2	1.96
Bremerton to Rich Passage Turn pt	3.5	36.0	41.4	5.07
Rich Passage to Seattle Turn Pt	3.0	36.0	41.4	4.35
Seattle Turn Pt to Seattle	8.7	26.0	29.9	17.46
Seattle - Manuever	0.3	8.0	9.2	1.96
Seattle Off/On Load PAX	0.0	0.0	0.0	9.00
Total (or average) One-Way	15.8	26.8	30.8	39.79

In this route plan, it is assumed that RP1 would accelerate to 36 knots as soon as practical so that when it reaches its turn point to head towards Rich Passage it would be approaching its optimum-wake cruising speed of 36 knots. If this concern does arise, then the acceleration point can be delayed to a point where RP1 is alongside the Bremerton Marina breakwater, thus slightly increasing the route trip time. It is not anticipated that the RP1 acceleration wake will have any substantial effect on the breakwater or marina. Since 26 knots is the optimum speed for fuel efficiency, this would be the preferred speed for the portion of the trip from the southern edge of Bainbridge Island to Seattle. Deceleration to mooring speed (~5 knots) would then occur at roughly 0.3 statute miles from the berth near Colman Dock. The same process can be followed for the return voyage from Seattle in reverse sequence, where the acceleration point for the Seattle departure may also be affected by the WSF ferry operation at Colman Dock and passenger ferry operations at Pier 50.

As is already done with regard to the transit of WSF car ferries through Rich Passage, it will be necessary to time the transit of RP1 through Rich Passage to avoid simultaneous transit with any oncoming large vessels and/or outgoing slower vessels, such as the WSF car ferries. Since RP1 will be within the channel for less than five minutes, the chance of conflicts are minimal and can be planned accordingly via Coast Guard Vessel Tracking System direction and route schedule planning.

Wake wash has presented a considerable challenge to the viability of POF service from Bremerton to Seattle. However, the beach response study shows, with definitive scientific rigor, that a POF vessel can be operated in accordance with the wake wash criterion without a negative effect on the beaches along the route from East Bremerton through Rich Passage. Furthermore, the



comprehensive approach taken to design a vessel to meet the operational requirements specific to Rich Passage, has resulted in a POF that allows for a very short route trip time, is very maneuverable, and provides enhanced comfort in most sea states. All in all, the result is that KT will have improved transit system responsiveness (quickness), comfort, safety, and fuel economy while meeting the goal of minimizing risks from wake wash to all potentially affected shorelines for the Bremerton-Seattle route.

Also, it is important to note that wake wash is not a concern currently along the other proposed routes in the Kingston or Southworth areas. Therefore, at Kingston and Southworth, the route strategy can be more focused on attaining and optimizing efficiency (fuel economy), reliability, comfort, environmental factors, and speed.