



KITSAP TRANSIT

Passenger-Only Ferry Business Plan
and Long Range Strategy

RFQ KT #14-478 | APPENDICES | JANUARY 2015



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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

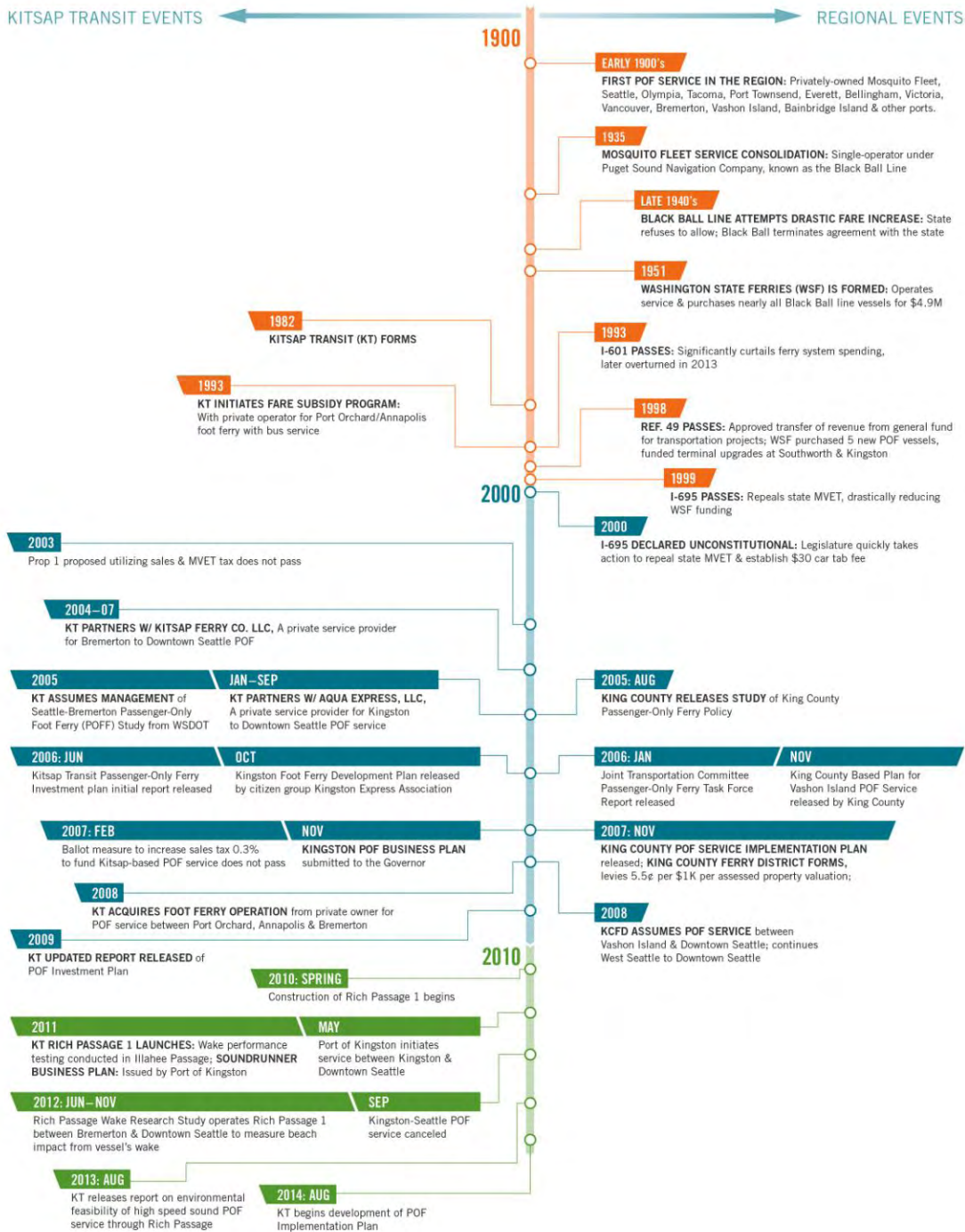


Figure 2.1: Passenger-Only Ferry Service Timeline

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:

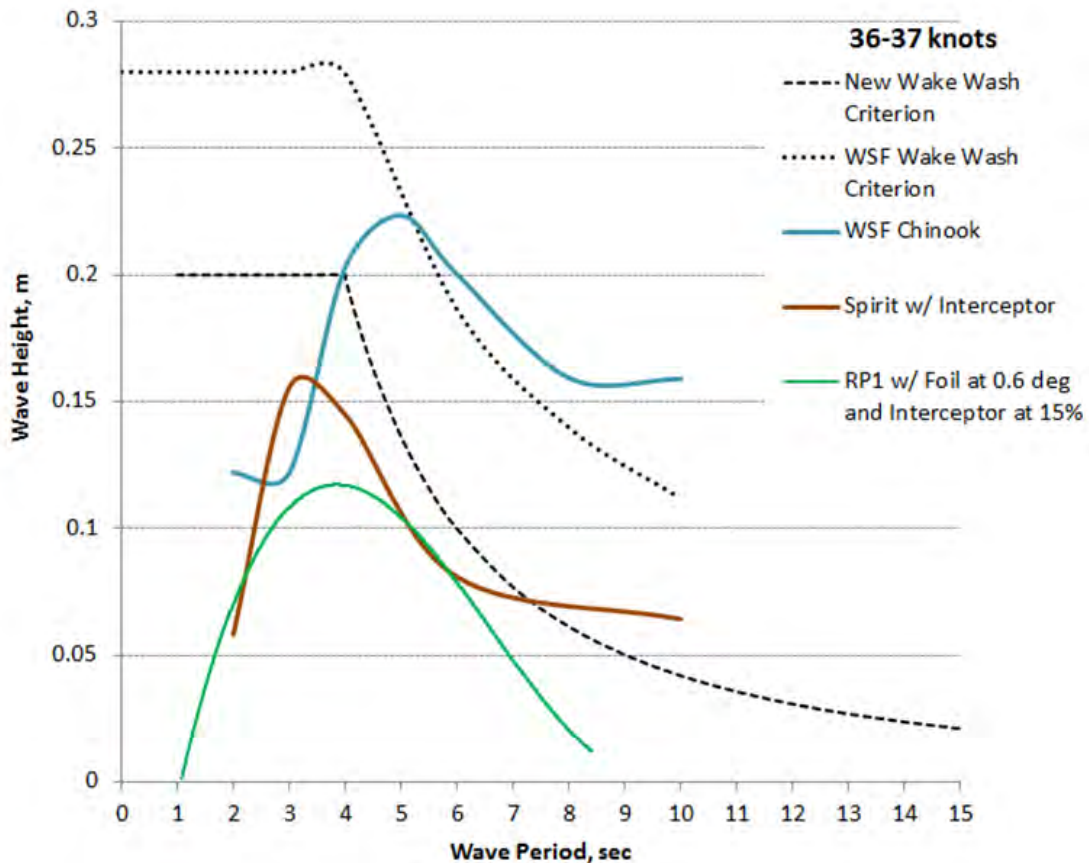


Figure 5-1: Summary of Wake Wash Acceptance Test Results from RP1 (Golder 2013)

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.

Appendix B

Governance and Funding

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KITSAP TRANSIT

Task 2—Governance and Funding



June 2014 | Final Report





Passenger-Only Ferry Business Plan and Long Range Strategy

Task 2 — Governance and Funding

June 2, 2014

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1. Introduction

An important step in planning for the implementation of a new passenger-only ferry (POF) service is evaluation of the governance and associated funding options available to Kitsap Transit (KT). Two questions are considered in this task:

1. What are the statutory authority models, funding sources and provisions, and enabling legislation in place today?
2. What are examples of other successful governance models that could be applied to KT with legislative changes?

2. Governance Models and Funding Provisions

2.1. MODELS WITH CURRENT STATUTORY AUTHORITY

KT's legal counsel recently prepared a memorandum, "Potential Sources of Funding for Passenger-Only Ferries" that reviews current enabling legislation and governance alternatives and helps to identify models of particular relevance to KT. In addition to this memorandum, relevant material in the King County Waterborne Transit Policy Study and Kitsap Transit Passenger-Only Ferry Investment Plan (2006 draft and 2009 update) were reviewed.

There are a number of enabling statutes in the Revised Code of Washington (RCW) that define governance and funding models for POF service. Key relevant RCW chapters include:

- RCW 35 – Cities and Towns
- RCW 35A – Optional Municipal Code
- RCW 36 – Counties
- RCW 53 – Port Districts
- RCW 81 - Transportation
- RCW 82 – Excise Taxes

With respect to existing statutory authority, five governance models are identified as potential options for KT. Each is described below.

Public Transportation Benefit Area

Public Transportation Benefit Areas (PTBAs) are established as municipal corporations of Washington State. To be authorized to provide POF service the area must have boundaries on the Puget Sound and not already be part of a regional transit authority (RTA) such as Sound Transit. This structure may be the most viable option within the current statutes for KT's POF service because KT is already established as a PTBA (per RCW 36.57A) and has existing statutory authority to develop POF service and seek voter approval for funding. One stipulation is that the PTBA must develop a POF investment plan (which KT is developing under this Business Plan and Long Range Strategy).

The funding provisions available to a PTBA include:

- **Motor vehicle excise tax (MVET):** MVETs are described in RCW 82.80.130. They are assessed on each vehicle owned by a resident of the PTBA at the time of registration renewal. The tax may be up to 0.4% of the value of the vehicle and may be used solely for POF. Voter approval is required.
- **Sales and Use Tax:** As described in RCW 82.14.440 and similar to a MVET, the tax may be up to 0.4% of the value of the taxable item, and the tax rate must be approved by voters.
- **Tolls/Fares for Passengers and Parking:** In addition to ferry fares, cities may lease or convey parking facilities to KT. If KT were to collect use fees for these facilities, the fees could support a bond for POF service without requiring voter approval.
- **Charges or Licensing Fees:** These charges or fees would be incurred for advertising, space leasing, or other revenue generation. KT could raise funds through advertising and commissions in POF facilities.

Per RCW 36.57A.210 a PTBA is also allowed to enter into contracts and agreements to operate POF service as well as Joint Development Agreements (JDAs) or other contracts to create a Public-Private Partnerships (P3).

It should be noted that KT has been pursuing a statutory modification that would allow the establishment of a POF district within the PTBA and authorize the use of parking taxes. This measure was approved by the House Transportation Committee but stalled in the Rules Committee when consensus on the transportation revenue proposal could not be reached and with concerns regarding the pending need for increased education funding tax sources. KT plans to pursue this measure in the next session.

County Ferry District

Similar to PTBAs, county ferry districts are also established as a municipal corporation by counties that border an otherwise unfordable body of water. Because the KT POF service would cross counties to land at the downtown Seattle terminal, a joint commission between two counties would be required to create a ferry district with the authority to offer that service (RCW 36.54.020). The financial provisions for a County Ferry District include an ad valorem tax (RCW 36.54.130) on all taxable property located in the district that may be imposed without voter approval, an excess tax levy (RCW 36.54.140) that requires voter approval, and bonds and grants that may only be used for the base funding for terminals.



The King County Ferry District, created by a vote of the King County Council as an independent, special-purpose government, operates the King County Water Taxi from downtown Seattle to West Seattle and downtown to Vashon Island. It is funded through an ad valorem property tax of \$0.055 cents per \$1,000 of assessed value. While initially created as an independent, special-purpose government, it is now in the process of being consolidated into general King County government.

The county ferry district is not judged to be a viable option for KT in that it would require establishment of a new joint ferry commission that may not be favored by King County and would certainly dilute KT's ability to manage the implementation process and likely extend the implementation period.

Port Districts

Port districts are authorized to “acquire, lease, construct, purchase, maintain and operate passenger carrying vessels on Puget Sound” (RCW 53.08.295). Although bonds may be utilized, funding sources are limited. An annual tax levy (RCW 53.36.020) of up to \$0.45 per thousand dollars of assessed value may be assessed for “general port purposes”. No other financial provisions are provided under this option. There is not a single port district currently within Kitsap whose boundaries encompass all of the potential terminal locations. It is also worth noting that the use of the port district model would require an agreement with the Port of Seattle, as service would enter this port district. Per the RCW, port districts are primarily intended to support industrial development and increased trade.

Transportation Benefit Districts (TBDs)

Per RCW 36.73, TBDs are available to all cities and counties to finance construction and operation of various transportation improvements, including public transit systems. The governing body of the TBD can decide to allow ownership and provision of transit service by a participating port or transit district unless prohibited by law. While POF service is not specifically called out, criteria for selecting improvements include improved travel time, improved air quality, increases in daily and peak period trip capacity, and improved modal connectivity. POF service could be evaluated positively in this framework. TBDs may pursue a wide range of finance provisions, including sales and use tax, motor vehicle license renewal fees, excess property tax levies, roadway tolls, and other special fees. As the code is currently written, all funding options under this model require voter approval when funds are to be used for POF service (RCW 36.73.065).

Public-Private Partnerships (P3)

P3s for transportation projects (including POF) have a rocky history in Washington, but are permitted under RCW 47.29 defining Transportation Innovative Partnerships and specifically for PTBAs under RCW 36.57A.210. The intent of a P3 is for both the public agency and the private partner to share in the risk of the venture through a legal agreement, like a Joint Development Agreement, that details shared investments, managing responsibilities, performance and revenue/cost apportioning. This requires an authorized governance model, like the PBTA, to enter into a funding and operating agreement with a private entity. The New York Water Taxi is an example of a public-private partnership that began service in 2002. The Port Authority of New York and New Jersey owns the operating terminals, which it leases to the private partner. The vessels have space for between 64 and 119 passengers, are heavily marketed for tourism, and

are available for private event rentals. Fares are set at rates to allow the private partner to operate at a profit.

More common for Washington public transit agencies is simply to contract with a private contractor for fleet operations or other specific services. Local examples include the Kitsap Transit Foot Ferries (KTFF), King County's Elliot Bay Water Taxi (governed by the King County Ferry District and operated by Argosy Cruises), and Community Transit. By keeping ownership of the capital property, the governing body limits their risk in case the private operator should fail to deliver the contracted services. The governing body may also be able to reduce capital costs through access to public grants and bond programs.

2.2. GOVERNANCE MODELS REQUIRING STATUTORY CHANGES

In addition to the current legislative environment, there are other governance models that could be applicable to KT if statutory changes were made. These include the following:

- **Regional Transit Authority (RTA):** To form, an RTA (like Sound Transit) requires a county council vote of at least two bordering counties with a minimum population of 400,000 each. Per the 2012 United States Census, Kitsap County's population is just short of 255,000. Additionally, the purpose of an RTA is to fund a high-capacity transit system, which it is unlikely that POF would meet that definition. The high capacity transit finance provisions all require voter approval.
- **High Capacity Transportation (HCT) Corridor:** HCT systems are "a system of public transportation services within an urbanized region operating principally on exclusive rights-of-way, and the supporting services and facilities necessary to implement such a system" (RCW 81.104.015). This model requires a county population of greater than 400,000 and a geography adjoining a state boundary. As with the RTA model, Kitsap County and POF service do not meet the current defining criteria for a HCT corridor model. Additionally, all of the funding provisions must be voter approved.
- **City/County Transportation Authority:** Cities or counties may enact their own transportation authorities in certain cases. The Seattle Monorail was a city transportation authority, as is Everett Transit. A county transportation authority may be established to serve populations with special needs; there are only two in the state. Neither of these seems useful or applicable to KT as KT is an established PTBA serving Kitsap County.
- **Other Transportation Authorities:** Outside of Washington, the San Francisco Bay Ferries are operated by the Water Emergency Transportation Authority (WETA). WETA was established in 2008 by state statute to consolidate most municipal ferry service in the region. As part of the consolidation, WETA receives the state funds previously directed towards the individual municipal ferries, as well as municipal, regional and federal subsidies that help to cover capital and operating costs along with fares. Increased tolls for most Bay Area bridges were also enacted in part to fund expansion of ferry service.

In British Columbia, the SeaBus POF is operated by TransLink, a transportation authority, formed to serve the South Coast British Columbia region. SeaBus is only one element of



TransLink’s services, which include buses, SkyTrain and commuter rail. TransLink was formed by the provincial South Coast British Columbia Transportation Authority Act in 1998, and receives funding from fuel taxes and property taxes (along with fares, advertising and property development). TransLink has some authority to raise funding through tax increases.

2.3. SUMMARY OF FINDINGS

Current Washington law provides four governance models enabling POF service: PTBAs, county ferry districts, port districts, and, with some interpretation of the criteria, transportation benefit districts.

- **PTBAs** have the authority to pursue P3 agreements, if desired, and can raise funds through a voter-authorized tax package, either MVET or sales tax or a fare/fee package that does not require voter approval. KT is already qualified as a PTBA and public transportation service provider. The PTBA option appears to be the most straightforward statutory path. Voter approval of a sales or MVET tax would likely be required because it is unlikely that a fare/fee funding package would be sufficient to cover capital and operating cost
- Alternatively, KT could partner with Kitsap County to pursue a **county ferry district**, which may allow assessment of a property tax levy without voter approval. However, POF service to Seattle would also require King County’s participation in forming the new ferry district.
- Another possible option could be the formation of a **Transportation Benefit District** through a sponsoring city or Kitsap County. TBDs may be funded through a variety of tax structures, one of which is a \$20 vehicle registration charge that does not need to be voter approved.
- Geographically, a single **port district** in Kitsap County does not extend to all of the desired terminal locations. An agreement with the Port of Seattle would be necessary for service into Seattle.
- **Public-private partnerships (P3s)** are another option under which KT could provide the terminal and/or vessel infrastructure, while the private partner would be responsible for raising operating revenue through fares. However, while this approach has been successful for the New York Water Taxi, the resulting fare structure could be too high for daily commuters in Kitsap County. Additionally, if the private partner cannot realize their financial requirements, KT could find itself suddenly without an operator or the taxing authority to resume the service. A possible variation could be a fare subsidy with coordinated bus service, such as was provided by KT for the Port Orchard foot ferry.

The table in Appendix A provides an overview of existing governance models focused on voter authorization requirements for funding options, benefits, and risks. Also included are governance models that will require statutory changes but that KT may wish to further explore. Those considered to be the most viable options are highlighted in yellow, while those deemed not viable are shaded.

3. Funding Sources

KT is developing a business plan and long-range strategy for sustainable passenger-only ferry (POF) service. As part of this process, an assessment of potential local, state, and federal revenue sources available to KT for the provision of new POF service was completed. This report documents the results of this assessment and, for each funding source identified, a description of the source, method for securing, and opportunities and challenges is provided.

3.1. CURRENT KITSAP TRANSIT REVENUE SOURCES

KT is a Public Transportation Benefit Area (PTBA) established by public vote in 1982, as authorized under Chapter 36.57A of the Revised Code of Washington (RCW). KT's service area is contiguous with the boundaries of Kitsap County and includes four incorporated areas as well as rural areas that are not served by public transportation.

As a PTBA, KT is authorized to levy or collect a sales and use tax at a rate of up to 0.9 percent upon voter approval¹ or Business and Occupation (B&O) tax and/or excise tax not to exceed one dollar per month per housing unit upon voter approval.² KT currently assesses sales and use tax at a rate of 0.8 percent, or 0.1 percent less than the maximum rate allowed under state law. Over the last three years, sales and use tax revenue accounts for approximately 75 percent of the agency's revenue. KT also generates revenue through passenger fares, state and federal grants, advertising rental income, and other similar proprietary revenues.³

It is clear that current revenues available to KT and used for existing public transportation services are not sufficient to provide new POF service.⁴ Therefore, the remainder of this document focuses on other local, state, and federal revenue sources that potentially can be used by KT to provide new POF service.

3.2. LOCAL PASSENGER-ONLY FERRY REVENUE SOURCES

The following section outlines potential POF revenue sources that are currently available under Washington State law to KT for the implementation and operation of POF service.⁵ These authorized revenue sources are in addition to fare revenue and other miscellaneous revenue that could be generated (e.g., charges or licensing fees for advertising, leasing space for services to ferry passengers, concessional revenue, developer-funded improvements, etc.).

¹ RCW 82.14.045. The sales and use tax rate for the operation, approved by voters and authorized to fund the maintenance or capital needs of the public transportation system, is authorized in lieu of the B&O and/or excise taxes authorized under RCW 35.95.040.

² RCW 35.95.040.

³ Kitsap Transit Finance Department.

⁴ Kitsap Transit General Counsel, "Potential Sources of Funding for Passenger-Only Ferries," March 28, 2013, p.2.

⁵ Memo, "Potential Sources of Funding for Passenger-Only Ferries," p. 9. Legislative changes likely are needed to allow a Transportation Benefit District to undertake providing POF. With legislation changes, other potential options could include a Regional Transit Authority, a High Capacity Transportation Corridor (HCT) under the HCT Statute, a Metropolitan Municipal Corporation, and City or County Transportation Authorities (pp. 9-10).

Local Funding Sources Authorized for a Public Transportation Benefit Area

As a PTBA with a boundary located on the Puget Sound, KT is authorized to provide POF service.⁶ Prior to introducing such service, the PTBA must develop a POF investment plan that includes elements to operate or contract for the operation of POF services; purchase, lease, or rent ferry vessels and dock facilities for the provision of transit service; and identify other activities necessary to implement the plan, including terminal locations, projected costs and revenues, and demonstration of a nexus between the service and benefit to the residents of the PTBA.⁷ To support development and operation of POF service, eligible PTBAs are authorized to leverage additional local revenue to fund POF service,⁸ including:

- Sales and use taxes—Sales and use taxes of up to 0.4 percent are authorized upon voter approval to be used solely for the purpose of providing POF service.⁹ In 2013, the current sales and use tax levied by KT for public transportation has generated an average of \$3.5 million in net revenue per one-tenth of one percent.¹⁰
- Motor vehicle and excise tax (MVET)—A tax of up to 0.4 percent of the value of most motor vehicles owned by a resident within the taxing district is authorized upon voter approval to be used solely for the purpose of providing POF service.¹¹

In addition to the taxes indicated above, PTBAs may also use passenger fares, parking fees, charges for licensing fees and/or leasing space, and other revenue-generating activities to fund the POF investment plan. As a municipal corporation of the state of Washington, a PTBA also has the authority to incur indebtedness and issue bonds.

The PTBA is not limited to choosing between implementing a sales or use tax up to the statutory limit or an MVET up to the statutory limit; some or all may be used to implement the POF investment plan, provided they are used for the benefit of the residents of the PTBA.¹² These revenues sources are very flexible in that they may be used for the capital, operating, or maintenance costs associated with implementing and providing POF service.

Local Funding Sources Authorized for a County Ferry District

The legislative authority of a county may adopt an ordinance creating a county ferry district in all or a portion of the area of the county, including the area within the incorporated limits of any city or town within the county. The ordinance may be adopted only after a public hearing has been held on the creation of a ferry district and the county legislative authority makes a finding that it is in the public interest to create the district. In the event that a body of water is on the boundary line between two counties, the boards of County Commissioners of the adjoining counties may form a joint county ferry district. All costs and expenses of constructing, purchasing, maintaining, and

⁶ RCW 36.57A.200.

⁷ RCW 36.57A.200.

⁸ RCW 36.57A.210.

⁹ RCW 82.14.440.

¹⁰ Kitsap Transit Finance Department

¹¹ RCW 82.80.130. Exemptions apply to vehicles registered under RCW 46.16A.455 with a scale weight more than 6,000 pounds, or to vehicles registered under RCW 46.16A.425, 46.17.335, or 46.17.350(1)(c).

¹² RCW 36.57A.210.

operating such a ferry shall be paid by the two counties, each paying a proportion as agreed upon by the boards of County Commissioners.¹³

A (joint) county ferry district is an independent taxing authority.¹⁴ To support development and operation of POF service, County Ferry Districts are authorized to leverage the following local revenue sources for POF service:

- **Ad valorem tax**—An ad valorem tax rate not to exceed \$0.75 per \$1,000 of assessed value on all taxable property located in the district may be assessed for counties with populations of less than 1.5 million residents.¹⁵ Regular property taxes collected in Washington State are subject to an annual one-percent maximum increase, which is equivalent to an increase of \$10 per \$1,000 of assessed property value.¹⁶ Within the 1 percent (\$10) limit, the aggregate levy of the state property taxes may not exceed 0.36 percent of the 1 percent total (or \$3.60 of the \$10 total) and the aggregate total of local “senior” and “junior” taxing districts may not exceed 0.59 percent of the 1 percent total (or \$5.90 of the \$10 total). The remaining 0.05 percent of the 1 percent limit (or \$0.50 of the \$10 total) is available for other taxing districts, under which a county ferry district taxing falls.¹⁷ The amount of ad valorem tax revenue a county ferry district in Kitsap County could generate depends on several factors, including the rate assessed, the extent of ferry district boundaries, the value of the assessed property within the district, and the available capacity within the one-percent maximum rate limit.
- **Excess levies**—A ferry district may impose excess levies upon the property included within the district for a one-year period, to be used for operating or capital purposes whenever authorized by the electors of the district under RCW 84.52.052.¹⁸ The excess levy requires a voter approval of 60 percent, with 40 percent voting in the last general election.¹⁹ The excess levy is not subject to the regular levy’s aggregate one-percent rate limits.²⁰

A county ferry district may incur general indebtedness and issue general obligation bonds to finance the construction, purchase, and preservation of passenger-only ferries and associated terminals and may retire the indebtedness in whole or in part from the revenues received from the ad valorem tax levy authorized under RCW 36.54.130.²¹

Taxes imposed by a county ferry district may be used for POF capital and operating costs; costs associated with the purchase, lease, or rent of ferry vessels and dock facilities; operation, maintenance, and improvements to ferry vessels and dock facilities; providing shuttle services between the ferry terminal and passenger parking facilities; other landside improvement directly related to providing POF service; and related personnel costs.²²

¹³ RCW 36.54.030.

¹⁴ RCW 36.54.110.

¹⁵ RCW 36.54.130.

¹⁶ RCW 84.52.043.

¹⁷ RCW 84.52.043(2).

¹⁸ RCW 36.54.140.

¹⁹ Article VII, section 2(a) of the State Constitution.

²⁰ “A Legislative Guide to Washington State Property Taxes,” 2014.

http://www.leg.wa.gov/LIC/Documents/EducationAndInformation/Citizens_Guide_to_Property_Taxes.pdf.

²¹ RCW 36.54.135.

²² RCW 36.54.130.



Local Funding Sources Authorized for a Port District

Port districts are special taxing districts created for the purposes of acquisition, construction, maintenance, operation, development, and regulation within the district of harbor improvements, rail or motor vehicle transfer and terminal facilities, water transfer and terminal facilities, air transfer and terminal facilities, or any combination of such transfer and terminal facilities, and other commercial transportation, transfer, handling, storage and terminal facilities, and industrial improvements.²³ Currently, there are 12 port districts located in Kitsap County.²⁴ Port districts are authorized to provide POF service subject to applicable state and federal laws pertaining to such service.²⁵ However, unlike PTBAs and county ferry districts, there are no statutorily-authorized dedicated POF funding sources available to port districts.

3.3. STATE PASSENGER-ONLY FERRY REVENUE SOURCES

Through the approval of House Bill (HB) 1853 in 2003, the Washington State Legislature expanded the authority of a PTBA to provide voter-approved local taxes for the explicit provision of funding POF service. This statutory change signaled the Legislature's intent for locally-operated POF ferry service to be funded primarily through local (or federal) revenue sources, allowing State revenue to be dedicated to funding the State vehicle ferry program operated by Washington State Ferries (WSF).²⁶ In the 10 years since HB 1853 was approved, WSF remains critically underfunded.²⁷

For State taxes to be provided to KT for the provision of POF service, WSDOT must typically appropriate State funding in the biennial transportation funding package or supplemental budget bill, which, as with all legislation, is subject to gubernatorial veto. The current widespread State transportation funding deficit, affecting WSF, state and local transportation projects and programs, makes the availability of state funds for local POF service unlikely.

Grants eligible under WSDOT's public transportation consolidated grant program align with the goals of providing assistance to rural communities and paratransit/special needs services and programs. However, WSDOT has established a Regional Mobility Grant program in accordance with RCW 47.66.030 to provide funding to local agencies for projects that promote regional mobility and connectivity. A review of historical projects funded through this grant program indicates that parking facilities, park-and-ride lots, and multimodal connectivity projects to ferry terminal facilities would be strong projects to compete as part of this discretionary grant program. Between 2006 and 2013, the Regional Mobility Grant program has funded approximately \$99 million for 45 completed local projects. The average state-funded portion was \$2.2 million, with the maximum grant allocation of \$8 million.²⁸ During the FY 07-09 state biennial budget cycle, Kitsap Transit was awarded \$2.4 million under this program for the Harper Park and Ride.

²³ RCW 53.04.010.

²⁴ Kitsap County Government (<http://www.kitsapgov.com/assr/levy/districts.htm#park0>).

²⁵ RCW 53.08.295.

²⁶ Findings—Intent—2003 c 83: "The legislature finds that passenger-only ferry service is a key element to the state's transportation system and that it is in the interest of the state to ensure provision of such services. The legislature further finds that diminished state transportation resources require that regional and local authorities be authorized to develop, operate, and fund needed services."

²⁷ WSDOT 2013-2015 Biennial Budget Request (September 2012).

²⁸ WSDOT Regional Mobility Grant 2013 Annual Report (October 2013).

3.4. FEDERAL PASSENGER-ONLY FERRY REVENUE SOURCES

Similar to other modes of public transportation, POF ferry providers may draw on federal grants and funding programs for assisting with the capital costs of vessels, terminals, landside multimodal connections, parking structures, and other necessary infrastructure to support the POF system, especially for the provision of new service. This section identifies the various federal grant and funding programs available to KT for consideration in developing the POF investment plan and includes:

- Federal-Aid Highway Funding Sources
- Federal-Aid Public Transportation Sources
- Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program

Federal-Aid Highway Funding Sources

Certain federal-aid highway funds administered by the Federal Highway Administration (FHWA) are available for POF improvements. The three primary programs for which these funds are available are:

- Surface Transportation Program
- Ferry Boat and Terminal Facilities Construction Formula Program
- Congestion Mitigation and Air Quality Improvement Program

Another fourth federal-aid program, the National Highway Performance Program (NHPP), is designed to fund improvements to the National Highway System (NHS) and, therefore, may be used to fund only vehicular ferry vessels and terminals in specific instances where the ferry provides a link to a designated NHS facility. NHPP funds may not be used for POF improvements.

Surface Transportation Program (STP)

STP funds are considered the most flexible FHWA-administered funding source and can be used for a variety of transportation projects and programs. STP funds may be used for capital improvements to POF vessels and terminal facilities provided the project meets the federal definition of an eligible transit project²⁹ and is eligible for funding under 23 U.S.C. 129(c), which requires that:

- The ferry facility must not operate in foreign or international waters except for ferry service in Hawaii, Puerto Rico, a U.S. territory, and Alaska and for ferry service between any state and Canada or between Alaska and Washington.
- It must not be feasible to build a bridge, tunnel, or other highway structure in lieu of the ferry.

²⁹ As defined in Chapter 53 Title 49 U.S.C.



- The operating authority for the ferry must be under the control of the State or another public entity.

In addition to capital improvements to existing ferry facilities and construction of new ferry facilities, cost-effective preventive maintenance activities that extend the useful life of the ferry facility also are eligible.³⁰ The operational costs of the ferry vessels or terminals, general maintenance, and fuel are not eligible for direct STP funds. In addition, STP funds may be used only for the allocable portion of the facility or vessel receiving federal funding. For leased vessels, STP funds may be used only for the portion of the lease cost associated with providing the vessel, which is viewed as the equivalent capital cost of an outright vessel purchase.³¹

In addition to eligible ferry vessels and terminal facility projects, approach roadways for ferry terminals are eligible for STP funding as a project that accommodates other transportation modes and provides access to the port.³² The federal share for the STP program is 80 percent, requiring a 20-percent local match.

STP funds are allocated by FHWA to the Washington State Department of Transportation (WSDOT) based on a statutory allocation formula found in 23 U.S.C. 133(d). This formula determines that, of Washington State's net allocation of STP funds (minus funds set aside for State Planning and Research and Transportation Alternatives Program³³), 50 percent is allocated to the appropriate metropolitan planning organization (MPO) or County lead agency based on the area's relative share of the total state population. Of the remaining 50 percent, WSDOT sets aside a portion for the State bridge program, and the remainder is split between WSDOT and local governments to maintain the policy of providing two-thirds of federal funds to WSDOT and the remaining one-third to local agencies.³⁴

Under the metropolitan planning process, the Puget Sound Regional Council (PSRC), in cooperation with WSDOT and local officials, is responsible for prioritizing and selecting the projects to be funded with regional STP funds within King, Pierce, Snohomish, and Kitsap counties. STP funds sub-allocated to each county are prioritized by a countywide forum responsible for coordinating the competitive process to recommend projects to be funded with Kitsap County-allocated STP dollars. Therefore, eligible POF ferry boat and terminal improvement projects will compete with other eligible projects in this four-county region as part of the regional transportation planning and prioritization process, as well as statewide for statewide STP funds sub-allocated outside of the four-county region.

³⁰ 23 U.S.C. 116(e).

³¹ 2 C.F.R. 225 Appendix A, paragraph C.

³² 23 U.S.C. 133(b)(25) and 23 U.S.C. 142(c). These projects are not subject to the Location of Project requirement in 23 U.S.C. 133133(c); therefore, eligible improvements to local or rural minor collectors are eligible.

³³ The Transportation Alternatives Program (TAP) was authorized under MAP-21 and provides funding for projects defined as transportation alternatives as defined in 23 U.S.C. 101(a)(29), which does not include passenger or vehicular ferry infrastructure (e.g., vessels and terminals) or services.

³⁴ WSDOT Surface Transportation Program Management.

Ferry Boat and Terminal Facilities Construction Formula Program

The Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) established a Ferry Boats and Ferry Terminal Facilities discretionary grant program administered by FHWA. This program was continued by subsequent federal transportation funding reauthorizations through FY 2010. This discretionary grant program was eliminated when the most recent federal transportation funding reauthorization, Moving Ahead for Progress in the 21st Century Act (MAP-21), was signed into law on July 6, 2012. Under MAP-21, 23 U.S.C. 147 was amended to provide funding for the construction of ferry boats and ferry terminal facilities by a formula program known as the Ferry Boat and Terminal Facilities Construction Program. As discussed later in this section, a separate discretionary grant program for ferry vessels and terminals is now administered under the Federal Transit Administration (FTA) as part of the Section 5307, Urbanized Area Formula Grant Program.

Under the Ferry Boat and Terminal Facilities Construction Program, FHWA-administered federal-aid highway funds are available, through WSDOT, for the design and construction of POF ferry vessels and for designing, acquiring right-of-way, and constructing POF terminal facilities. Similar to STP and CMAQ funds, POF projects to receive Ferry Boat and Terminal Facilities Construction Program funds must meet the criteria specified under 23 U.S.C. 129(c) to be eligible for funding. Unlike STP funds, approach roadways for ferry terminals are not eligible for funding under this program.

To be eligible for funding under this program, ferry services must be included in the biennial National Census of Ferry Operators conducted by the Research and Innovative Technology Administration's (RITA) Bureau of Transportation Statistics (BTS). The funds are distributed to eligible ferry operators through a formula based on the number of routes miles served by the operation, the number of passengers carried each year, and the number of vehicles carried each year.³⁵ The federal share for this program is 80 percent, requiring a 20-percent local match.

Although MAP-21, under which this program was created, is set to expire following FY 2014, the FY 2015–2018 federal transportation funding reauthorization proposal allocates a total of \$276 million for the Ferry Boat and Terminal Facilities Construction Program during the four-year period.³⁶

Congestion Mitigation and Air Quality Improvement (CMAQ) Program

The CMAQ Program was established in 1991 under ISTEA to provide a flexible federal funding source for transportation projects and programs that serve to reduce traffic congestion and improve air quality and that are eligible for funding under 23 U.S.C. 129(c). CMAQ funds are more flexible than STP or Ferry Boat and Terminal Facilities Construction Formula Program funds in that they can be used to fund capital costs as well as limited operating costs for eligible new or expanded transit service.

³⁵ 23 U.S.C. 147(d).

³⁶ FHWA FY 2015 Budget (<http://www.dot.gov/sites/dot.gov/files/docs/FHWA-FY2015-Budget-Estimates.pdf>).



Under MAP-21, federal CMAQ funds are apportioned annually based on the amount appropriated to each state for FY 2009 under the Safe, Accountable, Flexible, and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU).³⁷ PSRC is responsible for prioritizing and selecting projects to receive CMAQ funds. CMAQ funds must be spent in regions that are classified as non-attainment areas and do not meet national air quality standards for ozone or carbon monoxide. Kitsap County jurisdictions are not eligible to receive CMAQ funds due to the boundaries of the region’s air quality maintenance and nonattainment areas.³⁸ However, based on discussions between PSRC and KT staff, the potential to receive CMAQ funds based on a portion of POF passengers traveling from King County exists.

Federal-Aid Public Transportation Funding Sources

Certain federal public transportation funds administered by FTA are available for POF-related improvements, including:

- Section 5307, Urbanized Area Formula Grant Program
- Section 5309, Capital Investments Grant Program (New Starts/Small Starts Program)
- Passenger Ferry Boat Discretionary Program

Section 5307, Urbanized Area Formula Grant Program

The Urbanized Area Formula Funding program authorized under 49 U.S.C. 5307 makes available federal funding for public transportation capital and planning projects in urbanized areas. Section 5307 funds provide a flexible source for planning and capital projects and can be used to purchase ferry vessels and terminals.

Section 5307 funds may be used only for transit-related projects serving the three federal urbanized areas (UZAs) within PSRC’s four-county region. These three urbanized areas are Bremerton, Marysville, and Seattle-Tacoma-Everett. As KT is the only public transit agency in the Bremerton UZA, the agency is responsible for recommending projects to PSRC as part of the project selection and prioritization process.

As a program under Section 5307, the federal share for this program is 80 percent, requiring a 20-percent local match, with exceptions made for acquiring vehicles in compliance with the Clean Air Act (CAA) or Americans with Disabilities Act (ADA) (requiring a 15% match), or for vehicle- or facilities-related improvements attributable to compliance with the CAA or ADA (requiring a 10% match).³⁹ In recent years, KT has received toll credits from WSDOT for use as the local match portion of federal transportation investment funds.

Section 5307 funds may be used to offset operating costs for urbanized areas. Prior to MAP-21, only urban areas with less than 200,000 in population were eligible for using Section 5307 funds for operating expenses. This eligibility was expanded under MAP-21 by special rule whereby transit systems in urbanized areas with over 200,000 population can now use Section 5307

³⁷ 23 U.S.C. 104(b)(4). Under SAFETEA-LU, federal CMAQ funds are apportioned annually to each state according to the severity of its ozone and carbon monoxide (CO) levels. The population of each county that is in a nonattainment or maintenance area for ozone and/or CO is weighted by multiplying by the appropriate factor listed in 23 U.S.C. 104(b)(2) (SAFETEA-LU §1103(d)).

³⁸ 2014 Policy Framework for PSRC’s Federal Funds.

³⁹ FTA Passenger Ferry Grant Program webinar, September 11, 2013.

formula funds for operating expenses. Transit systems operating 75 or fewer buses for fixed-route service in peak service hours may use up to 75 percent of their attributable share of funding for operating expenses, while systems operating between 76 and 100 buses may use 50 percent of their attributable share for operating.⁴⁰ According to data from the 2012 National Transit Database (NTD), KT operates 84 vehicles in maximum service. So long as this threshold remains under the 100 maximum bus threshold upon reclassification to a large urbanized area, KT will be eligible to expend up to 50 percent of available Section 5307 funds for operating costs. While this provides KT with more flexibility in how this revenue is spent, use of Section 5307 funds for operating expenses could detract from the total available capital dollars to support POF and other public transportation services. Section 5307 dollars are also a very limited resource and the revenue is currently allocated (and projected to remain allocated) primarily towards funding fixed-route transit service. Therefore, any proposed use of Section 5307 funds for POF service might come to some extent at the expense of bus service. KT is anticipating receiving approximately \$2.6 million in Section 5307 funds in FY 2015.⁴¹

As of the 2010 Census, the population of the Bremerton UZA was just under the 200,000 population threshold (at 198,979 persons) that classifies as a large urbanized area. As a small urbanized area, Section 5307 funds may be used to help offset public transportation operating costs; however, the operating expenses funded under this grant program may not exceed 50 percent of the net project cost.⁴² For small urban areas less than 200,000, the formula for the apportionment of Section 5307 funds is based on population and population density. For larger urbanized areas with populations of 200,000 and more, the formula is based on a combination of bus revenue vehicle miles, bus passenger miles, fixed-guideway revenue vehicle miles, and fixed-guideway route miles, as well as population and population density.⁴³

Until such time as the Bremerton UZA is reclassified as a large urbanized area, the amount of Section 5307 funds received will not be impacted by providing additional fixed guideway (POF) service, as the funds are distributed based on population and population densities for small urbanized areas. It is anticipated that the reclassification of the Bremerton UZA to a larger urbanized area will result in additional Section 5307 funds and, under the distribution formula for larger urbanized areas, the provision of new POF service may increase KT's allocation of Section 5307 funds under the allocation formula.⁴⁴

Section 5309, New Starts/Small Starts Program (Capital Investments Grant Program)

The Capital Investment Grant Program (more commonly known as the New Starts, Small Starts, and Core Capacity program) administered by FTA under 49 U.S.C. 5309 is one of the largest competitive federal grant programs and is used to fund the construction of new or expanded rail, bus rapid transit (BRT), and ferry systems. Capital Investment funds are awarded on a discretionary basis based on a competitive application process. To be eligible under the Small Starts program, grant requests must be for less than \$75 million and the total project cost may not

⁴⁰ 49 U.S.C. 5307(2).

⁴¹ Final Budget/Five-Year Outlook provided in the Transit 101 Report (revised February 11, 2014).

⁴² 49 U.S.C. 5307(a)(1)(D) and (d)(2).

⁴³ FTA Circular 9030.1E, Chapter III.

⁴⁴ Kitsap Transit is anticipating a status change to a large urbanized area in 2016, per footnote 10 of the Final Budget/Five-Year Outlook provided in the Transit 101 Report (revised February 11, 2014).



exceed \$250 million.⁴⁵ Small Starts projects benefit from a project evaluation and rating process that is more simplified than new fixed-guideway capital projects.

Eligible funding for new fixed-guideway capital projects or Small Starts projects includes the acquisition of real property; the initial acquisition of rolling stock (including ferry boats) for the system; and the acquisition of rights-of-way for and relocation of fixed-guideway corridor development for projects in the advanced stages of project development or engineering.⁴⁶

Small Starts projects may use a very simple alternatives analysis process, and the preliminary engineering and final design work is combined into one phase, referred to as Project Development. To be eligible to receive funds, the project must be in PSRC's adopted long range transportation plan,⁴⁷ and the applicant must have legal, financial, and technical capacity to carry out the project; satisfactory continuing control over the use of the equipment or facilities; and the technical and financial capacity to maintain new and existing equipment.⁴⁸ While the statutory match for Small Starts funding is 80 percent federal and 20 percent local, the historical federal share is 60 percent based on congressional direction.⁴⁹ The FY 2015–2018 federal transportation funding reauthorization proposal continues the annual allocation of Section 5309, for a total of \$120 million total or \$30 million annually during the four-year period.⁵⁰

Passenger Ferry Boat Discretionary Program

Under MAP-21, a portion of the Section 5307 Urbanized Area Formula Grant Program administered by FTA has been set aside to improve and maintain the nation's public ferry systems by providing federal financial assistance for capital projects, including the purchase, replacement, or rehabilitation of ferries, terminals, and related infrastructure, related equipment (e.g., fare technology and communication devices), and infrastructure needs related to expansion. Operating expenses, planning studies, and preventative maintenance are not eligible expenditures.⁵¹

Under this discretionary program, grant applications are evaluated based on demonstration of need, demonstration of benefits, consistency with local and regional priorities, connectivity to other modes of transportation, project readiness, and technical, legal, and financial capabilities. As a direct recipient of Section 5307 funds, KT is eligible to apply for funds for capital improvements to support POF service that available under this program. As a program under Section 5307, the federal share for this program is 80 percent, requiring a 20-percent local match, with exceptions made for acquiring vehicles in compliance with the CAA or ADA (requiring a 15% match) or for vehicle- or facilities-related improvements attributable to compliance with the CAA or ADA (requiring a 10% match).⁵²

⁴⁵ 49 U.S.C. 5309(a)(7).

⁴⁶ 49 U.S.C. 5309(b)(1).

⁴⁷ 49 U.S.C. 5303 and 5304.

⁴⁸ 49 U.S.C. 5309(b)(1).

⁴⁹ Source: FTA. The Congressional Conference Report that accompanied the FY 2002 Department of Transportation Appropriations Act instructs that "FTA not to sign any new full funding grant agreements after September 30, 2002, that have a maximum Federal share of higher than 60 percent."

⁵⁰ FTA FY 2015 Congressional Notification Final Budget Submission (<http://www.dot.gov/sites/dot.gov/files/docs/FTA%20FY%202015%20CJ%20Final%20-%203.26.14.pdf>).

⁵¹ 49 U.S.C. 5307; FTA Passenger Ferry Grant Program webinar, September 11, 2013.

⁵² FTA Passenger Ferry Grant Program webinar, September 11, 2013.

Although MAP-21, under which this program was created, is set to expire following FY 2014, the FY 2015–2018 federal transportation funding reauthorization proposal continues the annual allocation of \$30 million, for a total of \$120 million total during the four-year period.⁵³

Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program

The TIGER Discretionary Grant program, which began in 2009, is allocated through the U.S. Department of Transportation (USDOT) to provide funding for road, rail, transit, and port projects that promise to achieve critical national objectives (safety, economic competitiveness, state of good repair, livability, and environmental sustainability) and not eligible for funding through traditional USDOT programs. USDOT also evaluates projects in regard to economic contribution, innovation, and formation of new partnerships.

Unlike the FHWA- and FTA-administered programs previously discussed, in which funds are allocated primarily through state transportation departments and transit agencies, the TIGER Program has broad eligibility and is competitive, as opposed to formulaic, in nature. TIGER grants can provide capital funding directly to any public entity, including municipalities, counties, port authorities, tribal governments, or MPOs. Of the \$4.1 billion allocated through the six rounds (years) of TIGER grants, agencies in Washington State have received approximately \$172 million.

TIGER grants can fund projects that have a local match as low as 20 percent of the total project costs. This program is intended to provide federal funding for larger-scale capital projects (between \$10 and \$200 million) located outside of rural areas.⁵⁴ Pursuant to the FY 2014 Consolidated Appropriations Act, no more than 25 percent of the funds (or \$150 million) made available in a TIGER grant round may be awarded to projects in a single state.

TIGER grants are highly competitive; the U.S. DOT received nearly 800 applications during the last grant cycle in FY 2014, equating to grant requests totaling \$9.5 billion (or more than 15 times the \$600 million allotment). In response to the popularity of this program, the USDOT is proposing an increase to the program budget. The agency's FY 2015 budget proposal includes \$5 billion (or \$1.25 billion annually) over the next four years for an expanded TIGER discretionary grant program.⁵⁵

3.5. SUMMARY OF FINDINGS

Appendix B summarizes the findings of this assessment, highlighting the opportunities and challenges of each local, federal, and state revenue source potentially available to Kitsap County for the provision of POF service.

⁵³ FTA FY 2015 Congressional Notification Final Budget Submission (<http://www.dot.gov/sites/dot.gov/files/docs/FTA%20FY%202015%20CJ%20Final%20-%203.26.14.pdf>).

⁵⁴ FY 2014 Consolidated Appropriations Act.

⁵⁵ U.S. DOT Budget Highlights FY 2015 (<http://www.dot.gov/sites/dot.gov/files/docs/BudgetHighlightsFY2015.pdf>).



Appendix A

Governance Model Summary Matrix

Note: Those considered to be the most viable options for KT are highlighted in yellow, while those deemed not viable are shaded in grey.

Governance Model	Voter Authorization Required	Statutory Changes Required	Benefits	Risks and Conditions
Public Transportation Benefit Area	Funding via MVETs and Sales and Use Taxes	KT has been pursuing a statutory modification that would allow the establishment of a POF district within the PTBA and authorize the use of parking taxes.	<p>Currently allowed governance model</p> <p>Several funding options (MVETs, sales and use tax, fares, parking fees, licensing/advertising fees)</p> <p>Authority to enter into JDAs for P3</p>	<p>Public subsidy funding options (MVETs and taxes) require voter approval, which has failed for POF service in the past.</p> <p>Investment Plan must be finalized.</p>
County Ferry District	Only for excess property tax levies	None, unless KT wished to pursue as a lead agency (currently restricted to counties).	<p>Can be formed by the county legislative authority without voter approval</p> <p>Ad valorem taxes do not require voter approval</p>	<p>Cross-county transit requires joint commission with King County Ferry District with unknown impacts</p> <p>Would require agreements with Kitsap County as the sponsoring entity and KT leading the implementation. Potential risk for KT to be “on the hook” to provide service without the added leverage of being the governing entity</p>
Transportation Benefit District	None	None required, but could seek to change RCW to enable Kitsap County to act as the sponsoring entity, or to enable a tax collection without voter approval.	<p>Currently allowed governance model</p> <p>Option for up to \$20 vehicle registration fee without voter approval</p>	<p>Would require agreements with Kitsap County or a city to act as the sponsoring entity, with KT leading the implementation.</p> <p>Other funding sources currently require voter approval</p>

Governance Model	Voter Authorization Required	Statutory Changes Required	Benefits	Risks and Conditions
Port District	None	None	Currently allowed governance model Bonds available for terminal/facility funding that do not require voter approval	Limited funding sources Would require a sponsoring port(s) district Would likely require agreements with the Port of Seattle Unknown entity, has not been used for the provision of waterborne passenger transit in the region
Public-Private Partnerships	None	None	Shared risk along with shared investments, managing responsibilities, performance, and revenue/cost apportioning Maintained ownership of capital property	Profit requirements for private entity may not be met leaving KT without a service provider Successful models have required higher fare structures than may be feasible/acceptable
Regional Transit Authority	None	Requires a county council vote of at least two bordering counties with a minimum population of 400,000 each. Kitsap County does not meet this threshold. Must provide high capacity transit	N/A – not evaluated because minimum criteria not met	N/A – not evaluated because minimum criteria not met



Governance Model	Voter Authorization Required	Statutory Changes Required	Benefits	Risks and Conditions
High Capacity Transportation Corridor Areas	None	Requires a population of more than 400,000 and adjoining a state boundary	N/A – not evaluated because minimum criteria not met	N/A – not evaluated because minimum criteria not met
City/County Transportation Authority	None	None	N/A – KT is already a PBTA, which makes further evaluation of this option unnecessary	N/A – KT is already a PBTA, which makes further evaluation of this option unnecessary
Water Emergency Transportation Authority	N/A – KT is not attempting to consolidate existing multi-provider services as a emergency management strategy.			
Transportation Authority (e.g., TransLink)	N/A – KT is already a PTBA. Additionally, TransLink was formed by an act of the Canadian legislature with significant taxing authority. This is not seen as a politically viable option in Kitsap County.			



Appendix B

Local, Federal, and State Potential Revenue Sources

	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
LOCAL REVENUE SOURCE	Sales and Use Tax – All Transit purposes (not to exceed a tax rate of 0.9 percent). Reoccurring Revenue Source: YES Dedicated POF Revenue: NO.	Existing PTBA ⁵⁶	Capital, operating, and maintenance.	Limited; maximum increase of 0.1 percent allowed under 0.9 percent limit.	Opportunities: <ul style="list-style-type: none"> • Flexible revenue source. • No new legislative authority required. • Potential to be viewed as increase to “existing” as opposed to “new” tax. Challenges: <ul style="list-style-type: none"> • Requires voter approval. • Limited revenue generation. • Potential for being viewed as a reduction of revenue capacity available for bus service
	Sales and Use Tax – POF service (not to exceed a tax rate of 0.4 percent). Reoccurring Revenue Source: YES Dedicated POF Revenue: YES.	Existing PTBA ⁵⁷	Capital, operating, and maintenance.	Moderate to high, depending on rate levied; maximum rate could yield approximately \$13.2 million annually.	Opportunities: <ul style="list-style-type: none"> • Flexible revenue source. • Potential to yield high revenue. • No new legislative authority required. • Can be used in conjunction with MVET. • Sales tax currently authorized fund local transit service. Challenges: <ul style="list-style-type: none"> • Requires voter approval.

⁵⁶ RCW 82.14.045.

⁵⁷ RCW 36.57A.200.

	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
	<p>Motor Vehicle Excise Tax (MVET) (not to exceed a rate of 0.4 percent of the value of most motor vehicles owned by a resident of the taxing district).</p> <p>Reoccurring Revenue Source: YES Dedicated POF Revenue: YES.</p>	Existing PTBA ⁵⁸	Capital, operating, and maintenance.	Variable depending on the number and value of motor vehicles purchased.	<p>Opportunities:</p> <ul style="list-style-type: none"> • Flexible revenue source. • No new legislative authority required. • Can be used in conjunction with POF-dedicated sales tax. • Stable source with built-in growth based on generally increasing MSRP valuation. <p>Challenges:</p> <ul style="list-style-type: none"> • Requires voter approval.
LOCAL REVENUE SOURCE	<p>Ad Valorem Tax (not to exceed \$0.75 per \$1,000 of assessed value on all taxable property located in the district).</p> <p>Reoccurring Revenue Source: YES. Dedicated POF Revenue: YES.</p>	County Ferry District ⁵⁹	Capital, operating, and maintenance. Costs for providing infrastructure and services to connect ferry terminal to passenger parking facilities also authorized.	Moderate to high, depending on several factors including the geographic boundaries of district, the rate levied, the assessed value of property within the district, and the allowable increase under the one-percent statutory property tax increase limit.	<p>Opportunities:</p> <ul style="list-style-type: none"> • Flexible revenue source. • Potential to yield high revenues. • No voter approval required. • District boundaries can be aligned with receipt of POF service benefits. <p>Challenges:</p> <ul style="list-style-type: none"> • Countywide implementation may impact residents who will not directly benefit from POF service provided. • Implementation within a geographic area limited to most benefit may be viewed as a disproportionate user fee. • Subject to the one-percent limit on property tax increases.

⁵⁸ RCW 36.57A.200.

⁵⁹ RCW 36.54.130.

	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
	Excess Property Tax Levy Reoccurring Revenue Source: NO. Dedicated POF Revenue: YES.	County Ferry District ⁶⁰	Capital, Operating, Maintenance	Variable, depending rate levied.	Opportunities: <ul style="list-style-type: none"> Not subject to the one-percent limit on property tax increases. Challenges: <ul style="list-style-type: none"> Short-term funding source. Requires voter approval of 60 percent with 40 percent of voters from last general election.
WSDOT	Regional Mobility Grant Program Reoccurring Revenue Source: NO. Dedicated POF Revenue: YES, based on needs of specific project.	Awarded on a competitive basis to public agencies for projects that promote regional mobility and connectivity. ⁶¹	Capital.	Variable, depending on available revenue and grant request. Average grant award from 2006-2013 was \$2.2 million.	Opportunities: <ul style="list-style-type: none"> Funding for parking facilities, park-and-ride lots, and multimodal connectivity projects to ferry terminal facilities are likely to be strong projects to compete as part of this discretionary grant program. Challenges: <ul style="list-style-type: none"> May compete with other local and regional transportation and multimodal projects.

⁶⁰ RCW 36.54.140.

⁶¹ RCW 47.66.030.

	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
FHWA	<p>Surface Transportation Program (STP)</p> <p>Reoccurring Revenue Source: NO. Dedicated POF Revenue: YES, based on needs of specific project.</p>	Awarded for projects that meet the federal definition of a transit project. ⁶²⁾	Capital and cost-effective preventative maintenance.	Variable; allocated locally and regionally by statutory formula. Funds awarded on a competitive regional and county basis.	<p>Opportunities:</p> <ul style="list-style-type: none"> • Does not require any special legislative authority or public vote. • Approach roadways for ferry terminals are eligible. <p>Challenges:</p> <ul style="list-style-type: none"> • Allocated by population-based statutory formula. • Does not fund operating expenses. • May compete with other regional transportation or KT projects. • Historically, smaller portions of STP funds have been allocated for ferry projects.
FHWA	<p>Construction of Ferry Boat and Ferry Terminal Facilities Program</p> <p>Reoccurring Revenue Source: YES. Dedicated POF Revenue: YES.</p>	Requires POF service be included in biennial Census of Ferry Operators. ⁶³	Design and construction of POF ferry vessels; design and acquisition of right-of-way, and construction of POF terminal facilities.	Variable; funds allocated by statutory formula based on service and operating variables.	<p>Opportunities</p> <ul style="list-style-type: none"> • Does not require any special legislative authority or public vote. <p>Challenges:</p> <ul style="list-style-type: none"> • Approach roadways for ferry terminals are not eligible. Does not fund operating expenses.

⁶² As defined in Chapter 53 Title 49 U.S.C.

⁶³ 23 U.S.C. 147(d).



	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
	<p>Congestion Mitigation and Air Quality (CMAQ) Program</p> <p>Reoccurring Revenue Source: NO. Dedicated POF Revenue: NO.</p>	<p><u>Eligibility is limited to the portion of ridership from King County, which is located in the regional non-attainment area.</u>⁶⁴</p>	<p>Transportation projects and programs that serve to reduce traffic congestion and improve air quality.</p>	<p>Variable, funds allocated by statutory formula and awarded on a competitive basis in King, Snohomish and Pierce Counties.</p>	<p>Opportunities:</p> <ul style="list-style-type: none"> • Can be used to fund both capital costs and limited operating costs for eligible new or expanded transit service. • Does not require any special legislative authority or public vote. <p>Challenges:</p> <ul style="list-style-type: none"> • KT not eligible for CMAQ funds at this time.
FTA	<p>Section 5307, Urbanized Area Formula Grant Program</p> <p>Reoccurring Revenue Source: YES. Dedicated POF Revenue: NO.</p>	<p>Designated small and large urbanized areas.⁶⁵</p>	<p>Capital; limited operating allowed for small urbanized areas or for large urbanized areas operating less than 100 peak fixed-route vehicles.</p>	<p>Low; funds likely dedicated to addressing needs for existing services.</p>	<p>Opportunities:</p> <ul style="list-style-type: none"> • May be used to offset operating costs. • Does not require any special legislative authority or public vote. • Impending reclassification to a large urbanized area likely to increase available funds. <p>Challenges:</p> <ul style="list-style-type: none"> • As a currently designated small urbanized area, new POF service will not increase funds distributed based on population-based formula. • Will directly compete with other KT projects and identified needs.

⁶⁴ 2014 Policy Framework for PSRC's Federal Funds states that Kitsap County is outside of the non-attainment area. However, based on discussions between PSRC and Kitsap Transit staff, the potential to receive CMAQ funds based on POF ridership from King County exists.

⁶⁵ 49 U.S.C. 5307.

	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
FTA	<p>Capital Investments Grant Program (New Starts/Small Starts)</p> <p>Reoccurring Revenue Source: NO. Dedicated POF Revenue: Yes, based on needs for specific project.</p>	Funds awarded on a competitive basis to local governments and public agencies. ⁶⁶	Capital costs of providing new or expanded rail, bus rapid transit, and ferry systems	High; funding for small starts projects may reach \$75 million.	<p>Opportunities:</p> <ul style="list-style-type: none"> • Potential to yield high revenue. • Does not require any special legislative authority or public vote. • Simple alternatives analysis process. • Preliminary engineering and final design work is combined into one project development phase. <p>Challenges:</p> <ul style="list-style-type: none"> • May compete with other regional transit needs. • Local match is higher than other federal programs. • Does not fund operating expenses. • Project must be in PSRC’s adopted long range transportation plan.
FTA	<p>Passenger Ferry Boat Discretionary Program</p> <p>Reoccurring Revenue Source: NO. Dedicated POF Revenue: YES.</p>	Direct recipients of Section 5307 funds. ⁶⁷	Capital expansion replacement, or rehabilitation of ferries, terminals, and related infrastructure; related equipment.	Variable, funds awarded on a competitive basis.	<p>Opportunities:</p> <ul style="list-style-type: none"> • Does not require any special legislative authority or public vote. <p>Challenges:</p> <ul style="list-style-type: none"> • Does not fund operating expenses, planning studies, or preventative maintenance.

⁶⁶ 49 U.S.C 5309.

⁶⁷ 49 U.S.C. 5307; FTA Passenger Ferry Grant Program webinar, September 11, 2013.



	Revenue Source	Eligibility	Allowable Expenditures	Potential Revenue Yield	Assessment
U.S. DOT	<p>Transportation Investment Generating Economic Recovery (TIGER) Discretionary Grant Program</p> <p>Reoccurring Revenue Source: NO. Dedicated POF Revenue: YES, based on needs for specific project.</p>	Direct funding to any public entity. ⁶⁸	Road, rail, transit, and port capital projects that promise to achieve critical national objectives.	High; intended to fund larger scale capital projects between \$10 and \$200 million.	<p>Opportunities:</p> <ul style="list-style-type: none"> • Potential to yield high revenue. • Does not require any special legislative authority or public vote. • U.S. DOT is expanding the TIGER grant program budget significantly over the next four years. <p>Challenges:</p> <ul style="list-style-type: none"> • Does not fund operating expenses. • Annual funding maximums per state; must compete with other regional and state projects. • Highly competitive program with historical grant requests far exceeding allotted budget.

⁶⁸ U.S. DOT

Appendix C

Terminal Facilities

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KITSAP TRANSIT

Terminal Facilities



July 2014 | Final Report





Passenger-Only Ferry Business Plan and Long Range Strategy

Terminal Facilities

July 15, 2014

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1. Introduction

Future Kitsap Transit Passenger-Only Ferry (POF) service is focused in three geographical areas of Kitsap County: north, south, and Central Kitsap. Potential POF routes have been studied numerous times as identified in the Task 1 History and Background report. It is because of this past study that potential terminal locations can focus on these three areas of Kitsap County, which have a population interested in POF service, as well as existing infrastructure in place to aid in the development of future service. This report identifies potential POF terminal locations, the associated terminal facility requirements, and vessel maintenance requirements associated with that service and the improvements needed to operate POF service.

2. Terminal Locations

2.1. SITE IDENTIFICATION

As mentioned above and outlined in the Task 1 report, the pursuit of POF service in Kitsap County has a long history. With this knowledge, as well as the presence of existing infrastructure in place, three locations have been identified as locations to support future POF service.

Selection Criteria

Evaluation criteria include connections to other modes of transportation, accessibility, and presence of existing infrastructure as outlined below.

- Accessibility to regional transportation systems and parking.
- Land use compatibility and availability.
- Presence and current condition of infrastructure and improvements required.
- Infrastructure imposing least environmental impact (avoidance of eelgrass beds).

Modal Connections and Parking

To entice ridership, a terminal location must provide good modal connections to other transit options either as a method to get to the POF or as an alternative mode of transportation. In addition to attracting transit riders, parking nearby the terminal is a valuable asset and another component to attracting riders.

Land Use Compatibility and Availability

Future POF terminals should be compatible with surrounding land uses. This compatibility is partly related to the modal connections as described above, but also the surrounding land uses. In each case, Bremerton, Kingston, and Southworth, the potential locations are compatible with POF use as they are co-located with the Washington State ferry system or in a location where existing or past POF service has been offered.

Presence and Current Condition of Infrastructure and Improvements

Terminal infrastructure, both in water and out of water, are expensive assets. Identified locations for future POF service should leverage existing infrastructure where possible to lower initial investment costs.

Environmental Impacts

Environmental impacts associated with future terminal locations should be minimized as much as possible. This minimization can be achieved by utilizing existing in-water infrastructure when applicable or minimizing and avoiding impacts to environmentally sensitive areas with new infrastructure.

2.2. LOCATIONS IDENTIFIED

As mentioned above and outlined in the Task 1 report, the pursuit of POF service in Kitsap County has a long history. With this knowledge, as well as the presence of existing infrastructure in place, three locations within Kitsap County have been identified as locations to support future POF service. Service from these locations would be direct to downtown Seattle, Pier 50, the current location of King County POF service. The identified Kitsap County terminal locations include:

- **Bremerton:** Location of existing Kitsap Transit foot ferry terminal, located northeast of the Washington State Ferries (WSF) terminal; the site of the newly constructed A float and associated improvements.
- **Kingston:** Location of past POF operations, located southwest of the WSF terminal.
- **Southworth:** Proposed location south of existing WSF terminal.
- **Pier 50 in Seattle:** The eastern hub of the Kitsap County passenger-only ferries. Pier 50 is the current location of the King County Water Taxi, located south of the existing WSF terminal. It is anticipated that Pier 50 would serve as the eastern hub for POF routes from Kitsap County. Pier 50 is currently preparing plans for redevelopment as part of the Colman Dock project. As part of the Seattle Permanent Facility Siting Study prepared for the King County Water Taxi, Pier 50 was identified as the best location for POF service.



Figure 2-1: Proposed Terminal Locations Overview

3. Multimodal Connections

The multimodal connections are important to the viability of a POF operation. Since passengers are walking on the ferry, they must leave their cars behind or travel to the ferry terminal using alternate modes. These include both motorized (transit, private vehicles, and taxi services) and non-motorized connections (walking and cycling).

3.1. BREMERTON FERRY TERMINAL

The multimodal connections available at and in proximity to the Bremerton Ferry Terminal are illustrated in Figure 3-1.

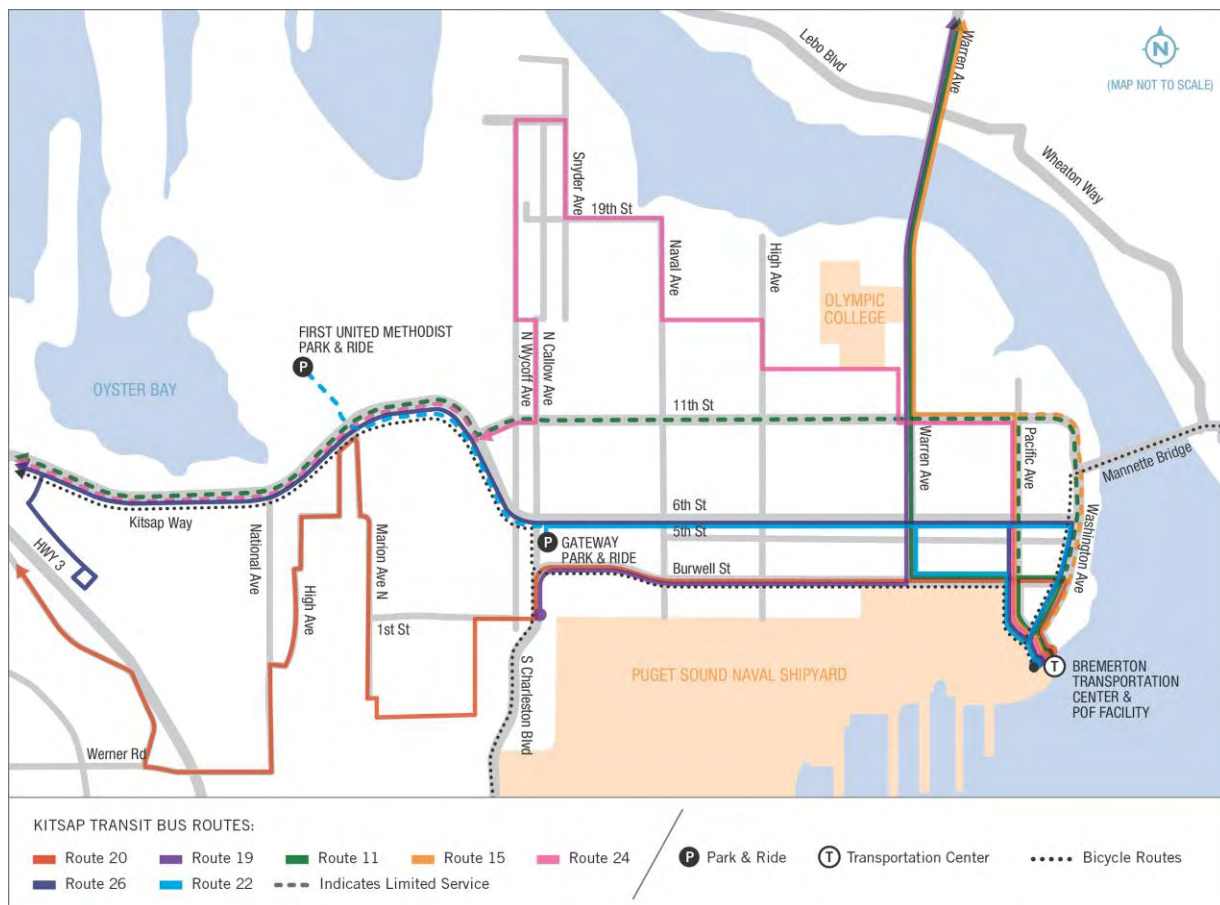


Figure 3-1: Bremerton Ferry Terminal Multimodal Connections



Transit

Kitsap Transit's Bremerton Transportation Center is located at the Bremerton Ferry Terminal, providing POF passengers connections to Kitsap Transit Routes 11, 15, 20, 21, 22, 24, 25, 26, and 29, the Kitsap Transit Foot Ferry and a connecting route to Mason Transit. Several of these routes only operate on weekdays.

Passenger Pick-Up and Drop Off

There is an informal passenger drop-off area at the intersection of First Street and Washington Avenue, near the entry to the Bremerton Transportation Center. Disabled passengers may be picked-up or dropped off on the transit deck at Bremerton Transportation Center. For passengers taking a taxi, there is a taxi zone located adjacent to the disabled zone on the deck of the Bremerton Transportation Center where passengers can be picked up or dropped off via taxi.

Public Parking and Park-and-Rides

There are three City of Bremerton-owned parking garages and two City of Bremerton-owned parking lots located within three blocks of the Bremerton Ferry Terminal. Each offer 24-hour rates for overnight or extended stays likely required by POF passengers.

Gateway Center Park-and-Ride is located 1.5 miles from the ferry terminal. There are a total of 104 spaces, 6 of which are designated for carpool vehicles. There are direct connections to Kitsap Transit Routes 20, 22, and 26 between the park-and-ride and ferry terminal. This facility is lighted and allows parking anytime in the same business day.

Bremerton United Methodist Church Park-and-Ride is located 2.5 miles from the ferry terminal. There are 53 parking spaces, none of which are designated for carpool vehicles. There are direct connections to Kitsap Transit Routes 11 or 26 to the ferry terminal, or Routes 20, 22, 24, or 26 from the ferry terminal.

Non-Motorized Connections

Pedestrian facilities are provided upon exiting the ferry terminal and provide immediate access to major activity centers and retail sites located around terminal. Pedestrian facilities and marked crosswalks are provided within 0.5 miles of the Bremerton Ferry Terminal in areas accessible by the public. Basic sidewalk facilities along Pacific Avenue and Fourth Street are complemented with curb bulb-outs and other streetscaping features to enhance pedestrian safety and improve the walking experience. There is bicycle access to the Bremerton Ferry Terminal and Bremerton Transportation Center from Washington Avenue, Pacific Avenue, and Burwell Street via shared-use lanes. Bicyclists may also access the Bremerton Ferry Terminal by taking their bicycle on board a Kitsap Transit bus as all fixed-route service vehicles have mounted bicycle racks.

Overall Assessment and Coordination Needs

By co-locating Kitsap Transit POF service at the Bremerton Ferry Terminal, there are existing multimodal connections provided in terms of public transportation, bicycle, and pedestrian facilities, as well as nearby public parking facilities and access, via several transit routes, to two park-and-ride lots located within 2.5 miles of the ferry terminal. There are no immediate multimodal connectivity needs that must be addressed at this proposed terminal site aside from coordination between existing Kitsap Transit bus service and the POF arrivals and departures from the Bremerton Ferry Terminal.

3.2. KINGSTON FERRY TERMINAL

The multimodal connections available at and in proximity to the Kingston Ferry Terminal are illustrated in Figure 3-2.

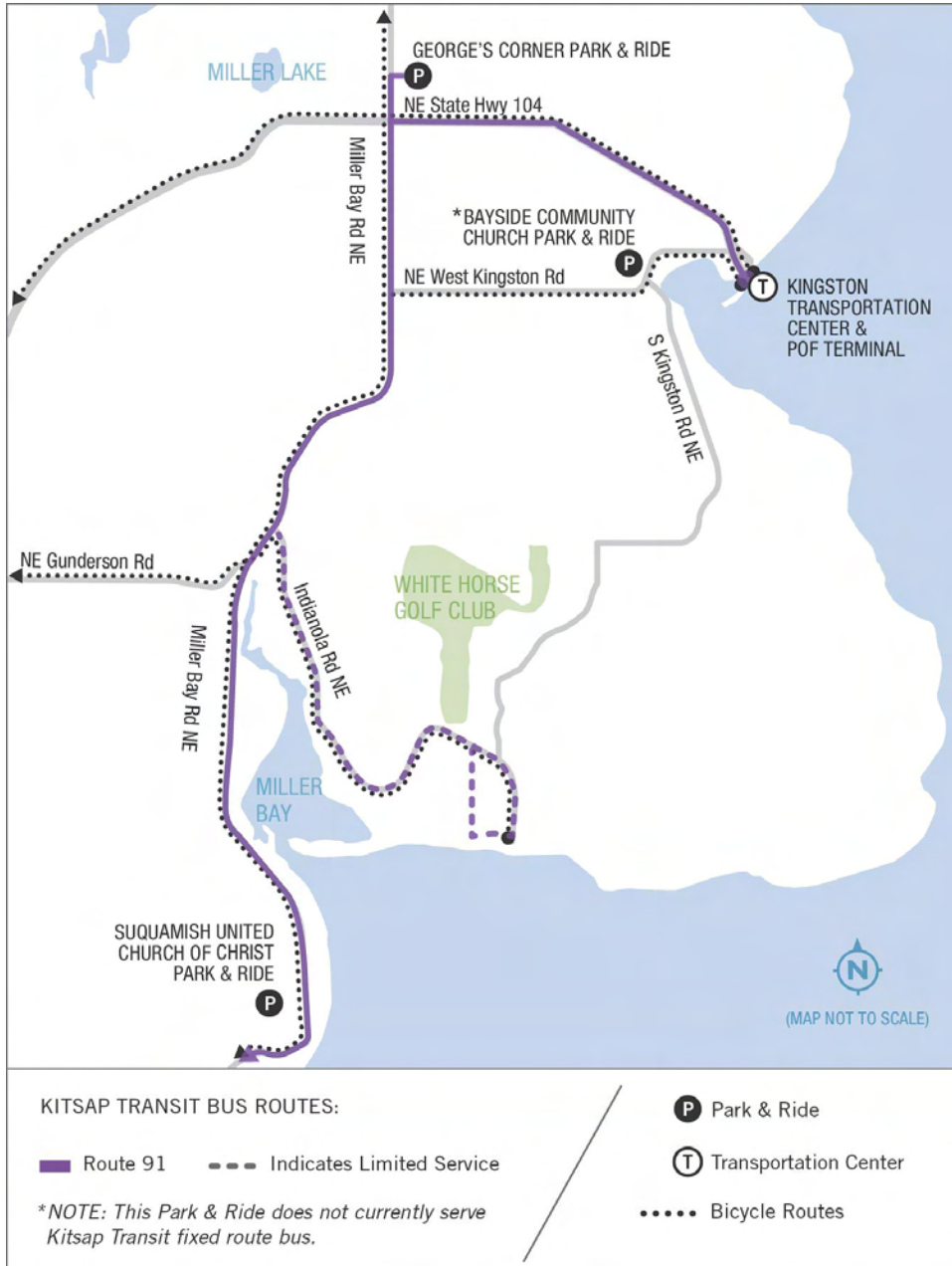


Figure 3-2: Kingston Ferry Terminal Multimodal Connections



Transit

The Kingston Ferry Terminal is served by Kitsap Transit Routes 91 and 92 during the weekdays. Upon arriving at the Kingston Ferry Terminal, transit passengers are dropped off at the bus stop located at the corner of Washington Boulevard and East First Street, approximately 0.1 miles from the ferry passenger loading dock.

Passenger Pick-Up and Drop-Off

Passenger pick-up and drop-off for persons without disabilities can be made at the Kitsap Transit bus stop located on Washington Boulevard and East First Street, where there is a parking area there to pull into.

Public Parking and Park-and-Rides

The Port of Kingston provides daily, weekly, and monthly commuter parking for ferry passengers and the visiting public in a paid parking lot adjacent to the terminal. Currently, there is a waiting list for all monthly commuter parking spaces. There is also a privately operated parking lot located at Northeast First Street and Ohio Street that provides daily, monthly, and designated carpool parking for ferry passengers and commuters.

Additional park-and-rides include George's Corner Park-and-Ride (225 spaces), located approximately 2.7 miles from the Kingston Ferry Terminal, and the Suquamish United Christ of Church Park-and-Ride (65 spaces), located approximately 7.5 miles away. Both locations are lighted and have bicycle racks/lockers and a covered waiting area. There are no designated carpool spaces at either facility. Each lot is served by Kitsap Transit with service to the ferry terminal. Transit connections to George's Corner are provided in the early morning and afternoon/evening with no service provided during the late morning and mid-day hours. The church park-and-ride is served by hourly transit connections to the ferry terminal.

Non-Motorized Connections

Pedestrian facilities are provided upon exiting the POF vessel to Mike Wallace Park, along both sides of SR 104 to Iowa Avenue (serving the adjacent businesses and retail shops, with sidewalks along the south side of SR 104 along the border of Kola Kole Park). Sidewalks are also provided along Central Avenue Northeast continuing west on Northeast West Kingston Road, providing pedestrian access to both Village Green Park and Kola Kole Park. In general, designated pedestrian facilities are not provided to the east of SR 104 and marked pedestrian crossings are provided at intersections along WA 104-E and Northeast First Street from the ferry terminal to Iowa Avenue Northeast. There is bicycle access to the Kingston Ferry Terminal via SR 104 and Northeast First Street via paved shoulders or shared-lanes. Bicyclists may also exit out Central Avenue Northeast and head west on Northeast West Kingston Road (Mosquito Fleet Trail), which has a dedicated bicycle lane.

Overall Assessment and Coordination Requirements

Currently there is no weekend transit service connecting to the Kingston Ferry Terminal. Route 91 service is limited to morning and afternoon peak periods. Route 92 provides supplemental service from Poulsbo to Kingston throughout the day with 60-minute headways. Kitsap Transit will need to coordinate existing transit service for the WSF passengers along with service for the POF

passengers to ensure that adequate transit service is provided for POF passengers from the Poulsbo Transfer Center and the park-and-ride facilities to the Kingston Ferry Terminal. More frequent bus service, especially outside the morning and afternoon peak periods, to the Kingston Ferry Terminal may be needed to serve mid-day or weekend POF passengers, should that service be offered in the future.

There is a lack of pedestrian facilities on the north side of SR 104 connecting to the retail and businesses off of the north side of SR 104. The current wait list for commuter parking at the Port of Kingston Parking lot indicates that additional commuter parking may be needed for POF passengers or more frequent/additional bus service from nearby park-and-ride facilities. Fixed-route service to Bayside Community Church Park-and-Ride (not currently served by fixed-route bus service) should also be explored as this is the closest park-and-ride facility to the ferry terminal (less than 1 mile).

3.3. SOUTHWORTH FERRY TERMINAL

The multimodal connections available at and in proximity to the Southworth Ferry Terminal are illustrated in Figure 3-3.

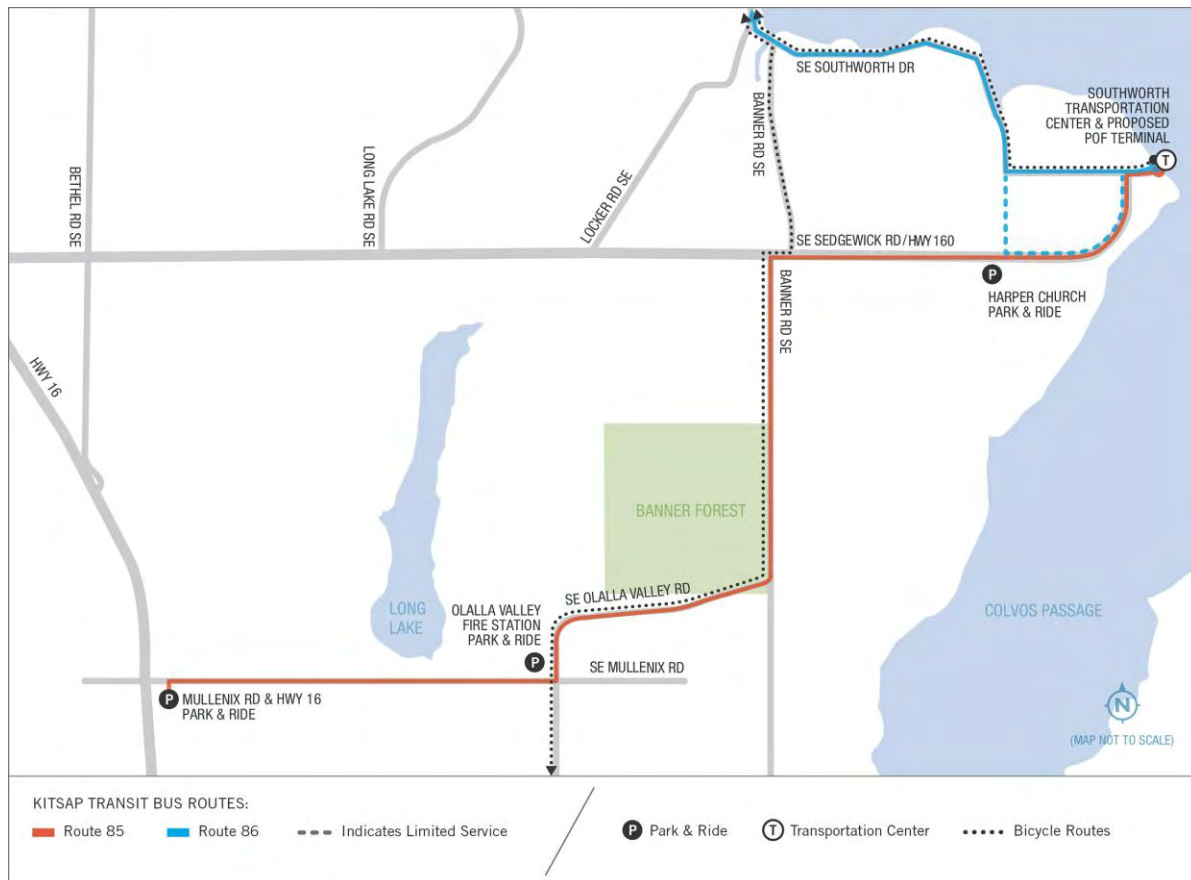


Figure 3-3: Southworth Ferry Terminal Multimodal Connections



Transit

The Southworth Ferry Terminal is served by Kitsap Transit Routes 85 and 86, both of which only provide weekday service and are intended to serve existing WSF ferry commuters and passengers. Route 85 originates at the Mullenix Park-and-Ride and Route 86 originates at the Port Orchard Ferry.

Passenger Pick-Up and Drop Off

Passengers can be picked up or dropped off along Southeast Southworth Ferry Drive prior to the toll booths and take the sidewalk to or from the ferry terminal. Cars looking to pick up or drop off passengers may also pull into the parking lot adjacent to the terminal and drive up to the northeast corner of the parking lot next to the sidewalk to the ferry terminal. For passengers needing assistance, WSF allows vehicles needing to pick-up and drop-off persons with disabilities to drive up to the loading dock prior to boarding.

Public Parking and Park-and-Rides

Paid parking is available in an adjacent parking lot to the Southworth Ferry Terminal. There are a total of 340 parking spaces available, including 43 designated carpool spaces, providing daily and monthly parking options for ferry passengers.

The Harper Church Park-and-Ride is located approximately 1.3 miles from the Southworth Ferry Terminal and offers 642 total parking spaces. The Olalla Valley Fire Station Park-and-Ride is located approximately 6.2 miles from the Southworth Ferry Terminal and offers 47 total parking spaces. The Mullenix & Highway 16 Park-and-Ride is located approximately 10 miles from the Southworth Ferry Terminal and offers 92 total parking spaces. The Harper Church and Mullenix & Highway 16 park-and-rides are served by Route 85, while Olalla Valley Fire Station is served by both Routes 85 and 86. As these routes are designed to serve WSF commuters, there are periods of no service during the late morning and mid-day hours to either park-and ride facility. All three facilities are lighted and there are no daytime restrictions for parking at these facilities. There is shelter at the Harper Church and Mullenix & Highway 16 facilities.

Non-Motorized Connections

The Southworth Ferry Terminal is located at the terminus of Southeast Southworth Ferry Drive and the surrounding land uses are primarily residential. There is a sidewalk along Southeast Southworth Ferry Drive upon leaving the terminal facility that terminates at the intersection of Southeast Southworth Ferry Drive and Southeast Sedgwick Road. There are no other connecting sidewalks. For bicyclists and pedestrians looking to travel south, there are paved shoulders along Southeast Sedgwick Drive, starting where the sidewalk terminates. There are also paved shoulders continuing along Southeast Sedgwick Drive at the sidewalk terminus.

Overall Assessment and Coordination Requirements

The area surrounding the Southworth Ferry Terminal is primarily residential. Ferry passengers will likely either be dropped off or picked up at, drive to and park, or take Kitsap Transit to the Southworth Ferry Terminal. Currently there is no weekend transit service connecting to the Southworth Ferry Terminal and weekday service is limited, intending to serve WSF commuters during limited morning and afternoon peak periods. Kitsap Transit will need to coordinate existing

transit service for the WSF passengers along with the transit needs of the POF passengers to ensure that adequate transit service is provided for POF passengers from the park-and-ride facilities and from the Port Orchard Ferry Dock to the Southworth Ferry Terminal. In addition, bus service outside of the morning and afternoon peak periods to the Southworth Ferry Terminal may be needed to serve mid-day POF passengers. Weekend service will also likely be a consideration as there is currently no weekend bus service to the Southworth Ferry Terminal.

3.4. PIER 50 IN SEATTLE

The multimodal connections available at and in proximity to Pier 50 at Colman Dock/Seattle Ferry Terminal are extensive and provide adequate opportunity for connecting commuters.

Transit

The Seattle Ferry Terminal is directly served by King County Metro's RapidRide C Line. Numerous other transit connections are also available within walking distance from the ferry terminal. It is 0.2 miles to First Avenue and Marion Street where connections to Metro Routes 16, 66, and 99 can be made. It is less than 0.3 miles to Third Avenue, which serves as a major bus mall for King County Metro where many local bus routes can be accessed. The Seattle Ferry Terminal is also within 0.5 miles from the downtown Transit Tunnel (University and Pioneer Square stations), which provides connections to Sound Transit's Link Light Rail, 13 Metro routes, and Sound Transit Regional Express Route 550. The Seattle Ferry Terminal is approximately 0.6 miles from the King Street Station, which offers connections to Amtrak and Sound Transit's north and south Sounder (commuter rail) service.

Passenger Pick-Up and Drop Off

During current construction to replace the Alaskan Way Viaduct and Elliott Bay Seawall, it is best to pick up or drop off passengers at Madison Street, directly in front of the terminal to avoid being redirected by construction. Upon completion of the Elliott Bay Seawall reconstruction project, there will be a formal passenger drop off location at the Madison Street intersection. Taxi cabs are located in the front of the ferry terminal and across the street and are readily available.

Public Parking and Park-and-Rides

There is no parking at the Seattle Ferry Terminal, but there are numerous paid parking lots in close proximity. The hourly rates for these lots vary, with several low rate lots available in the vicinity of the terminal. For commuters, there is daily and monthly parking available at the Commuter Center garage and two surface lots next to the garage. Because of its location downtown, there are no park-and-ride facilities in the immediate vicinity of the terminal. Passengers can park in various park-and-ride locations in north and south Seattle, as well as throughout King County and use King County Metro or Sound Transit bus or rail service to downtown Seattle in proximity of the ferry terminal.



Non-Motorized Connections

Construction to replace the Alaskan Way Viaduct and the Elliott Bay Seawall has changed access along Seattle's waterfront, including access to and from the Seattle Ferry Terminal. Pedestrians and bicyclists can access the Seattle Ferry Terminal via the Elliot Bay Trail. There is a pedestrian overpass at Marion Street for safe pedestrian access to the ferry terminal, which will remain open during Colman Dock operating hours. Bicycles can also access the ferry terminal via Yesler Way. All roads into downtown Seattle in the immediate vicinity of the ferry terminal (except otherwise under construction) have pedestrian facilities. Bicyclists use shared-use lanes unless dedicated bicycle facilities are provided.

Overall Assessment and Coordination Requirements

The Seattle Ferry Terminal currently serves both POF service for King County Water Taxi and vehicular ferry service for WSF. Located along Seattle's waterfront, there are more than adequate existing transit, bicycle, and pedestrian connections available to serve potential Kitsap Transit POF passengers traveling into or leaving downtown Seattle. While the current construction projects to replace the Alaskan Way Viaduct and the Elliott Bay Seawall have disrupted travel around and access into the Seattle Ferry Terminal, temporary changes have been made to ensure vehicular, transit, bicycle, and pedestrian access is maintained. Upon completion, it is anticipated that pre-construction levels of connectivity will be maintained or enhanced to serve non-motorized ferry passengers.

4. Programming Requirements

Program requirements for a future POF facility include amenities that make the site accessible, functional, and enjoyable for riders. These amenities may include both in-water and upland improvements, working to enhance the rider experience and service functions, while working within the constraints of the sites.

4.1. TERMINAL FACILITY NEEDS

Each of the sites shares some common programming needs:

- Float to accommodate berthing of two, up to 150 passenger capacity vessels with side loading, with a minimum water depth of -10.0 feet Mean Low Low Water (MLLW).
- Gangway and float to accommodate passenger loading and unloading of a boat capacity of up to 150 people with a minimum width of 8 feet.
- Sufficient area for placement of up to two, approximately 2-foot by 2-foot ticket vending machines (TVMs). These TVMs are solar-powered and equipped with cellular communications; therefore hard-wired power and communications are not required.

- A location with communications and power will be needed to store the portable fare transaction processors (handheld ORCA readers). This may be either at a terminal or a tie-up facility.
- A location will also be required to retrieve and store cash from the portable fare boxes. This would require a vault at one of the terminals, located in the agent's office. This would likely be required regardless of whether a contracted service is utilized.
- Trash and recycling receptacles.
- Accessible walkways, approximately 12 feet wide to accommodate loading and unloading of passengers.
- Drop-off location for transit and personal vehicles within 200 yards of the head of the overwater trestle or gangway.
- Fresh water, potable water and shore power.
- Meet secure facility recommendations in the following sections, which include partitions or gates to security, lighting, security cameras and storage facilities for crew belongings.

For the three Kitsap County identified sites, each location is within close proximity to or alongside to WSF operations. It is anticipated that amenities provided at the WSF terminal, such as a covered terminal building, could serve POF passengers as well.

4.2. ADA IMPROVEMENTS

Americans with Disabilities Act (ADA) was signed into law in 1990 and revised in 2004. The current ADA does not address accessibility requirements for passenger marine vessels, although the need for such requirements is widely acknowledged by industry professionals. Therefore, draft accessibility regulations have been developed by the U.S. Access Board for newly built or altered passenger ferry vessels designed to carry 100 or more passengers. The draft proposed guidelines for passenger vessels has undergone a public comment period ending on January 24, 2014. Adoption of the guidelines as regulatory requirements is pending final rule preparation and publishing by the U.S. Access Board. A schedule for final publication has not been released.

The proposed guidelines contain provisions that address access to various types of spaces and elements so that vessels are fully accessible to and usable by passengers with disabilities. These include boarding systems, passenger decks, toilet and bathing facilities, seating areas, guest rooms, alarms, signs, and drinking fountains. Most requirements apply where a covered element or space is provided on a vessel.

Technical provisions for boarding systems are included in the guidelines. These provisions address ramps, gangways, boarding lifts, elevators, and other components of accessible boarding which would include potential terminal facility upgrade or design. They take into account the dynamic interface between landside facilities and vessels and various challenges posed by marine environments, such as latitudes with extreme tide cycles. For example, slope specifications for gangways apply except where the length would exceed 120 feet. Some



boarding systems are deployed from vessels while others are operated from shoreside facilities. Since the responsibility for them, which may rest with facility or vessel operators according to location, often involves operational considerations beyond the scope of the U.S. Access Board's rulemaking authority, the guidelines do not specify where accessible boarding is required. U.S. Department of Transportation (USDOT) and U.S. Department of Justice (USDOJ), which are responsible for issuing standards based on these guidelines, have this regulatory authority and may address provision of accessible boarding in their subsequent rulemaking.

ADA Requirements for Ferry Terminals

Ferry terminal facilities are essentially no different in terms of ADA compliance requirements than are other transportation facilities like airports and rail stations. Public access to the facility's service elements must be provided in an accessible fashion and in full compliance with the ADA provisions as administered by USDOT (49 CFR Parts 27 and 37).

Key aspects for ADA compliance relative to the passenger ferry terminal include the condition of walkway surfaces that provide the accessible pathways and connections to each of the elements and amenities provided for passengers. Attention to elements affecting slope (running and cross slopes), width, height, elimination of protruding objects, changes in elevation on the walking surface, and surfaces that are firm, stable, and slip-resistant must be provided to achieve ADA compliance. The table found in Appendix A provides an overview summary of the ADA requirements for the passenger ferry terminal and includes regulatory citations for reference.

4.3. SECURITY

At any transportation facility there are security risks present, such as acts of vandalism, theft, or terrorism. These risks have different likelihoods of occurrence and different consequences should they occur. Risks cannot typically be completely eliminated, rather the goal in implementing security measures is to reduce risk to an acceptable level and mitigate the consequences once an event has occurred.

The goal of an integrated facility security plan is to establish appropriate security measures that effectively addresses existing risks, but does so in a manner that allows the efficient movement of passengers.

Security measures can be subdivided into those that, while not mandated by a regulatory agency, are appropriate for business purposes, such as the safeguarding of collected revenues from theft, and those measures that are regulatory in nature, such as the protection against acts of terrorism. For the purposes of evaluating the applicable security practices and requirements in this business plan, the topic of facility security will be addressed into the two broad categories of:

- Best business security practices
- Regulatory security requirements

While there is routinely and appropriately some overlap between regulated and non-regulated security practices, for the purposes of this plan, these two categories will be addressed separately.

Best Business Security Practices

Regardless of any regulatory mandates, there is a level of security that any operator of a POF service is going to want to provide, as it just makes good business sense. In this case, the goal of appropriate facility security measures is aimed at reducing the risk of occurrence of an unwanted event, provide some level of operating and/or legal protection, assist law enforcement during or after an event takes place, or be attentive to applicable organizational policies.

The following programming elements of a facility security plan, along with a brief description of each, should be considered for implementation:

- Ability to lock/isolate the facility when not in operation – includes measures to protect against acts of vandalism on the facility, to help keep the facility clean, keep unwanted vagrants from camping at the facility, and eliminate risk of unmonitored persons attempting to get in close proximity to the water's edge. The need to lock the facility is particularly important if the vessel is to tie-up unattended at the facility during any portion of the day, making the need to prevent undesired vessel access
- Surveillance system – includes a means to provide some level of deterrence for a wide variety of potential events, which can also provide assistance with law enforcement investigation (particularly for occurrences of theft, vandalism, or abduction), can prove useful to monitor operations, and supplements personnel monitoring.
- Law enforcement coordination – because the POFy operations would be conducted in multiple municipalities, with different law enforcement jurisdictions, there is a need to understand capabilities and agree upon expectation of applicable law enforcement agencies, including both shore side and waterborne capabilities.
- Facility lighting – a means to provide both a safety and security benefit, with appropriate lighting serving to keep areas fully visible during winter days when commutes are typically performed in the dark.
- Protection of crew personal affects – with crewmembers typically having personal affects and gear, providing a means to protect their valuables may be appropriate. Depending on the crewing levels and vessel arrangements, this function could be accomplished onboard the ferry. Typically small passenger ferries have very limited capabilities in this regard, so some form of shore-based facilities are warranted.
- Capability to lock/secure revenue collections – measures to protect against both employee and external theft. These measures might include elements such as lockable cash boxes, safes and appropriate operating procedures with built-in accountability protections such as dual handling, signatures, and expedient and safeguarded deposits.
- Ability to protect against fare evasion – including both patron and employee initiated examples of fare evasion.
- Ability to isolate the POF operations from adjacent regulated ferry terminal – for ease and separation of operations and liability.



Regulatory Maritime Security (MARSEC) Requirements

The primary regulatory requirements on passenger ferry facilities are promulgated and enforced by the U.S. Coast Guard (USCG). The requirements applicable to the operator of any vessel or facility of any kind located on or adjacent to the waters subject to the jurisdiction of the U.S. can be found in Title 33, Code of Federal Regulations (CFR) Parts 101 through 107.

The provisions of 33 CFR Parts 101 and 103 are general in nature and would apply to the Kitsap Transit POF service. These parts contain general security provisions such as: basic definitions, maritime security levels, communications, reporting, compliance and enforcement, area maritime security assessments, committee and organizational hierarchy, and personnel expectations including the Transportation Workers Identification Credential (TWIC). While not particularly onerous or extensive, the basic provisions will need to be understood and followed.

The provisions of 33 CFR Part 105 contain the requirements for waterfront facilities and are applicable to any “facility that receives vessels certificated to carry more than 150 passengers.” While Kitsap Transit may only operate vessels certificated to carry 150 or fewer passengers, the regulatory applicability criteria for facilities is whether any of the higher capacity vessels will call at that facility. The key provisions of Part 105 include:

- Performing a facility security assessment.
- Developing and maintaining a facility security plan; could employ the Passenger Vessel Association (PVA) alternative security plan (ASP).
- Designating a facility security officer.
- Providing security training to all personnel.
- Implementing security measures to address access control.
- Implementing security measures to address monitoring.
- Designating and protection of restricted, secure and public access areas.
- Implementing provisions for delivery of stores, supplies and fueling.
- Designating added measures at higher security threat levels, including potential passenger screening.

Related Terminal Security Considerations

Kitsap Transit is considering POF operations out of four facilities – Seattle, Bremerton, Kingston, and Southworth. These facilities currently fit into the two different categories of regulated and non-regulated facilities:

- The Seattle dock is considered a regulated facility, subject to the provisions of Part 105, because King County currently operates vessels certificated to carry more than 150 passengers at this facility.
- The proposed dock at Southworth and the existing docks at Bremerton and Kingston would currently be considered non-regulated facilities. However, they will be, or are, located directly adjacent to or, in the case of Bremerton, integrated within the regulated facilities operated by WSF.

The Seattle Ferry Terminal is operated under a USCG-approved security plan. The ferries operated by Kitsap Transit that call on this facility will have to comply with certain provisions of this plan. The key considerations related to the regulated facility at the Seattle Ferry Terminal can be summarized as follows:

- Limitations on access to certain restricted areas of the facility, or possession of TWIC cards by crew members if they need unescorted access to restricted areas on the facility.
- Patron and crew compliance with existing security protocols established by King County security plan such as:
 - Access control
 - Added measures at raised MARSEC security levels
 - Monitoring and reporting
- While there are no added security measures mandated for vessels making call at the regulated facility, coordination with King County would be appropriate.

The non-regulated facilities at Southworth, Bremerton, and Kingston would not have to comply with the provisions of Part 105. However, because of the proximity to a regulated facility, there is a potential impact to the nature and number of security measures that would be appropriate. The following comments apply:

- While appreciating the desire to have free open access between the two facilities, in order to maintain the status of non-regulated facility, a clear distinction and separation between the POF facility and the regulated WSF facility would need to be established and maintained.
- It would be appropriate to perform a facility security assessment and share the pertinent results with WSF to be sure that any conflicts with the waterfront neighbors are resolved and areas of mutual interest or concern are addressed. This might include the establishment of interagency protocols that document areas agreed upon as being of mutual interest or benefit.

5. Proposed Improvements

Improvements are needed at varying levels at the three proposed terminal locations. This is due to the presence of existing infrastructure in place from either past and/or current POF service. The following section identifies the locations identified, the connections of that location to existing modes of transportation, and improvements needed at each location.

5.1. BREMERTON

The proposed route out of Bremerton would utilize existing POF infrastructure located northeast of the existing WSF terminal and south of the existing marina. The route is required to use a specialized vessel, the Rich Passage 1, which minimizes wake impacts on the shoreline. The existing terminal infrastructure currently serves as the POF terminal for the Kitsap Transit Foot Ferry, which travels from Port Orchard and Annapolis to Bremerton.



 POF FACILITIES

Figure 5-1: Bremerton Ferry Terminal POF Facilities

Existing Infrastructure

Existing POF infrastructure in place in Bremerton is currently operated by Kitsap Transit. The existing infrastructure includes two floats, the A float (named for its shape) and the B float, which connects the A float to the shoreline. The B float is a two-story float currently serving as the POF terminal for the Kitsap Transit Foot Ferry. Existing terminal improvements on the B float include finished, covered walkways with signage and ADA accessible walkways. However, the existing terminal does not have fare collection infrastructure.

Renovations on the floats were completed in Fall 2014. With the completion of this work, the A float is able to accommodate POF service, with berthing for three RP1 type vessels and ADA passenger access from the terminal to the vessel. The improvements include:

- Improving passenger transitions to conform to ADA.
- Providing new passenger holding and loading platforms (no covers).
- Providing a sewage pump out station near Berth 2 (which can also serve Berth 3).
- Providing shore power, diesel fuel and fresh water at Berths 2 and 3.
- Providing a new Above Ground Fuel Tank (in the garage on the lower level) in an enclosure.
- Installing improved lighting.
- Miscellaneous outfitting, such as reconfiguring the fender systems.



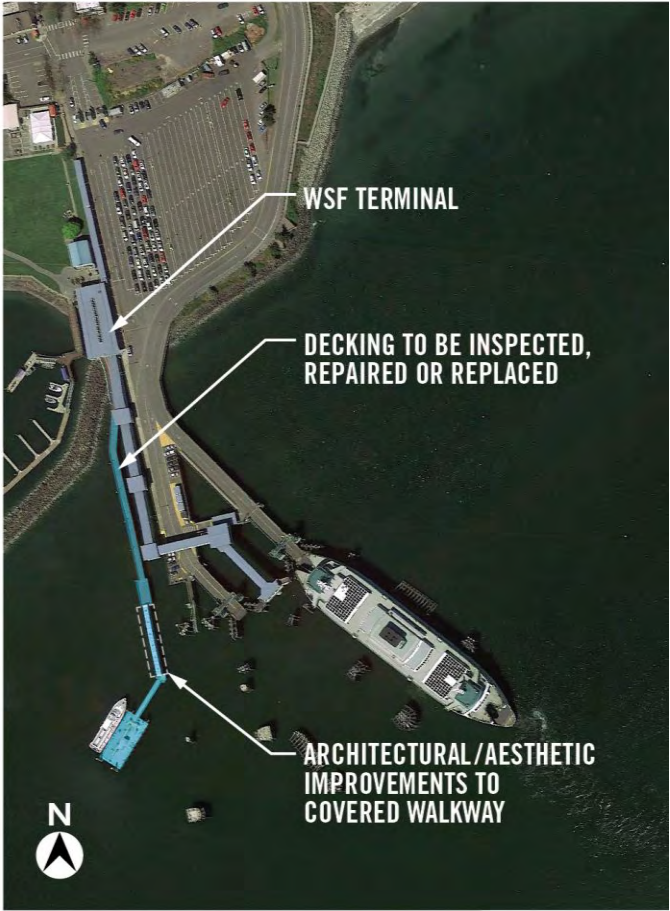
Figure 5-2: Existing Bremerton POF Facilities (Float B Covered Walkway pictured left and Float A under construction pictured right)

Proposed Improvements

No additional infrastructure improvements are recommended for this site in order to begin POF operations. Wayfinding features, such as branding and signage may be proposed; however, this work would be minimal in nature. Additionally, two ticket vending machines are proposed for fare collection.

5.2. KINGSTON

The proposed route out of Kingston would utilize existing infrastructure in place at the Port of Kingston. POF service has been operated out of this location in the past.



 POE FACILITIES

Figure 5-3: Kingston Ferry Terminal POE Facilities

Existing Infrastructure

Existing POE infrastructure in Kingston includes an existing, approximately 40-foot by 90-foot float, gangway, covered walkway and an elevated wooden walkway. The existing float and gangway appear to be in a condition suitable for POE operations. The covered passenger walkway and waiting area currently consists of a pile supporting shipping container with windows. While this certainly meets the functional needs at the terminal, its appearance and aesthetic could be improved. There is currently no fare collection infrastructure in place for the POE facility.

Proposed Improvements

Proposed improvements include potential repair or replacement of the existing wooden elevated walkway, as well as architectural/aesthetic improvements to the existing covered walkway. All existing decking would need to be inspected, the results of which would determine if repairs or replacement are necessary. The covered walkway could be treated with architectural enhancements to make the space more inviting and coordinate with other Kitsap Transit facilities.

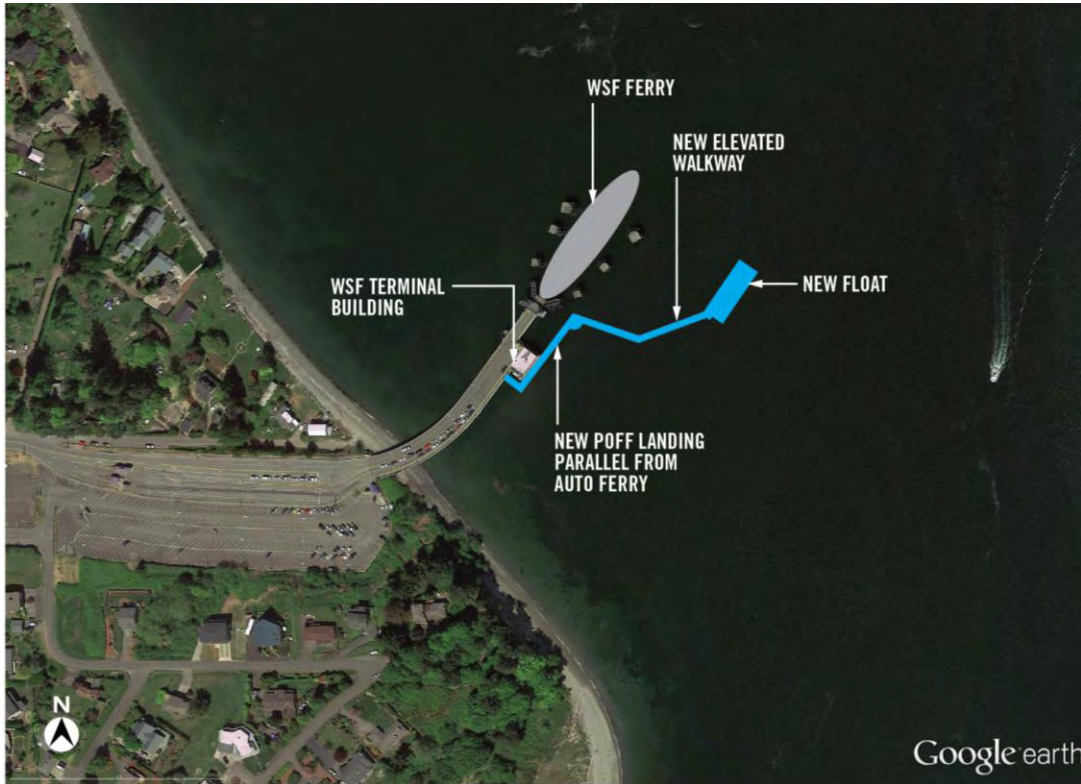
Additionally, in the long-term, fuel, potable water, and sewage services should be provided at the Kingston terminal. A new fuel line should be run from the existing Port of Kingston fuel pier to a fueling station on the boarding float. A spill containment well will be needed at the fuel connection as well as a spill response kit located on the float. Potable water is available at the WSF terminal building and an insulated potable water line should be run out to the float as well. For sewage pump-out, a sewage tank should be installed in the existing steel float along with a pump that could both draw sewage from the vessel and discharge sewage to the City of Kingston's sewage system.



Figure 5-4: Existing Kingston POF Facilities (Wooden elevated walkway pictured left and covered walkway shipping container pictured right).

5.3. SOUTHWORTH

Future POF facilities at Southworth would be located south of the existing WSF terminal. New improvements would be required as no existing infrastructure is in place to support POF operations.



POF FACILITIES

Figure 5-5: Existing Pedestrian Pathway and terminal building on WSF trestle at Southworth

Existing Infrastructure

The Southworth site currently has no dedicated POF infrastructure in place. Some existing infrastructure may be utilized to support future POF operations, which include the existing WSF terminal building located on the southern side of the trestle, as well as the separated pedestrian pathway. The pathway currently routes WSF walk-on passengers from parking or transit to the terminal building. The existing terminal building provides a covered waiting area for passengers, complete with ADA restroom facilities. Since WSF does not charge a fare on headways to Seattle, there is no fare collection infrastructure in place.



Figure 5-6: Existing Pedestrian Pathway and terminal building on WSF trestle at Southworth

Proposed Improvements

Past planning and design studies have been completed by WSF for the Southworth terminal, which included expansion of the WSF facility and creation of an integrated POF facility. Proposed POF improvements would attempt to follow WSF's past plans as applicable. This includes the location of a POF float on the south side of the terminal, leaving the northern side open for future WSF expansion. WSF captains have expressed preference that a future POF float be located parallel to the existing WSF vessel berthing. Additionally, the presence of environmentally sensitive areas, including near-shore habitat and eel grass beds, push the POF facility into deeper water, thereby minimizing environmental impacts. These factors would bring a POF facility approximately in parallel to the existing WSF berth (refer to Figure 5-5).

Proposed improvements would include an elevated walkway, a gangway, and an approximately 100-foot-long by 40-foot-wide float to accommodate the berthing of two 150-passenger vessels. The existing WSF terminal building could be utilized for waiting and weather protection as needed. Additionally, one ticket vending machine is proposed. The improvements required at this location are extensive and would require much interagency coordination and environmental permitting as further discussed below.

5.4. SEATTLE, PIER 50

Improvements at Pier 50 are currently in the design phase; they do, however, include plans to accommodate additional routes from Kitsap County. The design, as currently proposed, would serve four routes with a new fixed pier built adjacent to the WSF trestle expansion.



5.5. ENVIRONMENTAL CONSIDERATIONS

With the proximity of POF projects to the marine environment and the potential federal funding sources required for terminal improvements, a variety of environmental regulations would likely be triggered. Projects receiving federal funding through the Federal Transit Administration (FTA) or Federal Highway Administration (FHWA) for capital improvements require National Environmental Policy Act (NEPA) consultation and other federal permits due to the location of improvements in or over the water. Additionally, Washington State and local jurisdictions have separate layers of environmental regulations for projects in or adjacent to the marine shoreline. An overview of permitting required for each project site is provided below:

- **Southworth:** Terminal improvements include new in-water facilities in proximity to sensitive habitats, including eelgrass beds. It is anticipated these improvements would require an Environmental Assessment (EA) or Environmental Impact Statement (EIS) through the NEPA process to determine the environmental impacts. Additional federal approvals anticipated include USCG and the Army Corps of Engineers (USACE). State approvals would include the Washington State Department of Ecology (Ecology), Washington Department of Fish and Wildlife (WDFW), and Washington State Department of Natural Resources (WDNR). The local permit requirements would be administered by Kitsap County.
- **Kingston:** Terminal improvements are minor and no in-water work is needed; therefore, a Categorical Exclusion (CE) through the NEPA process would be anticipated for the project. The USACE may require consultation, as well as Ecology and WDFW. Kitsap County would administer the local permit requirements.
- **Bremerton:** Terminal improvements proposed are minor and no in-water work is needed; therefore, a CE through the NEPA process would be anticipated for the project. Depending on the placement of signage improvements proposed in Bremerton, the USACE may require consultation, as well as Ecology and WDFW. The City of Bremerton would administer the local permit requirements.

Appendix B illustrates the relationship between the federal, state, and local permits, design, and construction. Southworth would require an extensive environmental process that affects the design schedule after 30% to hold for permit comments and restart once the environmental process is nearly complete.

Any future improvements that have not been identified in this report would require additional permitting.

Federal Permit Requirements

NEPA

The terminal improvements would likely be completed with the assistance of federal grant funding (FTA or FHWA); therefore, NEPA review is anticipated. The purpose of NEPA is to determine if a federal action may have a significant effect on the environment and provide alternatives that may have less environmental impact. Cumulative environmental effects analyzed through the NEPA process include ecology, water resources, geology, land use, traffic, public health and safety,

socioeconomic issues, air quality, noise, public services, et cetera. Early coordination with the lead agency (FTA or FHWA) when the design is in the initial phase is recommended to determine the appropriate application process and other agency coordination required for NEPA.

There are three categories of federal agency review to determine if there are significant environmental impacts including a CE, an EA, or an EIS. Many minor project improvements qualify for a CE and do not require the preparation of an EA or EIS report; however, the CE still requires federal agency coordination with the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) for consistency with the Endangered Species Act. A CE is a simple application process that does not require a public comment period.

Early coordination with the lead agency will direct the project proponent to develop an EA or an EIS. An EA is required when the federal agency is uncertain if there will be an environmental impact that would require an EIS and consists of a concise report that demonstrates the project will not have a significant impact and describes alternatives. If there is a significant impact, the project proponent must prepare an EIS. A 30-day public review period is required before the lead agency issues a Finding of No Significant Impact (FONSI).

An EIS is required when the federal agency has determined a project will have significant environmental impacts. The EIS report is an extensive analysis of the cumulative effects of the project on the environment and analyzes alternatives. Once the EIS report is prepared, a notice of intent and scoping period is initiated. The scoping process opens the EIS to agency, public, and stakeholder review. Once the scoping period is complete, the Draft EIS is published and a 45-day public comment period is required before publishing the Final EIS. The Record of Decision can be issued after a 30-day waiting period after the Final EIS is published.

Other Federal Approvals

The USACE regulates projects within or over navigable waters of the U.S. USACE reviews projects that require in-water or over water work for consistency with Section 10 of the Rivers and Harbors Act. If a project only includes over-water improvements and would not require formal approval, USACE will make a jurisdictional determination that a permit is not required. This application process begins after initial design work is completed.

Additionally, the USCG requires review of projects that include placement of materials in the water that could impact navigation. Coordination with the USCG should occur after initial design is completed.

State Permit Requirements

Ecology and WDFW oversee projects that require in-water work. Ecology administers regulations that focus on water quality impacts and compliance with Section 404 of the Clean Water Act. Additionally, projects within coastal counties within Washington State require a Coastal Zone Management Consistency (CZM) determination. WDFW oversees the Hydraulic Project Approval (HPA) required for projects in or over water. These processes should be initiated after the initial design is completed.



Additionally, WDNR owns the tidelands; therefore, any encroachment into the tidelands requires a lease agreement with WDNR. This process should be initiated with other state approvals after initial design is completed.

Local Permit Requirements

Local jurisdictions administer specific shoreline regulations and building code requirements. Shorelines of the state are regulated under the Washington State Shoreline Management Act and are jointly overseen by the local jurisdiction and Ecology. Additionally, the State Environmental Policy Act (SEPA) is administered by the local jurisdictions with oversight from Ecology and is required for projects located over lands covered by water.

Projects located within the shoreline jurisdiction (in-water or within 200 feet of the ordinary high water mark of the shoreline) are required to obtain a Shoreline Substantial Development Permit (SSDP) unless the project is specifically exempted in the regulations. The Southworth project would not qualify for a Shoreline Exemption based on the criteria for shoreline exemptions within the Washington Administrative Code and would require an SSDP. An SSDP includes coordination with other public agencies, Tribal representatives, and the public. A public hearing and approval from Ecology is required once the agency review, Tribal review, and public comment period is complete. The SSDP application should begin after the initial design phase is complete (approximately 30%) and must be approved before issuance of a building permit.

The Kingston and Bremerton projects include minor maintenance repair projects that may qualify for a Shoreline Exemption according to the shoreline exemption criteria in the Washington Administrative Code. The review process for a Shoreline Exemption only requires review from the local agency and is significantly shorter than an SSDP.

SEPA is a Washington State environmental review process in addition to NEPA that reviews projects for cumulative environmental impacts. Project that include in-water work typically require a SEPA determination that is completed in parallel with the SSDP process.

The International Building Code is administered by local jurisdictions and projects that include new or revisions to structures may require a building permit through the local jurisdiction. Building permit applications should be initiated when the design is almost complete (90%).

6. Tie-up and Maintenance Facility

The majority of passengers utilizing the POF service would be commuters; therefore, it is likely that there will be a concentrated series of trips in the morning with a gap during the middle of the day and another concentrated series of trips in the afternoon and evening. In general, both the morning and afternoon/evening trip groupings will cover 4 to 5 hours each. This type of arrangement presents both challenges and opportunities. The primary challenge involves the logistics of crewing the vessels with a split-shift. The primary opportunity is that daily maintenance and repair activities can be carried out during the 3 to 4 hours between the two split shifts.

6.1. TIE-UP FACILITY OPTIONS

Split Shift Break Considerations

Because the last full run of the morning commute will end in Seattle and the first full run of the afternoon commute will start in Seattle, keeping the Kitsap Transit ferries in Seattle between commute periods would be preferred. However, since crews will start their work day at the terminals in Kitsap County, the vessel crews, assumed to be working a split shift, would need to return to the starting terminal between commute periods. Therefore, either the ferries stay in Seattle during midday and the crews get home via other means or the ferries make empty or nearly empty runs back and forth to their home terminals between commute periods.

If the ferries were to stay in Seattle between commute periods, there would need to be moorage for at least one ferry on each route at Pier 50 or the Pier 48 King County Marine Division Maintenance Barge (KCMB) during this period of time. The time between shifts could be used for fueling, discharging sewage, taking on water, and other general “housekeeping” activities, performed by King County Marine Division staff under contract to Kitsap Transit. Under this scenario, a small, fast boat, similar to the SafeBoats used by the USCG, could be used for the crews to return to their home terminals between shifts if necessary; the Southworth and Bremerton crews could also return to their home terminals via WSF.

The existing facilities are intended to have space for six ferries but in practice there is only room for four, two at Pier 50 and two at the KCMB. Planned short term improvements to the KCMB will increase this to six, which will be sufficient for the three vessels in the King County fleet plus three vessels from Kitsap Transit. The terms of a moorage and maintenance agreement would need to be worked out.

Under the alternative scenario, each ferry would return to its home terminal after the morning commute period and remain idle there until the afternoon crew took it back to Seattle to start the evening commute. Fueling, sewage pump out, fresh water fill, and other routine service could be scheduled into the period between shifts but could require overtime.

Overnight Moorage and Pier-Side Services

Overnight moorage at each vessel’s home port terminal is recommended for the following logistic and economic reasons:

- The first commuter trip to Seattle each morning will depart from the home terminal.
- It is common practice for crews to be comprised of personnel who live close to the home terminal.
- Supplies and maintenance resources are usually stored/available at or near home terminals
- Usually destination terminals are for transient use, often by multiple vessels, and not generally available for long-term use, nor do they usually have pier-side utilities.



For overnight moorage at the home port terminals, a standard mooring line configuration would be used incorporating spring lines and breasting lines. Depending on crew size, the overnight mooring process may require an additional deck hand. If fuel, sewage pump out, and fresh water are not provided at the midday moorage location, it is recommended that overnight moorage slips be equipped with utilities for fuel, sewage pump out, fresh water, wash down, and supplies as well as shore power.

- The Kingston terminal currently has none of these services available, and improvements to upgrade the terminal to include these services would be costly and challenging to permit. However, sewage pump out, fresh water and fueling are available in the Kingston Marina during the day time.
- The new terminal at Southworth should be designed to include all of these pier-side utility services. An optional approach would be to tie-up the Southworth vessel at Bremerton, where pier-side utilities are available or have these services provided midday in Seattle. It should be noted that mooring overnight in Bremerton would add a 10 nm trip each way.
- The new upgrades to the A-Float in Bremerton include shore power, sewage pump out, fuel and fresh water at two berths.
- At the end of the evening shift the remaining minor maintenance activities on the boats and home terminals can be accomplished by the crews. Maintenance and fueling requirements are addressed in detail in section 6.
- Lighting and lockable gates are required at each home port terminal (available at Kingston and Bremerton) for overnight security. Provision for security cameras/DVRs (as installed in Bremerton) should be installed if considered necessary by the Port Manager.

6.2. BOAT MAINTENANCE AND REPAIR FACILITY OPTIONS

A-Float Redevelopment

The A-Float in Bremerton has been upgraded to include fueling, shore power, and fresh water at three of the berths (Berths 2, 3, and 4) and sewage pump out at Berth 3. The A-float facility and potentially the adjoining B-pontoon could be converted into an intermediate maintenance facility via installation of appropriate weight handling equipment (cranes) and a work shop, similar to those at the KCMB and new North Bay Operations and Maintenance Facility on Mare Island. The main challenge with this opportunity would be in the case of a need to transport removed major equipment for major overhaul to the shore. This could be accomplished through use of a work boat to transport generators, waterjets, and engines to a local boat ramp (such as the one at Evergreen Park) for transfer to a truck. Another option would be to use a barge and transport the major equipment to a pier close to the shop where overhaul would occur.

Kitsap Transit Mobile Workshop

There is the potential option for providing a mobile workshop with traveling engineer(s) for preventive, medium, and light duty maintenance of both the boats and the home port terminals. The mobile workshop could be contained in a large truck, allowing the professional to carry out oil/lube oil changes, welding, disassembly, minor in-place overhaul, minor fabrication, and in-place repair.

King County Marine Division Maintenance Barge

The following is an excerpt from Reference A:

The KCMB provides year-round support of the King County Water Taxis and is permanently moored at Pier 48 in the Downtown Seattle Waterfront Area. The facility is arranged to allow moorage for up to four vessels, two to tie up on both the North and South sides of the barge. Currently there are two vessels in service; the M/V Melissa Ann (Seattle, WA) and M/V Spirit of Kingston (Seattle, WA).

Water taxi maintenance is performed at the barge, which includes but is not limited to, fabrication, mechanical and electrical repairs, engine overhauls, and oil/filter, coolant, and gear oil changes. The barge is also capable of storing sewage, dirty oil, and oily waste water from the vessels. The workshop, located on the barge, is outfitted to allow major fabrication and repair. Additionally, offices are located on the barge to facilitate administrative tasks.

Since the KCMB is set up for fast ferry intermediate and preventative maintenance functions, it is a logical potential alternative to consider for accomplishing these functions. The terms of service could be worked out in an interagency agreement which should, in the long run, be beneficial to both King County and Kitsap Transit. Since Kitsap County would provide significant business to this operation, it might make sense to have Kitsap County employees working in this as a true “Joint Use” facility.

6.3. COMMERCIALY AVAILABLE VESSEL MAINTENANCE AND REPAIR RESOURCES

Several commercial shipbuilding and repair yards are located within central Puget Sound that are capable of providing vessel maintenance and repair services. The major such yards located nearest to the Bremerton and Seattle terminals are identified below.

- Hatton Marine, 4735 Shilshole Avenue Northwest, Seattle, WA 98107 – Full service shipyard including drydocking.
- Stabbert Maritime, 2629 Northwest 54th St #201, Seattle, WA 98107 – Full service shipyard including drydocking.
- Yachtfish Marine, Inc., 53 Southwest Bay St, Port Orchard, WA 98366 – Minor repairs.
- Foss Marine, 1151 Fairview Avenue North., Seattle, WA 98109 (Lake Union) and 225 East F St, Tacoma – Full service shipyard including drydocking.



- Vigor Industrial, 313 East F. Street, Tacoma, WA 98421 – Full service shipyard including drydocking.
- Pacific Fishermen's Shipyard, 5351 24th Avenue Northwest, Seattle, WA 98107 – Full service maintenance and repairs, haul out ways and lifts.
- Lake Union Drydock, 1515 Fairview Avenue East, Seattle, WA 98102 – Full service shipyard including drydocking.
- Northlake Shipyard, 1441 North Northlake Way, Seattle, WA 98103-8920 – Full service shipyard including drydocking.

6.4. FUELING, FRESH WATER AND SEWAGE PUMP-OUT FACILITIES

Maxum Petroleum operates a marine fueling facility at Pier 15 on Harbor Island in Seattle. Currently, both WSF and the King County Water Taxi use this facility. WSF also employs fueling by truck, especially for the North Sound routes and other locations such as Bremerton. WSF has multiple contracts for fueling via trucks, which often is cost effective.

The KCMB, which provides support for King County Water Taxis, located at Pier 48, Seattle, WA, has sewage pump-out holding tanks.

The upgraded A-Float in Bremerton offers fresh water, sewage pump-out, and fueling.

The Kingston Marina offers fresh water, sewage pump-out, and fuel service daily from 8:00 AM through 4:45 PM.

6.5. FACILITIES MAINTENANCE AND REPAIR RESOURCES

With the preponderance of large military bases in the vicinity of these routes, there is a large available pool of commercial firms that focus on facilities maintenance. Once the required scope of services is developed based on terminal resources in place, an acquisition plan should be developed followed by the appropriate source selection/bid process for procurement of required services.

7. Terminal Facility and Improvements Plan

Terminal facility and improvements plans by terminal would include the improvements mentioned in this chapter. The timeframe for completion of those improvements is outlined broadly in the graphic below. Due to the co-location of POF facilities adjacent to WSF facilities, substantial agency coordination will be needed in the carrying out of these plans.

Phased Approach

The phasing of terminal improvements will go hand in hand with the phasing approach for proposed operations. The Bremerton route is the most ripe for operation with existing construction underway that will make the POF terminal ready for operations using the RP1 vessel Kitsap Transit currently owns.

Kingston would be next in line due to the existing in-water infrastructure present at the site. Minimal upgrades would be needed to begin operations. Southworth would be the last phased operation due to the extensive infrastructure improvements needed. The design, permitting, and agency coordination will take several years to complete.

Agency Coordination

Improvements to the existing terminal facilities and installing new facilities for POF service from Southworth, Bremerton, and Kingston would require close collaboration between Kitsap Transit and various agencies. Coordination with agencies would include determining grant requirements, establishing agreements with the current property owners and operators, and consultation with agencies through the environmental permit process. See Figure 7-1 for a general timeline for the environmental review process, design, and construction.

Grant funding from the FTA and/or FHWA for each terminal location is anticipated. Consultation with these agencies should occur prior to developing design concepts. These agencies would continue to be a part of the project through design and construction to ensure grant fund requirements are being met.

Seattle

The existing King County Marine Division (KCMD) operates the King County Water Taxi with terminal facilities at Pier 50 adjacent to Colman Dock. The Pier 50 terminal is owned by WSF, and KCMD leases the facility for operations. The Pier 50 terminal would be used for Kitsap Transit POF arrivals to Seattle; therefore, each proposed route would require early and continuous coordination with KCMD. As WSF is the owner and operates vehicle ferries adjacent to Pier 50, coordination should occur after the initial design phase. Other agency coordination anticipated for each terminal location on the Kitsap Peninsula is listed below.

Southworth

The Southworth project would require installation of a new terminal facility adjacent to the WSF terminal and would require joint use of a portion of the WSF terminal for passengers to access the new POF terminal; therefore, WSF should be consulted early in the design process.

The NEPA process requires agency coordination between federal, state, and local agencies. Through this process, Tribal consultation and approval is required. This coordination effort should begin in the early design phase before 30%.

Kingston

The existing terminal is owned and managed by the Port of Kingston; therefore, Kitsap Transit should engage in early coordination with the Port of Kingston. Additionally, the terminal is adjacent



to the existing WSF terminal; therefore, WSF should be consulted further in the design process to ensure WSF operations will not be impacted by the addition of POF service.

Bremerton

Similarly to Southworth and Kingston, the existing POF facilities in Bremerton are adjacent to the WSF terminal. Therefore, early WSF consultation should occur.

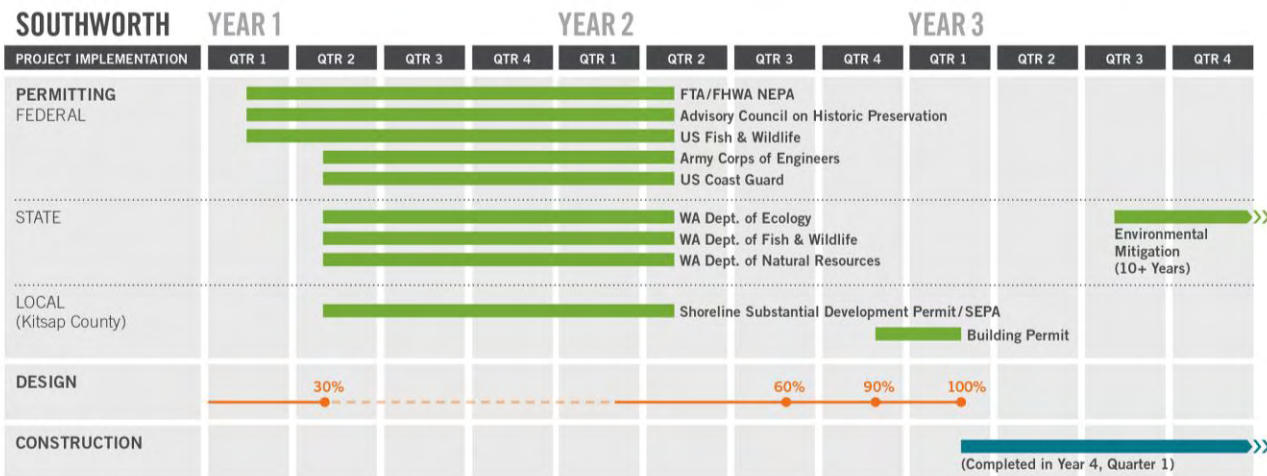


Figure 7-1 General Timeline for the Environmental Review Process, Design, and Construction



Appendix A

ADA Compliance Reference Table

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Accessibility Requirement

ADA Citation

<p>Site Arrival:</p> <ul style="list-style-type: none"> • Parking – accessible parking spaces must be provided in compliance with the formula of percentage of spaces required of the total provided in each parking facility. • Passenger Loading Zones – if provided, these areas must provide an accessible connection. • Modal connections – if other transportation modes adjoin the terminal facilities (bus, rail, Amtrak, etc.), an accessible connection must be provided between the modal facilities. 	<p>206.2 208, 502 209, 503 206.4.4.2</p>
<p>Accessible Routes – an accessible route must be provided from each point of arrival (parking, drop-off, bus stops, modal connections, etc.) to the accessible entrances of the facility. An accessible route must be provided to connect all elements within the facility available for public use or access.</p>	<p>206, 402</p>
<p>Curb Ramps – if a curb is encountered on an accessible path, a curb ramp must be provided.</p>	<p>405, 406</p>
<p>Entrances – no less than 60% of facility entrances must be accessible (new construction). Existing facilities must provide at least one accessible entrance.</p>	<p>206.4</p>
<p>Doors and Gates – doors and gates must provide a minimum 32” clear width and 80” clear height, must have accessible hardware must provide accessible maneuvering clearances for access and use.</p>	<p>206.5, 404</p>
<p>Ramps – ramp slopes cannot exceed 1:12 (8.33%), must have continuous handrails on each side of the ramp, must provide drop-off edge protection, must have landings at each 30’ of horizontal projection.</p>	<p>405</p>
<p>Elevators – elevators have visual and audible signal indications for each action or response and include dimensional and operating characteristics mandated by the ADA.</p>	<p>206.2.3, 407</p>
<p>Escalators – escalators must be at least 32” clear width; must have at least two contiguous treads level beyond the comb plate before the risers begin to form, a strip of clearly contrasting color 2 inches wide, parallel to and on the nose of each step and be slip-resistant.</p>	<p>810.9, ASME A17.1</p>
<p>Ticketing and Automatic Fare Vending – ticketing and validation equipment must provide tactile(raised characters and Braille) and audio instructions for independent use by individuals who have vision impairments or who are blind.</p>	<p>220, 707</p>
<p>Platforms – if provided, boarding platforms must provide all of the accessible features of an accessible route, provide visual and tactile signage for use of the transportation system, have detectable warning material applied to the boarding edge of the platform.</p>	<p>206.3, 403, 810</p>

Public Address Systems and Clocks – if audible public address systems are provided, a means of providing comparable information visibly must also be provided. Clock faces must meet the visual signage requirements of the ADA.	218.5, 810.7, 810.8
Telephones – if telephones are provided for public use, TTY/TDD telephone devices must also be provided based on ADA quantities and placement.	217, 704
Areas of Refuge – if criteria are met that defines a transportation facility that limits egress, an area of refuge and rescue assistance must be provided.	207.2, IBC as noted
Toilet and Bathing Facilities – the ADA provides for exact dimensional placement and quantities of toilet and bathing facilities within a facility.	213, 603, 604, 605, 606, 607, 608
Accessible Means of Egress – the ADA references the IBC requirements for accessible means of egress. The ADA also requires that a tactile sign be placed at all points of egress from a facility.	207
Signage – the ADA has specific visual and tactile (raised characters and Braille) signage characteristics that dictate dimensions, mounting requirements, contrast, glare, character stroke, character and line spacing, and other specifications for accessible signage.	216, 703, 810
Drinking Fountains – like telephones, if drinking fountains are provided in a facility, the ADA specifies mounting, dimensional, access, and quantities for these elements.	211, 602
Maneuvering and Reach Ranges – the ADA requires specific dimensions for the maneuvering of mobility devices to access objects and controls and limits the vertical reach range to 48”.	305, 306, 308
Handrails and Grab Bars – handrails and grab bars must meet the ADA standards for mounting, dimension, and other conditions.	505, 609
Bus Stops – if provided at the terminals, bus stops must provide ADA compliant boarding and alighting areas, signage, and an accessible connection.	810
Stairs – although not included on an accessible path, stairway characteristics are covered under the ADA and must meet criteria for step tread and riser dimensions, handrail requirements and width requirements.	210, 504
Detectable Warning Material – detectable warning must be provided on curb ramp and platform boarding edge surfaces.	705
Miscellaneous Rooms and Spaces – the ADA covers equipment spaces, employee work spaces, kitchens, locker rooms, and many other miscellaneous spaces.	222, 225, 226, 803, 811, 902, 903

Appendix B

Environmental Permitting Summary Matrix

Permit/Approval	Agency	Trigger	Southworth	Kingston	Bremerton
Federal					
NEPA	FTA/FHWA	Activities receiving federal funding.	X	X	X
Endangered Species Act Compliance	US Fish and Wildlife and/or National Marine Fisheries	Activities receiving federal funding.	X	X	X
Private Aids to Navigation	US Coast Guard	New in-water infrastructure that could affect navigation.	X		
Section 10 Compliance	US Army Corps of Engineers	Placing fill within or over navigable waters of the US.	X		
State					
Section 404 Compliance	WA Dept. of Ecology	Actions requiring a federal permit that may discharge pollutants to waters of the US.	X	X	X
Coastal Zone Management (CZM) Consistency Determination	WA Dept. of Ecology	Activities receiving federal funding with Washington coastal counties.	X	X	X
Hydraulic Project Approval (HPA)	WA Dept. of Fish and Wildlife	Work within or above marine and freshwater environments.	X	X	X
Aquatic Lease Agreement	WA Dept. of Natural Resources	Projects located within state-owned aquatic lands.	X		
Local					
Shoreline Substantial Development	Kitsap County	Any work within the shoreline jurisdiction that does not qualify for an exemption.	X		
Shoreline Exemption	Kitsap County	Maintenance and repair of existing facilities		X	
SEPA	Kitsap County	Any activities on lands covered by water.	X	X	
Building Permit	Kitsap County	New or modified structures shall comply with the International Building Code.	X		
Shoreline Exemption	City of Bremerton	Maintenance and Repair of existing facilities.			X
SEPA	City of Bremerton	Any activities on lands covered by water.			X
Building Permit	City of Bremerton	New or modified structures shall comply with the International Building Code.			X

Appendix D

Vessels

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KITSAP TRANSIT

Vessels



September 2014 | Final Report





Passenger-Only Ferry Business Plan and Long Range Strategy

Vessels

September 2014

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1. Fleet Requirements

To identify the vessel design criteria and a fleet mix strategy that is right for the proposed service a review of ridership projections, schedule requirements, amenities offered, and compatibility with loading platforms was conducted.

1.1. ROUTE SPECIFIC REQUIREMENTS

The Bremerton route is the only route with specific vessel requirements due to wake wash performance. The RP1 vessel, which Kitsap Transit (KT) currently owns, has been specially designed and tested to meet the wake wash requirements for the Bremerton route. This is currently the only vessel design that can serve this route and meet the desired transit times.

1.2. VESSEL CAPACITY

Passenger Capacity

The RP1 has capacity for 118 people and 15 bicycles. This capacity is likely to meet demand at project start-up for the Bremerton route, with some limited number of sailings nearing the capacity threshold.

Passenger demand indicates that a 150-passenger vessel will accommodate the Kingston and Southworth routes. The vessel passenger capacity of 150 passengers, allows the vessel to be certified under 46CFR Subchapter T, provided it weighs less than 100 gross tons. Such a “T-boat” is the best alternative due to the limited crew requirement of three, as well as fuel efficiency. This type of vessel is very common for POF service.

Table 1.1: Bremerton – Seattle Ridership Estimates (using Method 1)

Scenario	Annual POF Ridership	Average Riders Per Day and Per Sail	Highest a.m. Peak Ridership	Highest p.m. Peak Ridership
6 round-trips/day	212,544	850/day 71/sail	98	122
12 round-trips/day	419,174	1,677/day 70/sail	145	145

Table 1.2: Kingston – Seattle Ridership Estimates (using Method 2)

Scenario	Annual POF Ridership	Average Riders Per Day and Per Sail	Highest a.m. Peak Ridership	Highest p.m. Peak Ridership
6 round-trips/day	167,325	669/day 56/sail	134	167
12 round-trips/day	329,283	1,317/day 55/sail	198	198

Table 1.3: Southworth – Seattle Ridership Estimates (using Method 2)

Scenario	Annual POF Ridership	Average Riders per day and per sail	Highest a.m. Peak Ridership	Highest p.m. Peak Ridership
6 round-trips/day	138,805	555/day 46/sail	111	139
12 round-trips/day	257,804	1,301/day 43/sail	173	173

Bicycle Capacity

Accommodations should be provided for at least 10 percent of passengers to stow their bicycles (approximately 15 bicycles per sailing). On the vessels, bicycle storage should be near boarding stations to minimize turnaround times, avoid conflicts with pedestrians, and not adversely affect dwell times.

1.3. OTHER VESSEL DESIGN CRITERIA

Vessel design criteria are defined by specific route characteristics, such as ridership demand, speed (whether restricted or not), amenities provided, reliability, and meeting of standard regulatory requirements. The following design criteria are identified for the KT proposed routes.

Loading/Unloading Configuration

Doors and queuing should be arranged to allow for terminal turnaround, including passenger unloading and loading, to occur in seven minutes or less for a full load in both directions. Aisle widths, door widths, number of embarkation stations, passenger routes, and seats per row should be designed to optimize passenger flow for new vessels.

Fuel Consumption

To minimize overall operating costs, it is recommended that fuel efficient vessels be used wherever possible. However, there is always a tradeoff between vessel speed and fuel efficiency, and the high speed required on the Bremerton and Kingston routes will impact fuel economy.

Ride Quality / Schedule Reliability

Weather conditions in central Puget Sound can often present challenges for smaller vessels. During winter storms, wind waves can approach 3 feet, with sustained winds exceeding 30 knots and gusts up to 50 knots. All three routes will be subjected, at times, to these high sea states and winds. Under these conditions, the vessels cannot maintain their calm water speed and must slow down, thus affecting schedule reliability. In severe weather, some vessels will not be able to operate.

In general, larger (longer) vessels behave better under these weather conditions than smaller (shorter) vessels, with less pitch and roll. In addition, new vessels can be designed to mitigate adverse effects of weather on ride quality. Therefore, a longer hull form, greater than or equal to 20 meters or longer, would be appropriate. Such new vessels should be designed in accordance with the weather conditions specific to central Puget Sound.

Passenger Amenities

Based on online survey data of 1,205 respondents, conducted by KT during the period of June 7 to 25, 2014, the following vessel amenity preferences were indicated:

- Comfortable seating (70 percent)
- Wi-Fi (32 percent)
- Electrical Outlets (24 percent)
- Tables (23 percent)
- Food/Beverages (16 percent)
- Air Conditioning (14 percent)
- Bike Racks (10 percent)
- Other (8 percent)

Based on this survey and experience from other passenger ferry systems, recommended amenities that will increase customer satisfaction and help improve ridership are:

- Comfortable seats that allow passengers to relax or work.
 - Seat back tray tables to provide a surface for writing, stowage of packages, and the like.
 - Sufficient seat pitch to provide comfortable leg room.
- Wi-Fi.
- Provision for coffee/drinks and food items at the terminals prior to boarding the ferry.

- Bathroom facilities should be available for both crew and passengers, on-shore where possible, and on the vessels.
- Provision for adequate ventilation. Adequate ventilation will satisfy most customers. Air conditioning may be desired by some potential riders, but it would be an unusual amenity on any ferry, especially in Puget Sound. Reported problems with heat in the cabin on the RP1 on warm days should be addressed by increasing ventilation through fans and venting. This strategy should be tested, and if not satisfactory, an appropriate solution should be developed via study and design.

Wake Wash / Wake Energy

Wake wash energy is of greatest concern on the Bremerton route, but still need to be considered for Southworth and Kingston as vessels near port. For Bremerton, the wake wash study shows that the RP1 satisfies wake wash criteria for the entire route, provided that the vessel operates at an appropriate speed to minimize wash energy over each portion of the route. With the exception of near (or nearby) the terminals, the majority of the Kingston and Southworth routes are primarily in open water. Therefore, wake wash/energy issues only affect the Kingston and Southworth routes during the maneuvering portions of each route.

Vessel Draft and Deck Freeboard

The vessel draft determines the seafloor level required to float the ferry and keep debris out of the propulsion system. Vessel drafts are expected to be 4 to 5 feet, and the required clearance below the vessel is expected to be 2 to 4 feet. Since the lowest tide is approximately -4 mean lower low water (MLLW), the seafloor level needs to be -10 to -13 MLLW or deeper where vessels are moored.

1.4. COMPLIANCE CRITERIA

All vessels are required to comply with the Americans with Disability Act (ADA) requirements to allow for accessibility into and on vessels, as well as other security and safety compliance issues as regulated by the U.S. Coast Guard (USCG).

Accessibility / ADA Compliance

The vessels need to be fully accessible to people with disabilities, including mobility, sight, and hearing impairments. The United States Access Board Proposed Passenger Vessels Accessibility Guidelines, which are not yet final, should be incorporated into new vessel designs. If existing vessels are leased or purchased, they should be assessed for compliance and modified if necessary. The following design recommendations will help meet these requirements:

- **Single Passenger Deck:** Having all passenger accommodations on a single deck eliminates the need for elevators or other elements necessary to provide equal accommodations. If two decks are necessary, have the majority of passengers located on the boarding station deck.
- **Vessel and Boarding Float Freeboard:** The freeboards of the vessel and boarding float should be aligned to meet gangway slope requirements.



U.S. Coast Guard Regulatory Compliance

All vessels, whether new or used, will be required to meet USCG regulations. Navigational equipment (radars, lights, GPS, etc.) and life safety items, as well as others, are reviewed by USCG to determine if the type, location, and capacity are acceptable. For this size of vessel, most of the requirements will be found in Title 46 of the Code of Federal Regulations Subchapter T – Small Passenger Vessels and USCG Navigational Rules.

2. Route Plan Research

Route plans were developed, using the crossing time goals below, to help the team understand if existing local POF vessels could serve the routes. Once the route plans were developed, it became clear that existing, analyzed POF vessels could not meet the speed requirements needed to meet the proposed service schedules for certain routes. These route profiles were also used to identify estimated fuel consumption by route. Vessels reviewed include the following:

- RP1 (118-passenger foil-assisted catamaran—used in testing by KT on the Bremerton route—owned by KT).
- The Spirit of Kingston (150-Passenger foil-assisted catamaran—used on the King County West Seattle Route—owned by King County Marine Division).
- Melissa Ann (172-passenger non-foil-assisted catamaran—previously used on the King County Vashon Island route—leased from Four Seasons Marine Services).

The fully loaded speed requirements and associated fuel consumption by vessel were used to analyze the possibility of completing the one-way trip by route using the known passenger-only vessels currently in use in the Puget Sound, as outlined above.

Table 2.1: Target Schedules and Vessel Speed Requirements

Scenario	Target Crossing Time (min)	Dwell Time Needed (min)	Total One-Way Trip Time (min)	Max Speed Needed (kts)
Bremerton	28	7	35	35*
Kingston	33	7	40	34
Southworth	23	7	30	28

*Note: The Bremerton route speed through Rich Passage is the speed required by the operating parameters from the Rich Passage Wake Wash Study, which produces the least wake energy.

Bremerton

Based on the route profile information in Table 2.2 below, the RP1 vessel can maintain the speeds necessary to make a 35-minute one-way trip to Seattle. The RP1 vessel is the only vessel that can be used on the Bremerton route due to the low wake design.

Table 2.2: Bremerton to Seattle Route Plan Using RP1

Bremerton to Seattle -RP1: 35-Minute One-Way Trip (Includes 7-Minute Dwell Time)						
Route Element	Distance (Statute Miles)	Average Speed (kts)	Average Speed (MPH)	Time Required (minutes)	Engine RPM	Fuel Consumption (gallons)
Bremerton - Manuever	0.3	9.0	10.4	1.74	1100	0.62
Bremerton to Rich Passage Turn Pt	3.5	35.0	40.3	5.22	2150	13.61
Rich Passage to Seattle Turn Pt	3.0	35.0	40.3	4.47	2150	11.66
Seattle Turn Pt to Seattle	8.7	30.6	35.2	14.83	2000	31.13
Seattle - Manuever	0.3	9.0	10.4	1.74	1100	0.62
Seattle Off/On Load PAX	0.0	0.0	0.0	7.00	500	0.25
Total (or average) One Way	15.8	29.4	33.9	35.00		57.90

Kingston

The Kingston route is the longest haul of the three routes. In order to meet a 40-minute one-way trip, a vessel would need to maintain a speed of approximately 34 kts. This 40-minute schedule allows for one vessel to make the three desired peak period direction trips within the commuting peak period.

Two vessels were chosen for the route plan analysis, which include the Spirit of Kingston and the RP1. A typical T-boat with a 150-passenger capacity is ideal for this route, based on the projected ridership identified in Section 1.2¹.

¹ The Kingston route is not constrained by the use of the RP1 low wake vessel with its passenger capacity of 118.

The RP1 can maintain the speed needed to meet the schedule requirements; however, the capacity is limiting for the route. The maximum achievable fully loaded speed of the Spirit of Kingston is approximately 34 knots, and therefore cannot make the schedule performance criteria (refer to Table 2.3) of a 40-minute one-way trip. It is likely that KT will need to build a new vessel to meet the operating requirements of this route, as there is a limited available market for existing passenger-only vessels to meet these speed requirements in the Puget Sound area. The Melissa Ann also cannot maintain the speed needed to meet the schedule performance criteria.

While the Spirit of Kingston is just shy of maintaining the schedule performance criteria, the vessel could serve as a potential backup vessel for the route. Schedule alterations for the short-term backup would need to occur. Additionally, the RP1 vessel could serve as a backup for the Kingston route. While the RP1 can make the schedule of a 40-minute one-way trip, the passenger capacity is limited (refer to Table 2.4). Either sacrifice in schedule or capacity could be managed on a short-term basis.

Table 2.3: Kingston to Seattle Route Plan Using the Spirit of Kingston

Spirit - 40-Minute One-Way Trip; 7-Minute Dwell Time; Kingston to Seattle					
Route Element	Distance (Statute Miles)	Average Speed (kts)	Average Speed (MPH)	Time Required (minutes)	Fuel Consumption (gallons)
Kingston - Manuever	0.3	9.0	10.4	1.74	0.88
Appletree Cove to Elliott Bay	18.6	32.5	37.4	29.86	71.98
Seattle - Manuever	0.3	9.0	10.4	1.74	0.88
Seattle Off/On Load PAX	0.0	0.0	0.0	7.00	0.26
Total (or average) One Way	19.2	30.0	34.6	40.34	74.00

Table 2.4: Kingston to Seattle Route Plan Using the RP1

40-Minute One-Way Trip; 7-Minute Dwell Time; Kingston to Seattle						
Route Element	Distance (Statute Miles)	Average Speed (kts)	Average Speed (MPH)	Time Required (minutes)	Engine RPM	Fuel Consumption (gallons)
Kingston - Manuever	0.4	9.0	10.4	2.32	1100	0.83
Appletree Cove to Elliott Bay	18.6	33.6	38.6	28.88	2100	71.50
Seattle - Manuever	0.3	9.0	10.4	1.74	1100	0.62
Seattle Off/On Load PAX	0.0	0.0	0.0	7.06	500	0.25
Total (or average) One Way	19.3	30.6	35.2	40.00		73.21

Southworth

The Southworth route is the shortest of the three routes; with a proposed one-way trip of 30 minutes, the service is very similar to the existing King County Water Taxi route from Vashon Island to Pier 50 in Seattle. Three vessels were used in the development of representative route profiles; the RP1, Spirit of Kingston and the Melissa Ann. All three vessels have the speed needed to meet the route performance criteria.

The Melissa Ann is currently used on the Vashon to Seattle route and is scheduled for release from lease agreement with King County in the end of September 2015. While the Melissa could

be an option for the Southworth route, the timing of bringing the route online, which is discussed further in the Implementation Phasing and Financial Plan, may be far enough out that a newer, more efficient vessel may be available for lease.

The RP1 is not an ideal vessel for the route due to its limited passenger capacity; however, it could serve as a backup vessel to the route. The Spirit of Kingston and the Melissa Ann could also serve as backup vessels to the route without impacting the schedule.

Table 2.5: Southworth to Seattle Route Plan Using the Melissa Ann

Southworth to Seattle - Melissa Ann: 30-Minute One-Way Trip (Includes 7-Minute Dwell Time)					
Route Element	Distance (Statute Miles)	Average Speed (kts)	Average Speed (MPH)	Time Required (minutes)	Fuel Consumption
Southworth - Manuever	0.3	9.0	10.4	1.74	0.53
Southworth to Elliott Bay	10.4	28.0	32.2	19.38	32.26
Seattle - Manuever	0.3	9.0	10.4	1.74	0.53
Seattle Off/On Load PAX	0.0	0.0	0.0	7.00	0.26
Total (or average) One Way	11.0	25.1	28.9	29.86	33.57

2.1. ESTIMATED FUEL CONSUMPTION

Route operating profiles were developed to compare the effect of travel and dwell time on fuel consumption. Dwell time, as mentioned above, is assumed for each route at seven minutes, which will allow time for the loading and unloading of passengers.

A fuel consumption comparison curve was generated based on empirical fuel consumption data on three representative vessels:

- Melissa Ann (172-passenger non-foil-assisted catamaran—used on the King County Vashon Island route)
- The Spirit of Kingston (150-passenger foil-assisted catamaran—currently used on the King County West Seattle Route)
- RP1 (118-passenger foil-assisted catamaran—used in testing by KT on the Bremerton route)

The comparison curves are based on gallons per statute mile and gallons per passenger mile are shown in Figure 2.1.

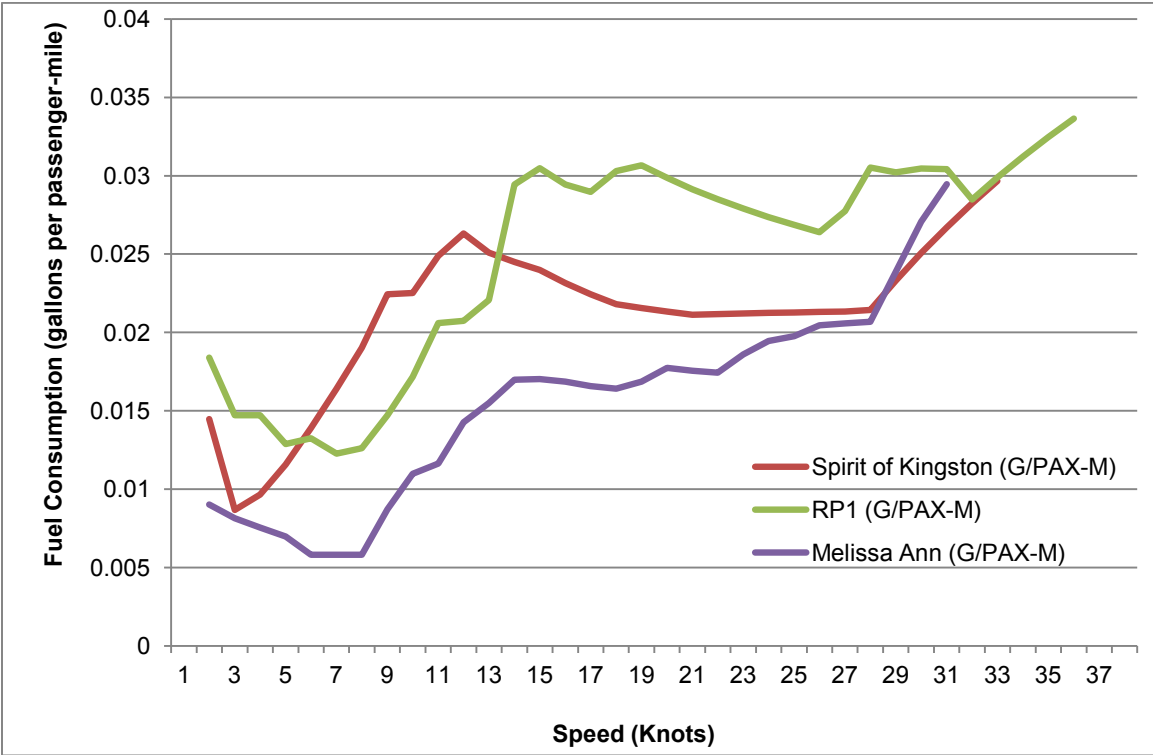


Figure 2.1: Fuel Consumption Curve

2.2. ROUTE PLAN RECOMMENDATIONS

- Bremerton Route: The 35-minute, 7-minute dwell time route using the RP1 is optimal in terms of fuel economy and is recommended for all scheduled trips.
- Kingston Route: The 40-minute, 7-minute dwell time route is recommended. Because of the length of this route, a non-conventional hull form, such as through the use of foils or long slender hulls, will need to be considered.
- Southworth route: A 30-minute schedule with 7-minute dwell time is recommended. The vessel utilized for the Southworth route will need to be able to achieve a fuel efficient speed of 28 knots to enable a 30-minute trip with a 7-minute dwell time.
- A 7-minute dwell time is recommended to allow time for loading and unloading of passengers.

3. Backup Vessel Requirements

In the event of a mechanical breakdown or casualty, backup vessel(s) should have sufficient capacity and speed to handle passenger volumes on the published schedule for all three routes. Backup vessel(s) could also be used to provide extra trips during peak demand periods, should additional service be considered in the future.

3.1. BREMERTON

The Bremerton route is the only route with specific vessel requirements due to wake wash considerations. The RP1 has been specially designed for this route, as no other known vessel has been proven to meet the wake energy limits set for this route while maintaining speed (time) demands. The RP1 has capacity for 118 passengers, and while it satisfies most vessel design criteria requirements for all the routes at system start up, a single RP1 class vessel will not provide adequate capacity for peak demand on all three routes. For startup, the RP1 backup boat (known as the RP2) could also serve as the backup boat for the other two routes. The phasing of backup vessels and how they would serve routes as they come online is discussed in more detail in a later report. Should service begin without a backup vessel on this route, an alternative service option would be for passengers to use the Washington State Ferries (WSF) service. KT will need to ensure a fare media arrangement is made with WSF so that KT passengers are not adversely affected financially should the backup scenario occur.

Backup Vessel Strategy:

- Commission the design/construction of a new RP2 vessel to serve as backup to the route.
- Later, commission the design/construction of a new RP3 vessel to serve as backup for expanded service on the Bremerton route.

3.2. KINGSTON

The Kingston route requires a boat that can achieve good fuel economy at fairly high speeds (33.6 knots). There are two current alternatives that would enable KT to meet this need as well as to accommodate growth in the system for all three routes.

Backup Vessel Strategy:

- Develop criteria for a request for proposals for leased vessels that are fuel efficient and provide sufficient passenger capacity to meet demand.
- Commission the design/construction of a new vessel based on similar criteria.



3.3. SOUTHWORTH

The Southworth route has no route-specific design requirements, except that the vessel must be able to achieve 28 knots with good fuel economy and provide sufficient passenger capacity to meet demand.

Backup Vessel Strategy:

- Develop criteria for a request for proposals for leased vessels that are fuel efficient and provide sufficient passenger capacity to meet demand.

4. Fleet Mix Strategy

The fleet requirements for the KT POF service differ slightly between the three routes. While a standardized system is ideal to streamline maintenance and operating training, it is likely not possible for this service. The Bremerton route provides vessel type restrictions to minimize impacts to the beaches of Rich Passage from both natural and wake impacts, making standardization difficult. While the speed of the RP1 could serve the Kingston route, the capacity will likely not meet passenger demand. Additionally, the Southworth route does not require such a fast and custom designed vessel. That being said, efforts should be made to standardize the fleet when possible, while also utilizing shared or available assets in the area, such as those vessels currently owned or leased by King County Marine Division.

Appendix E

Operations

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KITSAP TRANSIT

Operations



July 2014 | Final Report





Passenger-Only Ferry Business Plan and Long Range Strategy

Operations

July 2014

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Appendices

- Appendix A – Marine Operations Functions, Skills & Expertise
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1 Service Delivery Options

Multiple service delivery alternatives or permutations were initially considered for appropriateness and viability. The results of this initial evaluation process can be summarized by the following list of options that were considered further:

- Direct agency delivery of all ferry services.
- Private contractor provision of all ferry services.
- Public/Private partnership as means to share delivery of ferry services (two similar options with the only difference being who performs system maintenance).
 - Public agency owns and maintains vessels, owns or leases facilities; Private contractor crews and operates vessels and facilities.
 - Public agency owns vessels, owns or leases facilities; Private contractor crews, operates, and maintains vessels and facilities.
- Public/Public partnership as means to deliver, or share delivery of, all ferry services.

Each of these service delivery options was evaluated for potential benefits and drawbacks, with the goal of ascertaining the preferred option. For each option a basic description has been provided. In turn, the identification of the advantages, disadvantages, and any associated risks for each option has been captured in a matrix format. This format allows for a direct comparison of the key findings for each delivery option. Finally, given these findings a recommendation is provided.

1.1 PUBLICLY OWNED AND OPERATED

The publicly owned and operated option would involve the following basic elements:

- Kitsap Transit (KT), either directly or through a dedicated marine section, would act as the lead agency on all aspects of the passenger-only ferry (POF) service, including:
 - Establish needed operating and administrative staffing/organizational structure, and hire appropriate and experienced staff.
 - Obtain (through purchase or lease) appropriate terminal facilities.
 - Obtain (through purchase or lease) necessary vessels, including applicable backup vessel services.
 - Establish appropriate service maintenance systems and staffing for both terminals (as appropriate) and vessels.
 - Comply with all applicable safety, security, environmental protection, and emergency response requirements for vessels and facilities.

1.2 PRIVATELY OWNED AND OPERATED

The privately owned and operated option would involve the following basic elements:

- KT, either directly or through a dedicated marine section, would provide:
 - Needed contract oversight and coordination for terminal leases/purchase and vessel operating contract.
 - Appropriate terminal facilities (through purchase or lease).
 - Needed support staffing to perform oversight and hire appropriate staff.
 - Contract with private operator to provide all ferry operating services.
- Private operator would provide all ferry services, including:
 - Vessels, including those necessary to provide backup services.
 - Vessel operating, crewing, and maintenance services.
 - Terminal operating, staffing, and maintenance services as applicable.
 - Compliance with all applicable vessel related safety, security, environmental protection, and emergency response requirements.

1.3 PUBLIC/PRIVATE PARTNERSHIP OPTIONS

The two public/private partnership options would involve the same basic elements identified below, with the only difference being which organization provides maintenance systems and associated staffing:

- KT, either directly or through a dedicated marine section, would provide:
 - Needed contract oversight and coordination for terminal leases/purchase and vessel operating contract.
 - Purchase or lease of vessels, including vessels necessary to provide backup services.
 - Appropriate terminal facilities (through purchase or lease).
 - Needed support staffing to perform oversight, including hiring of additional staff as appropriate.
 - Contract with private ferry operator to provide ferry operating services.
 - Appropriate service maintenance facilities, systems, and staffing for both terminals (as appropriate) and vessels in the first option. In the second option, this element would be moved to the private operator's set of responsibilities and would be added to contract.
- Private operator would provide ferry services, including:
 - Vessel operations and crewing services.
 - Terminal operations and staffing services.



- Appropriate service maintenance facilities, systems, and staffing for both terminals (as appropriate) and vessels in the second option. In the first option, this element would be performed by the public entity.
- Compliance with all applicable vessel and terminal related safety, security, environmental protection, and emergency response requirements.

1.4 PUBLIC/PUBLIC PARTNERSHIP

Similar to the public/private partnership option, the public/public option would involve the following basic elements (and could include some negotiated variations to these basic elements, such as KT could provide vessels for another agency to operate):

- KT, either directly or through a dedicated marine section, would provide:
 - Needed interagency oversight for terminal leases/purchase and vessel operating agreement.
 - Appropriate terminal facilities (through purchase or lease).
 - Needed support staffing to perform oversight and hire appropriate staff.
 - Interagency agreement with public operator to provide all ferry operating services.
- Other public ferry operator provides services, including:
 - Vessels, including those necessary to provide backup services.
 - Vessel operating, crewing, and maintenance services.
 - Terminal operating, staffing, and maintenance services as applicable.
 - Compliance with all applicable vessel related safety, security, environmental protection, and emergency response requirements.

1.5 SERVICE DELIVERY MATRIX

For comparison purposes, the matrix provided on the next page depicts the potential advantages and disadvantages associated with each of the service delivery options. Since not every element is fully satisfied by the particular option being considered, the matrix employs the following key:

- – Fully applies
- ◐ – Partially applies
- – Does not apply

Service Delivery Options – Advantages and Disadvantages	Publicly Owned and Operated	Privately Owned and Operated	Public/Private Partnership	Public/Public Partnership
Advantages				
■ Maintains full control for all marine functions within KT (or sub-unit), eliminating need for coordination with an external agency or private operator	●	○	○	○
■ Provides skills and expertise for operating (some or all of) the ferry system by an established operator, eliminating need to build this experience	○	●	●	●
■ Allows direct KT control over type of service provided, from level of customer service to workplace environment for employees	●	○	○	○
■ Results in low risk of functions slipping through the crack, since the primary responsibilities reside in one place.	●	◐	◐	◐
■ Lessens challenges associated with the start up of a new organization and operation of a new ferry system due to experience of knowledgeable operator	○	●	◐	●
■ Provides for ferry operator knowledgeable of, and sensitive to, unique public sector transportation issues	●	○	○	●
■ Provides ability to leverage existing resources within KT as means to provide efficient service	●	○	◐	◐
■ Offers operator fully aware of, and used to meeting/providing, granting agency expectations	●	○	○	●
■ Facilitates ease of applying for, obtaining, and overseeing grants and special funding for capital assets (vessels and terminals as applicable)	●	○	◐	●
■ Allows KT to obtain, and maintain control over, its own assets (vessels and terminals as applicable)	●	○	◐	◐
■ Fosters full integration and cooperation of marine-related functions within the KT organization	●	○	○	○
■ Provides ability to react quickly to address concerns and influence change	●	◐	◐	◐
■ Allows KT to focus on land-based transit functions	○	●	◐	●
■ Provides private sector with opportunity to add jobs in local communities	○	●	◐	○
Disadvantages				
■ Requires all staffing support to be contained in house, with attendant added workload	●	○	◐	○
■ Requires maintenance of some staffing support by KT to oversee contracts and interagency agreement compliance and fund transfers, as well as capital program management.	○	●	◐	●
■ Misses opportunity for private sector to add jobs	●	○	◐	●
■ Results in challenges associated with the start up of a new organization and ferry system	●	◐	◐	◐
■ Requires elements of particular importance to be embedded in contract agreement and oversight of same	○	●	●	●
■ Results in the some loss of control over the type of service provided, from level of customer service to workplace environment for employees, but expectations would likely be similar	○	●	●	●
■ Operator might not be aware of, and sensitive to, unique public sector transportation issues	○	●	●	○
■ Requires KT to meet granting agency expectations, but reliance on operator to provide data to satisfy	○	○	●	●
■ Reduces the opportunity to leverage existing resources within KT as means to provide efficient service	○	●	◐	◐
■ Lessens ability to react quickly to address concerns and influence change	○	◐	◐	◐
■ Results in some risk of functions slipping through the cracks	○	◐	◐	◐

1.6 SERVICE DELIVERY RISKS

Distinct from the advantages and disadvantages associated with the various options, each option possess differing potential risks that are worthy of highlighting. While no effort has been made to quantify the likelihood and/or consequence of these risks, they should be considered as part of the decision making process.

The publicly owned and operated option is subject to the following risks:

- If there are service interruptions during the start up period there is a risk of public criticism directed at KT for taking on this service.
- Because ferry service would provide another element for KT leadership to focus on, there is an attendant risk that either the land-based or waterborne transit system (or both) would suffer from a lack of attention or appropriate focus.
- There is some risk that the expertise necessary to ensure success cannot be found and hired because top talent will be hesitant to take a job for an organization that isn't established as the perceived job security risk is too high.
- There is the potential risk of labor issues arising within the organization. Because of the unique labor unions and the history of collective bargaining agreements in the Puget Sound area challenges may arise in establishing acceptable agreements, plus there is some risk associated with how they might impact other labor within KT.

The privately owned and operated option may have the following risks:

- If there are service interruptions during the start up period the risk of public criticism would still exist, but would likely be less than if the services are taken on by KT.
- The potential risk of labor issues arising would likely be reduced, but not eliminated, in this service delivery model. The unique labor challenges may still arise but would be largely an issue for the operator (as opposed to KT). This could be true whether or not the private operator possessed a unionized workforce.

The two public/private partnership options would possess similar risks to the privately owned and operated option, with likelihood and consequence varying slightly.

The public/public partnership option is subject to the following risks:

- There is some risk that county residents will have a negative perception of having another public agency provide their ferry service.
- If there are service interruptions either during the start up period or at any point in the future, there is a risk of public criticism aimed at the other agency not placing an appropriate priority on the Kitsap service.
- The other public sector operator will have already established labor agreements. This may eliminate many of the potential labor issues, but does not necessarily solve all of the labor problems – for example; how would the difference between King County salaries and Kitsap County salaries be resolved.

1.7 RECOMMENDATIONS

Based on the assessment of these service delivery models, the models with shared responsibilities tend to have the most disadvantages and attendant risks. This is tied generally to the fact that organizations with split responsibilities are not as focused or efficient and have an associated greater risk of key functions not receiving the attention they need or deserve. Consequently, service delivery options that retain the greatest degree of operational cohesion are generally preferred if operational control is a driving consideration.

Direct agency delivery of service offers the most control and the least risk of coordination challenges, but also represents the greatest amount of work and the most risk of public criticism and political outfall. This option also requires the greatest amount of infrastructure development and commitment of time and resources by the agency.

Privately owned and operated service delivery essentially turns over the service to a private operator, effectively representing a direct service purchase. It is clean and minimizes agency workload. This option allows service to be turned on and off, or modified, simply through a contract agreement, providing an easy way to exit should the commitment to ferry service wane, but it also sends this very message to potential riders, perhaps introducing a negative tone at the outset and skepticism about commitment and sustainability of service. This option may also represent the most costly, as the private operator will have to recoup their both their costs and their capital investments.

A **public/private partnership**, allows KT to remain engaged, while purchasing specialized services (to varying degrees). This option attempts to take advantage of existing skills and experience within KT and supplement it with external contracts. In so doing, it requires additional coordination and added risk of conflicts arising. However, this option is attractive as an initial implementation option, which can be modified in the future should that become desired.

A **public/public partnership** uses the experience and infrastructure of another public operator and has the benefit of taking advantage of this local public sector expertise. It has the potential disadvantage of raising concerns about equitable treatment on all routes and potential labor concerns. This option may also possess some challenges associated with the labor force residing on the east or west side of Puget Sound.

As this brief summary suggests, there are advantages and disadvantages with each option. The summary table of advantages and disadvantages, and summary of risks provided above, while helpful to summarize and focus the issues associated with the various options, does not provide a measure of significance or priority ranking to these issues. Accordingly, this information cannot be relied upon solely to produce a recommendation.

If KT is committed to the long-term establishment of a publicly owned and operated POF service, then the agency operated ferry system might be the most prudent means of delivering service. It provides for direct control and full buy-in of providing service. However, it also represents the largest commitment of resources and establishment of overhead and is not considered the first choice for initial implementation. Further, the privately owned and operated option would not seem to support the long-term goals of establishing a public sector waterborne transportation



system and would likely be the most costly of the options, and is also not considered the preferred option for implementation.

Accordingly, to promote the greatest chances for long-term service sustainability, without establishing significant overhead and infrastructure, the remaining two options become more attractive. Of these options, the public/private partnership option has already been used to some extent by KT and represents a model that could be employed successfully based on the history. This option could be employed, with either maintenance conducted in-house or by the contract operator.

However, the public/public option offers some distinct advantages over the private operator. It is preferred, as it takes advantage of an existing public transportation system with marine experience and potential sharing of assets. This option allows for the leveraging of KT resources and, if successful, could be used as the model for interagency public cooperation and efficiency. This option also could be used as an intermediate step to a KT publicly owned and operated system in the future.

2 Operations Management

To define an appropriate organizational structure that can successfully deliver passenger-only ferry service the following steps have been undertaken:

- First, a basic description of the marine operating environment is articulated as this sets the stage for the development of appropriate organizational structures.
- Next, the broad body of work that must be performed is identified.
- Then, using this broad body of work, the specific marine functions, skills, and expertise considered critical to successful operations are identified and subdivided into the two general categories of: (1) marine operations and (2) marine finance and administrative support.
- Finally, for each of the service delivery models identified in the previous section, the staffing levels considered to be the minimum necessary to perform these functions are summarized along with an illustrative organizational structure and including an associated subdivision of functions.

Marine Operating Environment

The operation of a POF as a waterborne mass transit system is quite unique and requires specialized knowledge, management, and oversight to be successful. A POF service operates in a heavily regulated industry at the Federal, State, Local, and Tribal levels, subject to multiple jurisdictions with very close regulatory oversight and coordination responsibilities covering topics such as operating protocols, vessel and facility material conditions, safety, security, environmental protection, and emergency preparedness and response. To appropriately evaluate the organizational and staffing needs associated with the operation of a POF service, a basic appreciation for the operating environment is necessary.

Most notably, and unlike any other transportation system, the U.S. Coast Guard (USCG) actively enforces a set of extensive regulations. For example, the USCG employs a regulatory regime that includes periodic vessel material condition and safety inspections and dry dock examinations, facility safety and security assessments, supervised organizational and personnel training, qualifications, drills and testing, and unannounced spot checks and exams. The USCG establishes stringent physical and operating safety and security standards with attendant reporting and monitoring expectations. In addition, strict pollution control, reporting, and response protocols are demanded by the USCG, as well as the Washington State Department of Ecology and other agencies.

Because of this unique regulatory oversight, it is critical to successful long-term operations to establish and maintain a positive reputation as a knowledgeable and responsible marine operator, with an attendant strong working relationship and positive rapport with the USCG and other applicable agencies.

The marine operating environment is also very litigious, with marine management, both organizationally and personally, exposed to criminal and civil litigation. Notable examples include: the employee tort claims process, where employee on-the-job injuries are handled through the federal Jones Act process which, by its nature sets up an adversarial legal relationship between the employee and employer; the environmental protection laws in the marine environment hold the operator responsible for pollution prevention and response actions, with a failure to comply subject to criminal prosecution; and in the arena of emergency response the operator is at risk of unique marine civil and criminal litigation.

Even in the finance and administrative arenas, there are unique needs and expectations tied to marine operations. As with almost any public transportation service, there would be a need to oversee financial and administrative services. While the collection of revenues in the form of fares directly from its riders and the accounting for subsidies from local, state and federal tax sources and the management of employees may be common to public transportation, they contain some uniquely marine aspects such as:

- The isolation and accounting of marine revenue
- Advantages of specific marine-related tax codes and rules
- Financial accounting expectations established by federal granting agencies
- Marine specific union work rules
- Crew scheduling/dispatching and payroll practices
- Documentation and reporting of sea time for marine employees
- Unique marine supplier and purchasing needs, and
- Marine personnel qualification, training and on-the-job injury claims processes.

This list, while not exhaustive, provides an appreciation for the distinctly marine aspects and highlights the need to appropriately account for these aspects when formulating a business plan.



Marine Body of Work

The broad body of work associated with the operation of a POF service can be summarized as follows:

- Operate POF service on multiple routes.
 - Safely operate vessels on schedule
 - Provide necessary shore side support functions
- Provide timely, accurate, and friendly customer service.
- Comply with federal, state, local, and tribal rules, regulations, and laws.
- Recruit, train, schedule, and dispatch crews.
- Collect revenue and maintain revenue control.
- Maintain and preserve vessels, terminals, and any maintenance facilities.
- Provide appropriate personnel support functions, including as applicable:
 - Collective bargaining administration, including contract negotiations, contract management, and grievance administration
 - Pay and benefits management
 - Oversight of general employee health and welfare issues
- Maintain vessel lease acquisitions as necessary to provide for primary and backup/on-call vessel(s) services.
- Partner with and comply with terminal facility leases, including any necessary acquisition initiatives.
- Provide oversight, expertise, and guidance on new vessel needs, designs, regulatory compliance, contracting, and construction.
- Plan, design, bid, and implement as applicable terminal upgrades at waterfront facilities.
- Cooperate in local and regional POF planning efforts and initiatives.
- Comply with all Kitsap County organizational expectations, such as procurement, contracting, employee pay and labor, planning and coordination, emergency, and continuity of operations.

Successful completion of this broad body of work requires a certain level of expertise and skills, which can be grouped into the two general categories of Marine Operations and Marine Finance and Administration Support. A detailed listing of functions in these two categories is provided below.

Marine Functions, Skills and Expertise

Marine Operations

In general, the marine operations functions are tied to the oversight and management of all waterborne and shore side aspects of providing POF service. These functions include the following broad topics:

- Ensuring vessel regulatory compliance for operations and staffing.
- Establishing safety, security, environmental, and emergency response protocols.
- Coordinating vessel operations and maintenance of vessels.
- Managing personnel and procurement activities to support vessel operations.
- Managing the operating budget.
- Providing documentation for various regulatory and granting agencies.
- Overseeing daily shoreside operations, passenger queuing, ticketing, and support functions.
- Providing customer service functions including questions, complaints, comments, and service interruptions.
- Providing community outreach efforts and media relations.
- Developing and distributing printed scheduling information.
- Coordinating with other passenger ferry operations for shared use of facilities.

A detailed, but non-exhaustive list of marine-related operational functions can be found in Appendix A of this report.

Finance and Administrative Support

In general, marine finance and administrative support must provide a wide array of functions necessary to support marine operations. The key functions can be summarized as follows:

- Budget development, reporting, and tracking for operating and capital funds.
- Accounts payable and receivable, and invoicing.
- Grant oversight and expenditure reviews and reporting.
- Audit responsibilities both internal and external; liaison.
- Procurement, Request for Proposal (RFP), and acquisition processes.
- Fixed asset physical inventory reporting.

A detailed, but non-exhaustive list of marine-related finance, administration, and support functions can be found in Appendix B of this report.



2.1 ORGANIZATIONAL ALTERNATIVES

Regardless of the size of the marine operation, there is a requisite set of skills and a minimum staffing level considered necessary to successfully deliver safe, reliable POF service. This is true regardless of the service delivery method employed, with these skills necessarily provided somewhere within the structure. A description of an appropriate organizational structure that meets the requisite skill and staffing demands for each of the service delivery models is described below.

Direct Agency Delivery of All Ferry Services

In this service delivery model, KT would be responsible for all aspects of ferry operations and support. The operations, as well as finance, administration, and support functions, would be performed by in-house dedicated staff or with leveraged staff resources currently within KT.

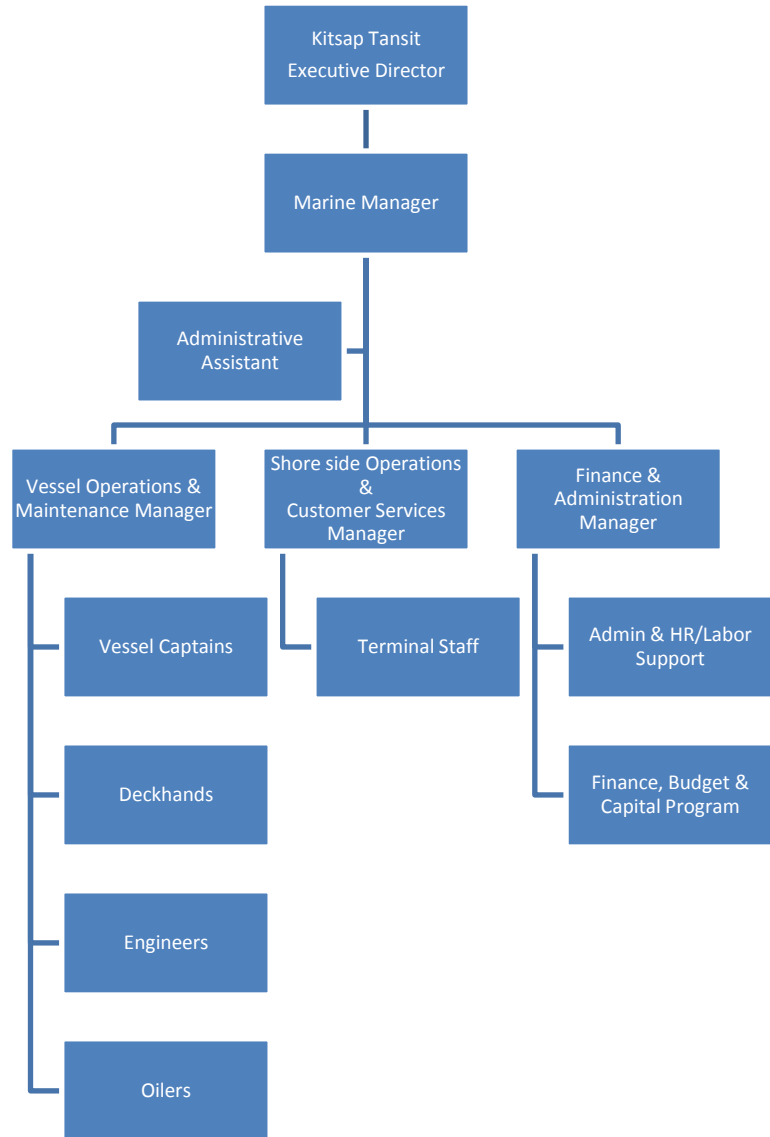
To perform the marine operations functions, it is believed that a minimum of three staff members is required. The duties may be assigned differently, but the required command and control functions warrant a minimum staff of three with requisite marine experience with a fourth likely if no leveraging of existing staff can be accomplished. This staff would be responsible for all ferry operations, as well as capital project management. This minimum staffing would likely be comprised of a supervisor and two subordinate staff members. It would allow for some minimal, yet necessary, overlap of functions that afford personnel the opportunity to be absent without a harmful operational impact.

While a minimum of three marine-specific staff are required, the level of dedicated staffing necessary to accomplish the finance, administration, and support functions would be highly dependent on the amount of leveraging that can be done with existing related staff. This staff would need to fulfill a broad spectrum of support functions, including functions such as: purchasing, budgeting, contracting, human resources, accounts receivable/payable, and general administration.

As mentioned, some of the support staffing needs could be met by existing staff within other related departments if they have the capacity to do so, but this would likely only equate to the reduction of a single staff member. For example: the process of budget development, while needing specific marine involvement, is general in nature and could be performed by other members of KT subject to availability of time. Similarly, the human resources functions could, with specific training in marine-related nuances, be performed by existing human resources staff, again subject to time/resource availability.

The following organization chart depicts one approach to how direct agency delivery of POF service could be accomplished. This organization is similar the organization employed by King County. This organization has a total management and administrative staff of seven that includes three operations managers and four finance and administration managers and supporting staff.

Note: KT may have existing resources that could be leveraged to efficiently deliver some, but not all, of these functions. A more thorough assessment of existing KT staffing levels and workload is necessary to determine the extent to which current staff can be leveraged to support marine operations. Accordingly, these areas of potential efficiency have not been identified.



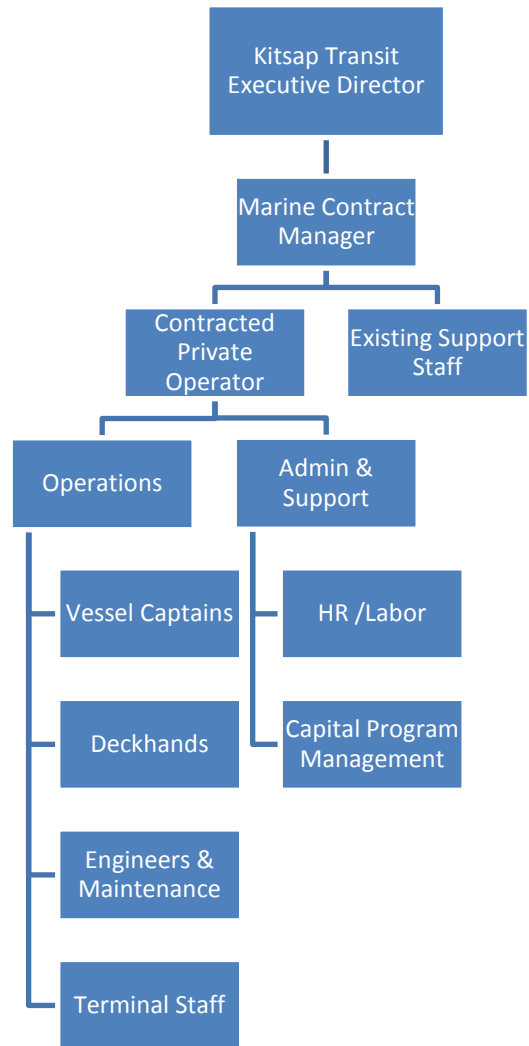


Private Contractor Provision of All Ferry Services

In this service delivery model, the bulk of the POF operations would be provided by a private contractor. KT would still be responsible for some aspects of the finance, administration and support functions through either in-house dedicated staff or with leveraged staff resources currently within KT.

As in the first option, the level of dedicated staffing necessary to accomplish the finance, administration, and support functions would be highly dependent on the amount of leveraging that can be done with existing related staff. However, the marine specific aspects would likely warrant at a minimum one dedicated staff member, with probable additional support from existing staff within KT (assuming that there is some capacity to do so).

The following organization chart provides a basic outline of how this delivery model for POF service could be accomplished. This organization has a total management and administrative staff of one dedicated staff along with additional finance, administration, and support from existing staff.

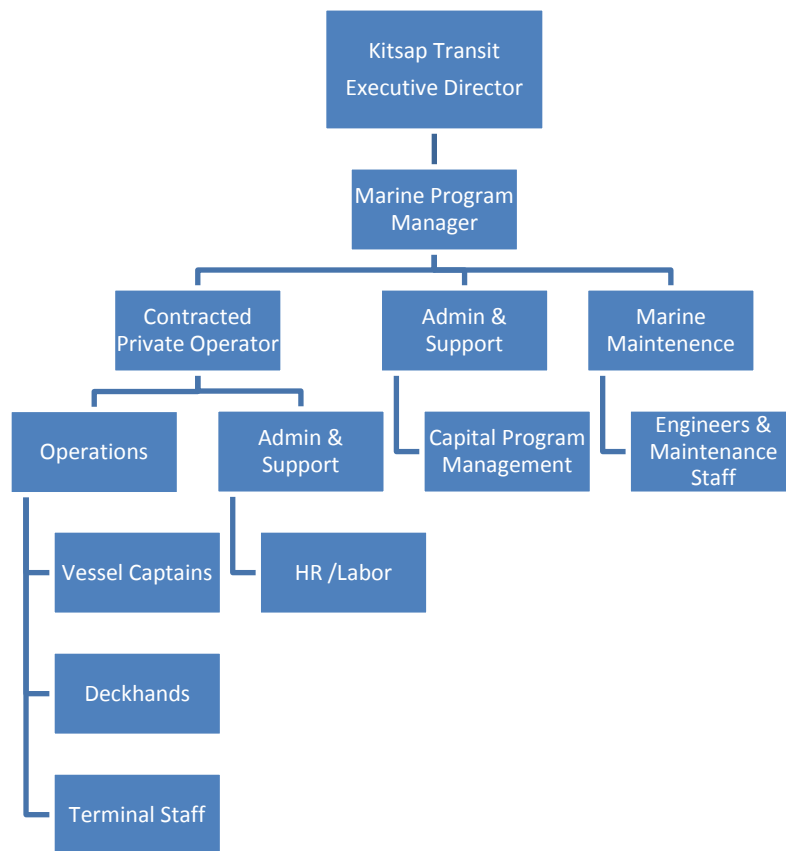


Public/Private Partnership

The organizational structure in this service delivery model is similar to the Private Contractor Provision of All Services structure. POF operations would be provided by a private contractor, with maintenance responsibilities either performed by KT or the private operator. In either scenario, KT would continue to also be responsible for some aspects of the finance, administration, and support functions through either in-house dedicated staff or with leveraged staff resources currently within KT.

KT Maintenance

The level of maintenance staff would be governed by the number of vessels and terminals being operated, but would require at a minimum a manager and appropriately licensed and qualified engineering staff for vessel maintenance, if managed in house by KT. The marine specific aspects would likely warrant at a minimum two dedicated staff members (a hands-on manager and one staff), with probable additional support from existing staff within KT to perform necessary terminal maintenance and upkeep (assuming that there is some capacity to do so).

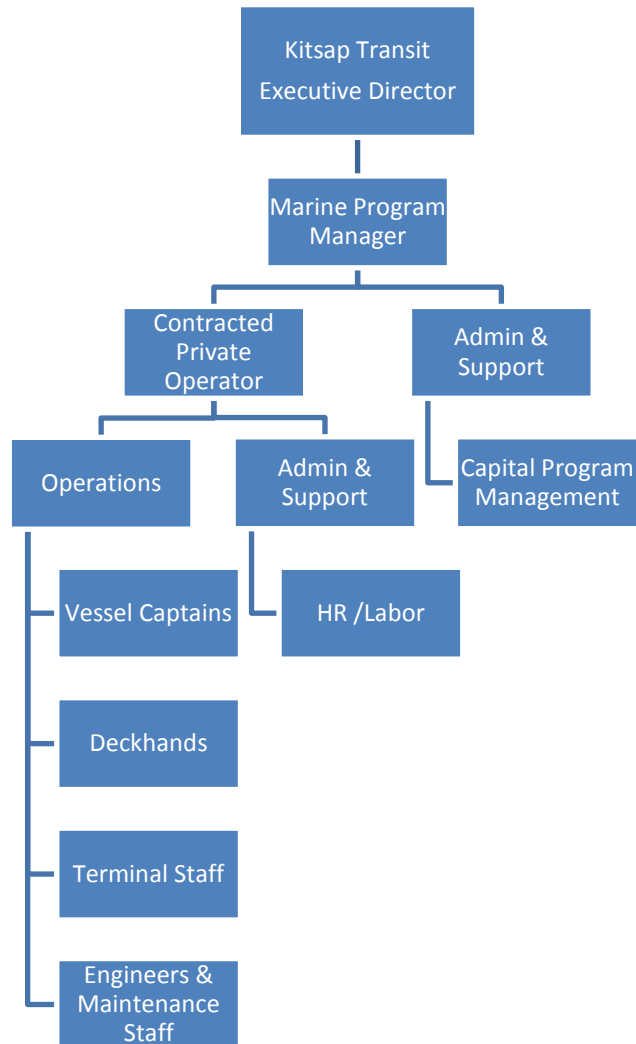




Contractor Furnished Maintenance

The marine specific aspects would likely warrant at a minimum one dedicated staff member, with probable additional support from existing staff within KT (assuming that there is some capacity to do so).

The following organization chart provides a basic outline of how this delivery model for POF service could be accomplished. This organization has a total management and administrative staff of one dedicated staff along with additional finance, administration, and support from existing staff.

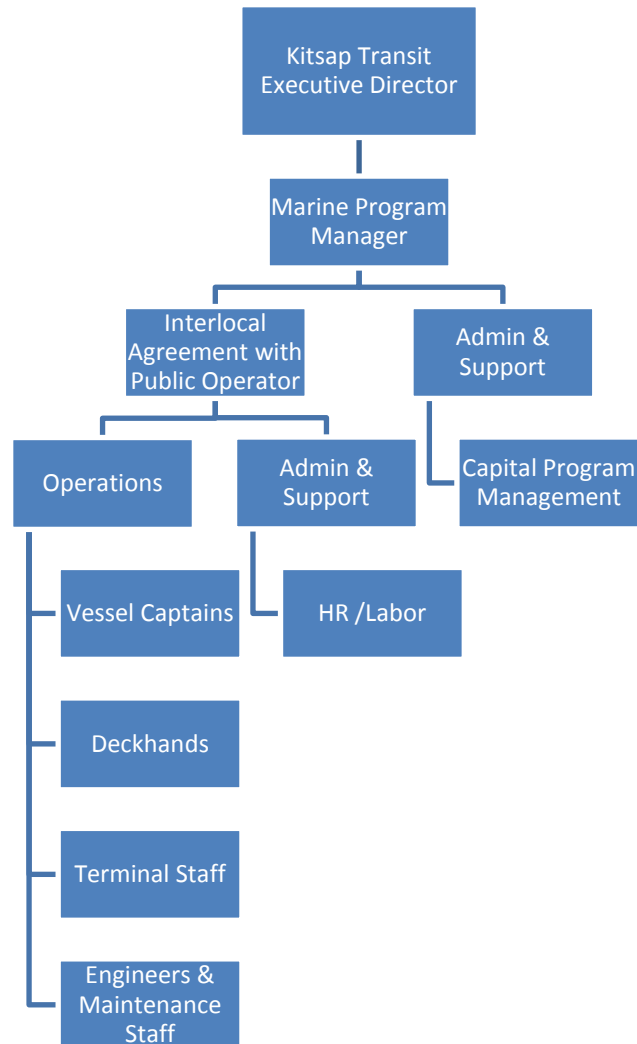


Public/Public Partnership

Similar to the second option, this service delivery model would have the bulk of the POF operations provided by another party – in this case another public agency. Also similar to the second option, KT would still be responsible for some aspects of the finance, administration, and support functions through either in-house dedicated staff or with leveraged staff resources currently within KT.

Also, as in the second option, the level of dedicated staffing necessary to accomplish the finance, administration, and support functions would be highly dependent on the amount of leveraging that can be done with existing related staff. However, the marine specific aspects would likely warrant at a minimum one dedicated staff member, with probable additional support from existing staff within KT (assuming that there is some capacity to do so).

The following organization chart provides a basic outline of how this public/public partnership delivery model for POF service could be accomplished. This organization has a total management and administrative staff of one dedicated staff along with additional finance, administration, and support from existing staff.



3 Vessel Crew Requirements and Other Operating Requirements

Operating requirements consist of regulatory requirements and best business practices of the agency. Operations require marine navigation skills and security measures performed by appropriate marine personnel for the vessel type and terminal layout.

3.1 CREW SIZE

The number of vessel crew required is determined by the local USCG, Officer in Charge, Marine Inspections (OCMI). While there is some degree of flexibility and negotiations associated with the USCG assignment of required crew there are some specific regulatory requirements and non-regulatory guidance that can be used to arrive at the most likely crew requirements. All vessels carrying passengers for hire (ferries) are required to have a USCG licensed Captain. Also, for high speed ferries, such as those envisioned for operation, USCG guidance would set the additional expectation of at least a Senior Deckhand. Additionally, for most small passenger vessels certificated under subchapter T (T-boats), a deckhand is required for each deck that is available to the passengers. In most cases, three crew members will be required. For the purposes of developing costs within the business plan, three crew members will be assumed.

3.2 CREW FUNCTIONS AND LICENSING

The Master will be required to be licensed having an active Merchant Mariner Credential (MMC) for the vessel tonnage. Although the deckhands are not required to be licensed, they are required to possess a merchant mariner's document and have some basic training in accordance with USCG Navigation and Vessel Inspection Circular (NVIC) 1-91 Recommend Qualifications for Small Passenger Vessel Deckhands. In addition, at least one of the deckhands would need to be trained as a Senior Deckhand.

3.3 MARSEC

To discuss facility security, it is necessary to provide a brief introduction to the topic of security in general terms. At any transportation facility there are security risks present, such as acts of vandalism, theft, or terrorism. For the purposes of this discussion, risk can be defined as the product of probability and consequence, with each risk element having a different likelihood of occurrence and a different consequence should it occur. For example, an act of vandalism (such as graffiti) may have a greater probability of occurrence than a terrorist act, but the potential consequences would be much less. Accordingly, the combination of both the likelihood and consequences of an event should be considered when implementing security measures aimed at

addressing individual risks. There also needs to be an attendant understanding that risk cannot typically be completely eliminated; rather the goal in implementing security measures is to reduce risk to an acceptable level and mitigate the consequences once an event has occurred.

The operator of a public transportation system should consider the appropriate levels of security to address both the protection of the facility it owns or operates and the protection of the patrons that will use the facility. The most secure facility is one that is locked up tight and does not allow access, but then a secure facility of this nature would not be a viable transportation hub designed to freely and efficiently move passengers. Therefore, the goal of an integrated facility security plan is to establish appropriate security measures that effectively addresses existing risks, but does so in a manner that allows the efficient movement of passengers. The development of a security plan, even if not required by a regulatory agency, is considered valuable as it forces the organization to consider what security risks are present in the operation, provides a single location for documentation of security measures to be implemented that all employees can access and be aware of, and it represents a best business practice reflective of a responsible operator, which will prove beneficial should an event occur.

Security measures can be subdivided into those that are appropriate for business purposes and those measures that are regulatory in nature. For the purposes of evaluating the applicable security practices and requirements in this business plan, the topic of vessel security will be addressed into the two broad categories of:

- Best business security practices
- Regulatory security requirements

While there is routinely and appropriately some overlap between regulated and non-regulated security practices, for the purposes of this plan these two categories will be addressed separately.

Best Business Security Practices

Regardless of any regulatory mandates, there are some vessel security measures that an operator of a POF service is going to want to provide. The following elements of a vessel security plan, along with a brief description of each, should be considered for implementation as best business practices:

- Ability to Lock the Vessel and Prevent Access to the Vessel when not in Operation: This includes measures to limit access to both the exterior and interior of the vessel, to protect against acts of vandalism on-board the vessel, to help keep the vessel clean, keep unwanted vagrants from obtaining access to the vessel, and eliminate risk of unmonitored persons attempting to get in close proximity to the water. This is particularly important when the vessel will be tied-up unattended during any portion of the day or night.
- Suspicious Activity Reporting Procedures: Procedures to collect and report activities of a suspicious nature.



- Surveillance System: Includes a means to provide some level of deterrence for a wide variety of potential events at the facility where the vessel will be tied up, which can also provide assistance with law enforcement investigation (particularly for occurrences of unauthorized access and vandalism), can prove useful to monitor operations, and supplements personnel monitoring.
- Law Enforcement Coordination: Because the POF operations would be conducted in multiple municipalities with different law enforcement jurisdictions and capabilities, there is a need to understand capabilities and agree upon expectation of applicable law enforcement agencies, particularly as it relates to waterborne capabilities and including the USCG.
- Vessel Lighting: A means to provide both a safety and security benefit, with appropriate lighting serving to keep vessel exterior fully visible during periods when the vessel is tied up in the dark.
- Protection of Crew Personal Affects: With crewmembers typically having some personal affects and gear, providing a means to protect their valuables may be appropriate.
- Capability to Lock/Secure Revenue Collections: If collected fares are retained on-board, measures to protect against both employee and external theft. These measures might include elements such as lockable cash boxes, safes, and appropriate operating procedures with built in accountability protections such as dual handling, signatures, and expedient and safeguarded deposits.

Regulatory Maritime Security (MARSEC) Requirements

The primary regulatory requirements placed on passenger ferries are promulgated and enforced by the USCG. The provisions of 33 CFR Part 104 contain the requirements for vessels and are applicable to any “vessel certificated to carry more than 150 passengers.” If KT operates only vessels certificated to carry 150 or fewer passengers, then these regulations would not apply. However, the vessels may operate out of a regulated facility because the Seattle POF terminal serves vessels certificated to carry more than 150 passengers. The key provisions of Part 104 include:

- Performing a vessel security assessment.
- Developing and maintaining a vessel security plan; could employ the Passenger Vessel Association (PVA) alternative security plan (ASP).
- Designating both a company security officer and a vessel security officer.
- Providing security training to all personnel, including conduct of appropriate drills and exercises.
- Implementing measures for interfacing with facilities and other vessels, including development and sharing of declarations of security when appropriate.
- Installation and maintenance of security systems and equipment.
- Implementing security measures to address access control and monitoring.
- Designating and protecting access to restricted areas.

- Implementing provisions for delivery of stores, supplies, and fueling.
- Implementing procedures for security incident response.
- Designating added measures at higher security threat levels, including potential passenger screening.

Related Vessel Security Considerations

The Seattle facility is operated under a USCG approved security plan. Assuming that the ferries operated by KT will be limited to 150 or fewer passengers, the vessels will not be subject to the security regulations found in Part 104. When calling on the Seattle facility, it may be appropriate for the vessel to comply with certain provisions of this plan. The key considerations related to the regulated facility at Seattle can be summarized as follows:

- Limitations on access to certain restricted areas of the facility or possession of TWIC cards by crew members if they need unescorted access to restricted areas on the facility
- Patron and crew compliance with existing security protocols established by King County security plan such as:
 - Access control
 - Added measures at raised MARSEC security levels
 - Monitoring and reporting

While there are no added security measures mandated for vessels making call at the regulated facility, coordination with King County would be appropriate.

3.4 MARINE NAVIGATIONAL REQUIREMENTS

All of the proposed cross-Sound routes being considered, including those from Southworth, Bremerton, and Kingston to downtown Seattle, will be subject to some unique navigational issues. The following discussion highlights those areas that should be considered.

Vessels Cross Established Vessel Traffic Lanes

Puget Sound possesses established marine highways, which govern the flow of all deep draft commercial vessels. All of the ferry routes originating in Kitsap County will cross over the dedicated vessel traffic lanes. This is the equivalent of crossing the street without any traffic signals. This creates a navigational risk that is typically quite manageable, but must be recognized. The “rules of the road” would apply in these cases, with vessel bridge to bridge radios used to agree upon crossing arrangements. As is the case with rush hour traffic, high levels of maritime traffic may affect the service delivery schedule may need to be accounted for when setting the sailing schedule by adding a time buffer to the schedule.



Provisions of the Vessel Traffic System

The proposed POF service would fall under the jurisdiction of the USCG Vessel Traffic Service. This marine equivalent of the aeronautical air traffic control system is a robust and vital marine safety system in Puget Sound.

Weather and Sea State Conditions

While Puget Sound is relatively protected compared to the ocean waters, there is still some potential for storm winds to generate sizable seas along the cross Sound routes proposed. The severity of these seas will dictate the ferries speed of advance and, with extreme weather, if to operate at all. This includes both how fast the ferry can safely travel and whether the customers are comfortable (often the vessel can safely travel in sea states much more severe than it would be comfortable for the typical customer). Accordingly, the weather will play a part in the ability to maintain the printed operating schedule. This will need to be considered both when generating the schedule and when setting customer expectations for on-time performance. In addition, the Puget Sound will occasionally have conditions of fog. Similar to heavy seas, foggy conditions will impact the crew's ability to safely keep the published schedule.

Terminal Access Coordination and Scheduling

When more than one ferry operator is operating out of a particular terminal facility, such as the Seattle POF terminal or the Bremerton Transportation Center, the dock space must be shared. Typically, commuters like to arrive at their destination enough in advance in time to make it to work on time, and have a similar arrival pattern prior to departure time at the end of the work day. This means that it is quite common for certain arrival and departure times to be more desirous than others. Consequently, whether arriving or departing, ferries are competing for the best time slots at a busy terminal location. At a minimum, the limitations on available dock space results in corresponding limits on the number and duration of vessel calls at a terminal facility. These practical limitations will have to be considered when developing the operating/sailing schedules. It is also noteworthy that the more ferry routes that wish to call at a specific destination, the challenge of coordinating arrivals and departures increases exponentially. KT plans to add routes into the single Seattle terminal; thus, there is an increased potential for vessels not being able to dock at the desired time, or perhaps even at all, unless the terminal and float are upgraded to accommodate more than two vessels simultaneously.

4 Customer Service and Shoreside Staffing

The shoreside staff of a POF system might typically be asked to perform the following functions:

- On-scene customer service and passenger guidance
- Facility and passenger safety and security
- Fare collection and safeguarding
- Crowd management and queuing
- Facility light maintenance and upkeep

It would perhaps be ideal to have terminal staff at each facility during all hours of ferry operations to perform these functions on a regular/routine basis. However, this ideal state may not be financially practical. While the functions identified above are all important and must to some extent all be performed, it is not uncommon for tradeoffs to be made as a means to reduce costs. POF service consists of a heavily commuter based ridership, with typically only a single destination. Riders typically know where they are going upon their departure from the vessel and disperse quickly upon arrival. Accordingly, the following staffing options, from the ideal to common deviations from this ideal state, have been identified. For each option accompanying tradeoffs are listed, along with the rationale for doing so.

- Staff During All Hours of Operation: This option would allow for excellent customer service; would ensure good crowd management during both vessel loading and off-loading activities; would ensure the maintenance of a clean, safe, and secure facility; and would greatly facilitate the accurate and timely collection of fares. This option would require a single staff member at each terminal location during all hours of operation. Assuming that a split shift could be applied (morning and evening commute periods), this would equate to a total of four staff members each day (one staff member at each of the four terminals being operated). This would also require a standby pool of employees that could stand-in during the absence of the regular employee.
- Only Staff the Terminal at the Originating Terminal Location: This option would staff the Kitsap terminals during the morning commute and the Seattle terminal during the afternoon/evening commute period. It would reduce the needed terminal staff by half, or at least reduce the hours worked by half (assuming that part-time employees could be employed in this capacity). It would allow the terminal staff to oversee passenger queuing and collect fares in the commute direction. It would also afford some opportunity to perform facility safety and security, customer service, and maintenance functions, at least at those facilities and during those times that the facilities are staffed (which coincides with the greatest risk of safety or security issues). Note; this option would require an alternate means to collect fares in the non-commute direction (perhaps by the vessel crews), and may not be a viable option if the terminals are regulated facilities due to facility monitoring standards imposed by the USCG.



- **Only Staff the Seattle Terminal During the Evening Commute Period:** This option would eliminate terminal staffing at all locations except the Seattle terminal, where there would be vessels leaving with multiple destinations prompting the need for both customer guidance and passenger queuing. This option would necessitate the fare collection function be routinely performed by the vessel crews. While not extensive, some time would likely need to be added to the sailing schedule in order for the crews to collect fares during the loading process. This option would also mean that any form of routine on-site passenger safety and security oversight, customer service, crowd management and queuing, and maintenance and upkeep would largely be eliminated. These functions would likely need to be shifted to the vessel crews to the extent practical and perhaps incorporated on an ad-hoc or scheduled basis. Note: an option to providing funding to King County in exchange for them performing the passenger guidance and queuing functions at the Seattle terminal may be a valid and worthy of exploring further if this option is chosen as preferred.

The staffing levels employed at the terminals speak to some extent to the type of service that is envisioned by KT. If full, customer oriented, low risk service is the goal, then the higher staffing levels are recommended. If low cost, bare-bones service is the goal, then the minimal staffing alternative would be recommended. If this latter option is chosen, then the incorporation of additional measures is recommended to offset the reduction or elimination of key functions. For example, the installation of surveillance systems would be recommended to offset the loss of on-site observations at the facilities. Some form of routine light maintenance, cleaning, and upkeep at the terminals would be recommended. The installation of way finding signage and physical guideposts or guidelines to assist with passenger queuing would also be an appropriate step.

5 Maintenance and Engineering

Approach to maintenance and engineering needs depends on the operational organizational structure identified. There are essential maintenance needs that are required for vessels and terminal infrastructure on a daily, intermediate and long-term or annual basis.

5.1 VESSEL MAINTENANCE REQUIREMENTS

Maintenance plans for leased or owned vessels would be similar. Vessel maintenance items from the least complex to the most complex include simple on-board daily maintenance, periodic maintenance, and trouble shooting and annual vessel overhaul and inspection. Descriptions of these activities follow:

Daily Maintenance

Vessel daily maintenance consists of:

- Cleaning the vessel, including fresh water wash down of exterior surfaces and windows.
- Fueling, filling of fresh water tanks, and sewage/bilge pump out.

- Performing routine maintenance on vessel equipment, resupply, and other items necessary to keep the vessel in an operable and presentable condition for its prescribed use.

Typically, these tasks would be performed by the vessel crew, preferably in the morning before the first departure, during the period between the two shifts either while docked in Seattle or after having returned to home port during the break, and then again after the last trip in the evening.

Intermediate Maintenance — Minor Repairs and Alterations and Cyclic Maintenance

- Propulsion System Heavy Oil Change: This includes changing engine oil and lube oil, as well as changing fuel and oil filters. The schedule for this type of maintenance would be based upon the number of hours between changes as determined by the engine manufacturer and vessel owner.
- Minor repairs, alterations, and preservation activities that do not require dry-docking of the boat and do not affect the status of the Certificate of Inspection (COI).

Annual Drydocking and Major Repairs — Overhauls and Ship Alterations

- Annual Vessel Dry-Docking: Annual vessel inspections, dry-docking, and USCG inspection would require each vessel to be taken out of service for approximately two weeks each year. Included in this dry-docking period is inspection and minor/major repair of systems, interior outfit, and vessel coatings.
- Propulsion System Major Maintenance: As with the heavy oil changes, the schedule for this type of maintenance is based upon engine hours. Propulsion system major maintenance items include:
 - Top End Overhaul: Includes replacement of turbocharger, water pump, and other rotating engine components as necessary.
 - Major Engine Overhaul: This is a complete overhaul of engine.
- Required or Desired Major Alterations to the Boat: Either mechanical/electrical or hull/fitting related.

5.2 TERMINAL MAINTENANCE REQUIREMENTS

Terminal facilities owned by KT would need to be maintained by KT employees, or through facilities assistance from other KT departments, via agreements with local agencies or by outside vendors or contractors as discussed below.

Terminal facilities that would be leased from others or owned by KT should include provisions for terminal maintenance from the lessor, or be maintained by KT employees, or through facilities assistance from other KT agencies, via agreements with local agencies, or by outside vendors or contractors, depending on the preference of KT and the arrangement with the lessor. No dedicated terminal maintenance staff positions are envisioned in either the near or far term. Time permitting, for KT home port terminals, the vessel maintenance staff would have the collateral duty of performing all basic preventative maintenance and light repairs. However, there is a possibility



that there could be an economy of scale savings through the hiring or contracting for a mobile maintenance resource who could be tasked with handling the minor maintenance and repair items for both boat and terminal maintenance.

If the scope of preventative maintenance or repairs exceeds the expertise of the vessel maintenance staff or optional mobile maintenance staff, the KT Maintenance Manager (working with the rest of the management staff) would arrange for preventative maintenance or repairs by others. If the maintenance or repair needs could be efficiently addressed by other KT departments or via agreements with local agencies, then those arrangements would be made, and agreements or policies would be put in place for ongoing support. If the scope of preventative maintenance or repairs exceeds the expertise of all KT and local agency maintenance assets, then the management staff would contract for assistance from commercial waterfront/marine construction and repair providers.

Some of the basic preventative maintenance and light repairs could be accomplished by the vessel maintenance staff (potential crew collateral duty).

Light Preventative and Regular Maintenance

Crew resources should be used to accomplish this either in the morning before the first trip or in the evening after the last trip at the home port terminal. Alternatives include the Mobile Maintenance Workshop or contracted services via a standing services type contract, either which could include vessel maintenance as well.

Scheduled Preventative Maintenance and Repairs

Because of their nature these services are best accomplished by a standing contract, potentially the Mobile Maintenance Workshop, which could be contracted or via new in-house Kitsap County resources.

Heavy Maintenance and Repair

Major repairs, maintenance and upgrades to terminals should normally be designed (using the Maintenance and Repair Design and Support on-call contract(s)) and then openly competed.

5.3 SPARE PARTS AND SUPPLIES LOGISTICS (VESSELS AND TERMINALS)

Spare parts and equipment will need to be procured, organized and stored in an appropriate location close to wherever the prescribed maintenance action will be carried out for each class of boat in the system.

Spare Parts and Supplies Storage Locations and Logistics

A lockable storage shed or storeroom at the home terminal will be required to store consumable supplies (e.g. bathroom and general cleaning supplies).

Spare Equipment Resources and Logistics

To avoid the potential loss of service on any given route due to major equipment casualties and to decrease down-time of any given vessel (with consideration of availability of the backup vessel(s)), it is important to procure spare engines/waterjets and generator sets for each class of vessel and these spares will need to be strategically stored.

The challenge with this feature of maintenance and repair is that it will be necessary to develop a strategy for removal of these components while the vessel is in the water. Engines and generator sets can be removed via landside or barge based cranes, assuming that access ports on the main deck are available and accessible. Waterjets can be removed via similar based cranes and through use of a work float. The equipment can then be transported to a facility for overhaul, while the spare can be reinstalled, allowing the vessel to return to immediate service.

5.4 VESSEL MAINTENANCE EXECUTION PLAN

Vessel maintenance and repairs would be carried out by the combined efforts of Kitsap County employees (deck hands) and by outside vendors and marine repair facilities. Maintenance cost analyses are included in Implementation Phasing and Financial Plan.

Most daily preventative maintenance and light repairs would be accomplished by the deck hands working on the vessels daily under the direction of the KT Maintenance Manager (the Maintenance Manager would also serve as the Port Engineer for all three homeports). However, because there will be at least four boats (one standby boat) and three terminals, there is a possibility that there could be economy of scale savings through the hiring or contracting for a mobile maintenance resource who could be tasked with handling the more major maintenance items for both boat and terminal maintenance. This alternative is even more viable considering that the crews might not have much time for maintenance. The financial analysis of this option is included in the operations section. While this option as a budget item will likely cost more on an annual basis, it is likely that there would be an improvement in quality of the larger maintenance functions, thus an improvement in life cycle performance and life cycle cost. The relationships are depicted in the organizational chart attached to this report.

Regular overhauls and drydocking periods will occur on a cycle at least dictated by the COI for the boat, and often will occur annually or upon occurrence of a major casualty.

Daily Maintenance Plan

Fueling, Fresh Water, and Sewage Pump-Out Plan:

- Bremerton Vessel: The A-Float in Bremerton has been recently upgraded to include fueling, shore power and fresh water at three of the berths (Berths 2, 3 and 4) and sewage pump out at Berth 3. The Bremerton boat can accomplish any of these functions at its normal berth (Berth 3) at any time it will not interfere with operations.
- Kingston Vessel Senior Deckhand: Water, sewage pump out and refueling are available at the Kingston Marina; however, these services are available only from 8:00 AM through 4:45 PM each day. The Kingston route is the longest of all three routes and its vessel will consume



about twice the fuel of the Southworth Vessel. The RP1 holds 800 gallons of fuel. If the 35 minute route plan is chosen, at 75 gallons per one-way trip, the Kingston vessel would need to refuel at least twice per day (assuming 10 round-trips per day).

- Southworth Vessel: If the truck refueling option is used and these pier-side utilities are not added to the new Southworth facilities, fresh water and bilge/sewage pumping requirements will need to be addressed for the Southworth boat, probably via a deadhead trips to the A-Float in the evening or to the King County Marine Services Maintenance Barge (KCMB) during the split shift break or via some other commercial resource. Since this route is the shortest of all three routes, re-fueling could be accomplished when all three services are provided, probably on a daily basis.
- Backup Vessel: It is expected that the backup vessel will be moored at the A-Float in Bremerton. Maintenance would be accomplished on the same cycle and using the same methods as those for the Bremerton vessel.
- Wash Down Plan: Daily wash down of exterior surfaces and especially windows is one of the processes that influences life cycle performance of the hull and fittings and has a direct effect on rider experience. It is important to have a fresh water source to accomplish these wash downs. Also, depending on the hardness of the water at each site, it has been found necessary to use de-ionized water for window wash down. For example, the North Bay Ferry Maintenance and Operations Facility has a large reverse osmosis unit and a 1,000 gallon reserve tank for de-ionized water just for window washing. Hard fresh water will leave large amounts of scale on the windows, which is very hard to remove. It is best that wash down be accomplished at least in the evening after the last trip, so that the exposure of the exterior surfaces to the corrosive nature of the salt residue is reduced throughout the night.
- Other Dailies: Inspections, daily servicing and restocking of supplies can be accomplished at the home port terminal, in the morning, before the first trip, and in the evening after the last trip.
- Intermediate Maintenance — Minor Repairs and Alterations and Cyclic Maintenance: It is recommended for all KT vessels, that at start up, the KCMB be utilized for these services. To facilitate this, it is recommended that a Joint Use Interagency agreement be established between the two agencies.

Annual Drydocking and Major Repairs — Overhauls and Ship Alterations

All vessels will need to have annual drydocking and inspection to maintain USCG COI requirements. For KT owned vessels, these services should be put out for competitive bid. For leased vessels, the details of achieving these services will be established in the lease agreement. It will be important to phase these overhauls so that backup vessels are available for any of the affected routes.

5.5 TERMINAL MAINTENANCE EXECUTION PLAN

This section summarizes recommendations based on best industry practice. Actual staffing levels and duties could be modified based on wording in position descriptions or, if there is a union agreement, based on future collective bargaining.

Facilities maintenance functions are broken down into three categories below:

Light Preventative and Regular Maintenance Plan

Performed by crew or mobile maintenance crew:

- Safety and security inspections
- Operation and inspection of terminal platform height adjustment equipment and fittings
- Changing light bulbs
- Periodic wash down of all surfaces

Scheduled Preventative Maintenance and Repair Plan

Performed by mobile maintenance crew or by agreement/contract:

- Lubrication of locks and hinges
- Greasing equipment
- Repair of mooring lines and fittings
- Repair of lifelines and fittings
- Inspecting fire safety equipment
- Minor painting and preservation
- Minor piping and electrical repairs
- Annual inspection of voids

Heavy Maintenance and Repair Plan

Accomplished by other KT departments, via agreements with local agencies or by outside vendors under contract:

- Large scale painting or preservation projects
- Inspection and repair of terminal freeboard height adjustment equipment and fittings
- Replacing light fixtures or re-wiring facilities
- Major piping repairs or replacements
- Drydocking of floats
- Diver inspections
- Structural repairs to floats, knees, fenders, pilings, gangways, ramps and platforms



5.6 MAINTENANCE AND REPAIR DESIGN AND SUPPORT

It is recommended that on-call contracts be awarded for marine design services to provide design support for overhauls and vessel alterations.

5.7 STAFFING AND CONTRACTING REQUIREMENTS

The consultant believes that the best alternative for startup would involve contracted services for both vessel crews and maintenance functions. As the system matures and grows, contracted functions could be replaced by key staff as determined by trends in the economic metrics for the system. Experience with the San Francisco Bay Area Water Emergency Transportation Authority (WETA) start up and transition plan and actual implementation of their system will serve as one example of a template for these requirements. WETA, when it was still the WTA, was marginally staffed (approximately three personnel), and most services and staff functions were contracted out. Recently, with completion of construction of the South San Francisco terminal and with consolidation of the Vallejo and Oakland routes under WETA, their staffing levels have grown significantly (now at 11 personnel). Procurement processes need to ensure compliance with various grant funding management criteria. KT's procurement processes are already mature, so their transition should be easier, however, the increased workload in moving from one route to four routes represents a quantum leap in complexity and thus an increased need for operations funding for staffing and consultant support. Using WETA experience as a benchmark, this would translate into 3 to 4 times the current budget for staffing and consultant support.

6 Service and Operating Schedules

6.1 SERVICE FREQUENCIES

The proposed service includes six round-trips for each route. This includes three round-trips during the AM peak period and three during the PM peak period.

Demand

Projected demand for the three routes is identified below. These projections were built for a 6 round-trip scenario and a 12 round-trip scenario. The projections show that with increased service demand also increases for that service. While the 6 round-trip scenario would be the recommended schedule upon start up, additional service provided in the long-term, once the service is established would likely bring more ridership.

Table 6-1: Peak Sailing Ridership Projections (ridership based) - 2013

Scenario	Bremerton	Kingston	Southworth
6 RT/Day	36-128/per sailing	71-178/per sailing	59-147/per sailing
12 RT/Day	29-173/per sailing	NA	NA

Crossing Times

Crossing times proposed for the three routes are outlined below. The crossing times were identified after analysis of competitive schedules compared to the alternate route, while maximizing fuel economy and maintaining three round-trips within the AM and PM peak periods. Fuel utilization comparisons by route can be found in the Task 5 report. The proposed crossing times, as outlined below, include approach and landing time. Dwell time, as discussed below, is in addition to crossing times (refer to Table 6-2):

Table 6-2: Crossing Times

Route	Crossing Time Proposed (Min.)	Dwell Time (Min.)	One-way Round-trip
Bremerton	28	7	35
Kingston	33	7	40
Southworth	23	7	30

Dwell Times

Dwell times have been assumed at 7 minutes for each location. This time allows for loading and unloading of passengers. Approach and landing time has been figured in the crossing time, as outlined above.

Proposed Schedules

Schedules proposed for the routes include sailing schedules, tie-up time, fueling and daily maintenance/start-up and shut-down procedures prior to and at the completion of each shift. The schedules were designed to work with an 8 hour day of split shift for vessel crew. Both the Bremerton route and the Kingston route will require overtime, with Bremerton at just over 8 hours at 8.5 and Kingston at 9.5 hours. The proposed schedules were designed to work around the existing King County Water Taxi schedules for their routes serving Vashon Island and West Seattle. This is an important consideration as Pier 50 will only have berthing for two vessels until replacement of their existing float, estimated for approximately 2020.



Table 6-3: Recommended Bremerton to Seattle Schedule (approx. 35 minute route)						
Bremerton			Seattle (Pier 50)			Crew Hours Required
Arrive Bremerton	Dwell Time (Min.)	Depart Bremerton	Arrive Seattle	Dwell Time (Min.)	Depart Seattle	
Morning						
-	-	5:45	6:13	7	6:20	4.5 Hours (5:25-9:55)
6:48	7	6:55	7:23	7	7:30	
7:58	7	8:05	8:33	7	8:40*	
8:40 Leave Seattle for Fueling in Bremerton						
9:08 Arrive in Bremerton, Tie-up and Fuel						
9:15 Fueling Begins						
9:40 Complete Fueling						
Afternoon						
-	-	3:25	3:53	7	4:00	4 Hours (3:05-5:05)
4:28	7	4:35	5:03	7	5:10	
5:38	7	5:45	6:13	7	6:20	
6:48 (Tie-up)						
Total Crew Hours - Calculation includes 20 minutes for start-up activities and approximately 15 minutes for shutdown activities and assumes daily fueling.						8.5 Hours

Table 6-4: Recommended Kingston to Seattle Schedule						
Kingston			Seattle (Pier 50)			Crew Hours Required
Arrive Kingston	Dwell Time (Min.)	Depart Kingston	Arrive Seattle	Dwell Time (Min.)	Depart Seattle	
Morning						
-	-	5:40	6:13	7	6:20	5 Hours (5:20-10:20)
6:53	7	7:00	7:33	7	7:40	
8:13	7	8:20	8:53	7	9:00*	
*9:00 Leave Seattle for Fueling at Harbor Island (deadhead)						
9:10 Arrive for Fueling						
9:35 Leave Fueling						
10:08 Arrive in Kingston, Tie-up						
Afternoon						
-	-	3:20	3:53	7	4:00	4.5 Hours (3:00-7:30)
4:33	7	4:40	5:13	7	6:20	
5:53	7	6:00	6:33	7	6:40	
7:13 (Tie-up)						
Total Crew Hours - Calculation includes 20 minutes for start-up activities and approximately 15 minutes for shutdown activities and assumes daily fueling.						9.5

Table 6-5: Recommended Southworth to Seattle Schedule (30 minute route)							
Southworth			Seattle (Pier 50)			Crew Hours Required	
Arrive Southworth	Dwell Time (Min.)	Depart Southworth	Arrive Seattle	Dwell Time (Min.)	Depar Seattle		
Morning							
-	-	6:00	6:23	7	6:30	3.5 Hours (5:40-9:10)	
6:53	7	7:00	7:23	7	7:30		
7:53	7	8:00	8:23	7	8:30		
8:53 (Tie-up)							
Afternoon							
-	-	3:05*	4:10	10	4:20	4.5 Hours (2:40-7:10)	
4:43	7	4:50	5:13	7	5:20		
5:43	7	5:50	6:13	7	6:20		
6:43 (Tie-up)							
*3:05 Leave Southworth to Fuel (Deadhead)							
3:28 Arrive to Fuel (Harbor Island)							
4:00 Leave Fuel at Harbor Island							
4:10 Arrive at Seattle							
4:20 Leave Seattle for Southworth							
Total Crew Hours - Calculation includes 20 minutes for start-up activities and 20 minutes for shutdown activities and assumes daily fueling						8	

6.2 NON-REVENUE OPERATIONS

In addition to scheduled, revenue generating service, there are operational necessities that require crew time and scheduling to be accomplished within minimal to no schedule interruption. As touched upon above in the proposed service schedules, these regular, intermediate and annual maintenance, fueling, as well as regulatory inspections and coordination.

Fueling

Fueling is anticipated to occur on a daily basis for each route. Fueling time has been built into the schedule as appropriate. The schedules above represent fuel taken at Harbor Island for the Southworth and Kingston routes. Bremerton will fuel at the Bremerton float once improvements underway are completed in the fall of 2014. Deadhead trips or trips without passengers will be taken in order to fuel the vessel.

In the long-term, it may be considered to put fueling infrastructure in place at the Kingston POF terminal to enhance efficiencies and reduce crew hours and overtime needed. Long-term fueling

for the Southworth route is proposed at Harbor Island. Bremerton fueling will remain in Bremerton at the A-float as that is the most efficient scenario.

Maintenance

Differing levels of maintenance will occur which include daily, intermediate and annual or major repairs. Some of the daily maintenance activities will be carried out by the crew at the beginning and end of their shift. Twenty minutes has been accounted for on the front and back end of the crew shift. Additional daily maintenance activities will need to be completed during vessel tie-up periods and will likely be performed by a marine engineer.

Inspections and Training

Inspections and Training will occur on an intermittent basis, while emergency drills may be completed weekly. The occurrence and crew time requirements are summarized below.

- Drills: Weekly in occurrence, opportunity to accomplish within shift and outside of service window on the Bremerton and Southworth route, with additional crew time being required to accomplish on the Kingston route.
- Training: training would likely be on an annual or semi-annual basis and would require additional crew time.
- USCG Inspections: Inspections are intermittent and would likely be accomplished by extending the crew hours on that day.
- Local Fire and Police Coordination: Local coordination is sporadic and may be accomplished within the crew hours/service window.



6.3 MULTI-MODAL CONNECTIONS

Multimodal connections are discussed in the Task 4 report. However, recommended coordination as it related to proposed schedule and existing KT service are outlined below.

Recommended Coordination

Kitsap Transit

The proximity of the Bremerton POF to the Bremerton Transportation Center (BCT) provides ease of transit connectivity for passengers. There are nine KT routes that serve the BCT (11, 15, 20, 21, 22, 24, 25, 26 and 29). There is also a connecting route to Mason Transit. In general, routes serving the BTC operate under one-hour headways during non-peak times, with more frequent service provided during the AM and PM travel periods. Between all of the routes, the availability of buses to another transfer center is good. However, buses generally operate during the weekdays from 6:00 am to 9:00 pm so most routes will not be able to connect POF passengers to the first ferry run leaving Bremerton at 5:45 am (most KT routes first arrive at the BCT between 6:00 and 6:10 am). Routes 11 and 15 are exceptions as they have an earlier run, but that would have the bus rider arrive to BCT almost an hour before the POF is proposed to leave Bremerton on its first run.

For Southworth and Kingston, the transit service is much less frequent. In some instances, the timing of the KT route arriving to or departing from the ferry terminal only misses the ferry arrival/departure by a few minutes. In other cases, there are some considerable gaps in transit service. In Table 6-6 below, the red numbers indicate where there is a negative gap and the ferry and transit connections can't be made, and the green is where there is time to make the connections.

For Kingston, there are only two POF departures to Seattle (on the AM and one in the PM) where the transit connection will drop the POF passenger off at the ferry terminal within 10 minutes of the ferry departure. In other instances, there is no service or there is a wait time longer than 20 minutes. There is only one POF arrival to Kingston from Seattle where a passenger could take the bus within 10 minutes of the ferry arrival.

For Southworth, there is only one arrival (first ferry departure) where a person can take the bus to the ferry terminal and wait 10 minutes or less. All other wait times are 35 minutes or greater based on the bus schedule. For persons looking to depart the ferry and catch the bus, there are no connections in the morning and wait times of longer than 30 minutes in the afternoon. If you look at the schedule, many of these missed connections are only by a few minutes.

Table 6-6: Kitsap Transit Weekday Service to Kingston Ferry Terminal

Ferry Arrive Kingston	Route 91 Departure	Route 92 Departure	Ferry Leave Kingston	Route 91 Arrival*	Route 92 Arrival
--	--	--	5:40	5:45 (-5 min) first arrival, no prior service	--
6:53	7:00 (+7 min)	--	7:00	6:55 (+5 min)	--
8:13	7:42 (-31 min)* next departure in afternoon at 3:30	9:00 (+47 min)	8:20	No service	--
--	--	--	3:20	3:25 (-5 min) next arrival at 4:30 (+70 min)	3:00 (-20 min) next arrival at 4:00
4:33	4:30 (-3 min) next departure at 5:00 (+27 min)	--	4:40	4:30 (+10 min)	5:00 (+20 min)
7:13	7:00 (-13 min) next departure at 8:00 (+47 min)	--	--	--	--

Notes:

Route 92 only has service from ~ 9 AM to 4 PM

*Arrival times to the Kingston Ferry Terminal are approximate as the bus will depart the Bainbridge Island Ferry Terminal after the WSF ferry arrives and the passengers have loaded before starting the route to Kingston.

Table 6-7: Kitsap Transit Weekday Service to Southworth Ferry Terminal

Ferry Arrive Southworth	Route 85 Departure	Route 86 Departure*	Ferry Leave Southworth	Route 85 Arrival	Route 86 Arrival
--	--	--	6:00	5:50 (+10 min)	--
6:53	--	6:50 (-3 min) next departure in afternoon at 2:00	7:00	6:33 (+27 min)	6:25 (+35 min)
8:13	--	--	8:00	--	--
--	--	--	3:05	--	3:55 (+70 min)
4:43	4:40 (-3 min) next departure at 5:35 (+52)	4:40 (-3 min) next departure at 5:35 (+52)	4:50	--	4:30 (-20 min) next arrival at 5:30 (+40 min)
5:43	5:35 (-8 min) next departure at 6:15 (+32)	5:35 (-8 min) next departure at 6:15 (+32)	5:50	--	5:55 (-5 min) next arrival at 6:55 (+65 min)

Notes:

Route No. 85 schedule appears to provide one way service (AM from Mullenix PR to ferry and PM from ferry to Mullenix PR).

Departure times from the Southworth Ferry are approximate. The bus will depart the terminal after the WSF ferry arrives, and the passengers have loaded.



The bus schedules and proposed ferry schedules were written independently and need to be integrated to develop schedules with improved connections.

King County Metro Transit

The King County Metro bus schedules are not coordinated with the proposed POF ferry schedule; however frequent and consistent service is provided within close proximity to the terminal and does not require improvement.

Kitsap Transit Foot Ferry

KT provides foot ferry service between Bremerton and Port Orchard on weekdays and Saturday and KT Foot Ferry service between Bremerton and Annapolis on weekdays. For both routes, the foot ferry arrives to and departs from Bremerton at the Bremerton Ferry Terminal.

The following table compares the weekday arrival and departure times of the foot ferry between Port Orchard and Annapolis in relation to the proposed POF arrival and departure times from the Bremerton Ferry Terminal. While we have looked at how these services complement each other, no significant ridership is assumed from this mode.

Table 6-8: Kitsap Transit Weekday Service to Bremerton Ferry Terminal

Ferry Arrive Bremerton	Foot Ferry Departure to Annapolis	Foot Ferry Departure to Port Orchard	Ferry Leave Bremerton	Foot Ferry Arrival from Annapolis	Foot Ferry Departure to Port Orchard
--	--	--	5:45	--	5:42 (+3 min)
6:53	6:52 (-1 min) next departure at 7:07 (+14 min)	6:45 (-8 min) next departure at 7:15 (+22)	6:55	6:50 (-5 min) next departure at 7:05 (+10 min)	6:42 (+11 min)
7:58	7:22 (-36 min) next departure not until 3:25	8:15 (+17 min)	8:05	7:50 (-15 min) next departure not until 3:37	7:42 (+23 min)
--	--	--	3:25	--	3:12 (+13 min)
4:28	4:25 (-3 min) next departure at 4:50 (+22 min)	4:45 (+17 min)	4:35	4:22 (+ 13 min)	4:12 (+23 min)
5:38	1720 (-8 min) next departure at 1800 (+22 min)	0545 (+7 min)	5:45	5:25 (+ 20 min)	5:42 (+3 min)

7 Fare Collection Plan

7.1 APPROACH AND METHOD (ON BOARD AND SHORESIDE)

The purpose of this task is to identify fare collection options to be considered for KT ferry services, focusing on key goals and objectives, the needs of riders, current attributes of cross-sound fare collection, available technologies, and what is practical to implement given real-world terminal and other constraints.

After presenting goals and objectives of the fare collection plan, this section reviews the current fare environment, presents requirements for three primary fare collection methods (ORCA, ticket vending machines, and cash, as well as a future mobile ticketing option), presents options for fare products, and pricing, and a high-level concept of operations, followed by a summary of recommendations.

7.2 PRIMARY GOALS AND OBJECTIVES

The primary goal of the KT POF fare system is to provide convenient and equitable fare collection options for customers that encourage ridership, minimize vessel loading and turn-around time, and are efficient to operate and maintain. Key objectives include:

- Provide an Efficient and Cost Effective Fare Collection System: From a customer perspective, a fast, efficient ferry system that competes (time- and price-wise) with other modes is important. From an operations perspective, the service must be efficient and cost effective in order to be sustainable.
- Provide Fare Products and Pricing to Serve All Customer Markets: Different customer markets have different requirements for fare products and different price sensitivities. Commuters and other frequent riders, in addition to being price sensitive, are usually time sensitive and demand an efficient and reliable fare system. Occasional riders (e.g. tourists and other infrequent travelers) are typically not as sensitive to price as commuters and are more interested in convenience and easy to understand fare options. Additionally, fare products and pricing must offer equitable options for low-income riders.
- Provide Fast and Efficient Boarding: A key component of operating efficiency is rapid passenger loading/unloading, both in terms of minimizing staff requirements to validate passenger fares and also reduce dwell times at the terminals.
- Integrate as Appropriate with Other Modes, Technologies, and Agencies: Where appropriate, the fare collection system should support door-to-door pricing of a trip and integrate with other fare collection technologies used on connecting services.
- Provide Appropriate Infrastructure: Terminal infrastructure is a key determinant of what fare collection technologies may be most appropriate—technologies deployed at a large terminal such as Bremerton may be different than those at either an isolated dock or shared terminal. The fare collection system must be flexible enough to work with different terminal infrastructure.



7.3 CURRENT FARE ENVIRONMENT

The current ferry fare environment in the central Puget Sound area is characterized by three existing services:

1. Washington State Ferries (WSF) auto ferries offer service between Bremerton and Bainbridge-Seattle, Fauntleroy-Vashon, Fauntleroy-Southworth and Southworth-Vashon, and Kingston-Edmonds.
2. The King County passenger-only water taxi service that operates two routes from Pier 50 in Seattle to Vashon Island and West Seattle.
3. KT currently operates a foot ferry that serves the Port Orchard Ferry Dock, Bremerton Ferry Dock, and Annapolis Ferry Dock and Park & Ride using the same fares charged for transit service.

Additionally, KT provides connecting bus service on the west side, and King County, Community Transit, and Sound Transit provide connecting bus and rail services on the east side.

WSF Fare Environment

WSF's policy is to collect a round-trip fare for passengers (whether walk-ons or vehicle-based) when traveling in the westbound direction, i.e., collect fares at Seattle, Fauntleroy, and Edmonds, but not at Bremerton, Bainbridge or Kingston.

Bremerton-Seattle, Bainbridge-Seattle, and Kingston-Edmonds are all considered central sound fares, and for passengers are priced full fare at \$8.00 for adults and \$4.00 for reduced (senior, disabled, youth) for the round-trip. Frequent riders on these routes also have the option of purchasing an unlimited ride monthly pass for \$103.20, or 10 round-trip rides for \$64.50. For a regular commuter, the pass is the most economical option with a break-even of approximately 13 round-trips.

The Southworth-Fauntleroy route is priced at \$6.25 full fare for adults and \$3.10 for reduced fares (round-trip). On this route, the monthly pass is priced at \$80.80 and 10 round-trip rides are priced at \$50.50. As with the central sound routes, the monthly pass is the most economical option for most daily commuters.

In terms of passenger fare media, WSF offers two options:

1. Wave2Go tickets and passes for single-ride, multi-ride, and WSF passes that can be visually inspected and also have a bar code for scanning. These can be purchased online, at staffed booths, and at kiosks. Online and kiosk purchases are only for full adult fares as these distribution methods do not have the ability to verify eligibility for reduced fares. Only credit cards are accepted for online and kiosk sales.
2. Regional ORCA smart cards that can be loaded with electronic funds and used to pay the cash-equivalent fare, WSF monthly passes that can be electronically stored on the cards, and most recently 10-ride products that can also be stored on the ORCA card (note that WSF

does not participate in the Puget Pass program). A review of recent sales information¹ shows WSF sells approximately 3,300 WSF central sound monthly passes on ORCA (all central sound routes combined), and about 135 Southworth-Fauntleroy WSF monthly passes.

King County Fare Environment

King County Water Taxi fares are all one-way and are collected at Seattle for travel in the westbound direction, and Vashon Island and West Seattle for travel in the eastbound direction.

King County has three basic classifications of fares: Adult, Senior/Disabled, and Youth. Unlike WSF, however, King County prices its senior/disabled and youth fares differently and also provides a discount to users of ORCA cards over the cash-equivalent fare price for Adult and Youth fares. King County one-way fares are shown in Table 7-1.

Table 7-1: Water Taxi fares

Classification of Fare	Seattle-Vashon		Seattle-West Seattle	
	Cash or Ticket	ORCA	Cash or Ticket	ORCA
Adult	\$5.50	\$4.75	\$4.75	\$4.00
Senior/Disabled	\$2.50	\$2.50	\$2.00	\$2.00
Youth	\$5.50	\$3.75	\$4.75	\$3.00
Child (5 and under)	No Charge	No Charge	No Charge	No Charge

Note that the equivalent one-way adult bus fare from Vashon to Seattle is \$5.10 (half the cost of the WSF round-trip fare of \$5.20 plus a one-zone King County peak fare of \$2.50), and the equivalent one-way bus fare from West Seattle to Seattle is \$2.50 (one zone peak).

Fares for the King County service are purchased and collected in three ways:

1. By using the regional ORCA card. Cards are scanned by a handheld reader at the time of boarding using the same equipment KT uses for its current foot ferry service.
2. By purchasing a ticket at a ticket vending machine at the terminal (credit and debit card only).
3. By paying exact fare cash at the time of boarding using a portable farebox that can be wheeled off the vessel to the loading area.

Kitsap Transit Fare Environment

KT collects one-way fares on its fixed-route bus services, as well as on its foot ferry services between Bremerton and Port Orchard, and Bremerton and Annapolis. KT accepts cash fares, as well as a KT-specific monthly pass and the regional PugetPass. The KT Pass, Puget Passes, and the Regional Visitor Day Pass (a demonstration program) are only available on ORCA. Transfers are permitted between bus and foot ferry services.

¹ Joint Board Program Management Report, 4th Quarter, 2013

Table 7-2: Kitsap Transit Fares

Classification of Fare	One-Way Cash	Monthly Pass	PugetPass	Regional Visitor Day Pass
Full Fare	\$2.00	\$50.00	\$72.00	\$9.00
Reduced Fare	\$1.00	\$25.00	\$36.00	N/A

April 2014 ridership data for KT showed approximately 255,000 boardings on fixed route buses, and 40,000 boardings on the foot ferry service. Of these, approximately 75 percent were using ORCA and 25 percent using cash, transfers, or other non-ORCA media.

7.4 ORCA FARE INTEGRATION

The ORCA program, initially deployed in the late 2000's, is now considered to be in a fully rolled-out state, and, at 75 percent utilization, KT has one of the highest ORCA adoption rates in the region (by comparison, King County Metro has about 65 percent utilization of ORCA). Given these rates and the overall maturity of the program, integration with ORCA is a significant component of the POF fare collection strategy. As KT is already a participant in the ORCA program, the technical integration is relatively straightforward. The larger question is the mix of offered fare products and pricing that will best support POF customers.

Fixed route bus and foot ferry utilization of ORCA for the month of April, 2014 is as follows:

Table 7-3: Kitsap Transit Ridership

ORCA Product	April 2014 – Bus		April 2014 – Foot Ferry	
	Boardings	% of Total ORCA	Boardings	% of Total ORCA
KT Monthly Pass	154,812	81%	26,567	89%
Puget Pass	7,090	4%	311	1%
Stored Value	29,988	16%	3,101	10%

By far, the dominant product used is the \$50 KT monthly pass versus the \$72 Puget Pass, suggesting that current riders are primarily commuters or frequent riders that use KT bus services versus connecting to regional King County, Community Transit, or Sound Transit services across the Sound, as evidenced by the relatively low proportion of Puget Passes (riders connecting to these services would generally find that the Puget Pass is the most economical alternative).

Since WSF does not participate in either the KT or Puget Pass programs, it is not readily feasible to determine how many of the above boardings also involve a WSF connection. There is no readily accessible data that links trips made using a WSF fare product on the east side (where WSF fares are collected) with the use of a KT fare product on the west side.

King County's Vashon Island service exhibits similar characteristics in that it has very high ORCA use with very little single fare purchase activity, representative of riders that are primarily commuters or regular riders. By contrast, the West Seattle service has relatively low ORCA utilization (informally estimated at 20 or 30 percent overall) likely due to the high proportion of tourist and recreational traffic on that route and availability of good (and lower cost) bus service to and from West Seattle.

Actual processing of ORCA cards can be done using two means: handheld portable fare transaction processors, and stand-alone fare transaction processors. Both are viable technologies for ferry operations, and KT, King County, and WSF are currently using portable fare transaction processors. Stand-alone fare transaction processors have been used successfully in ferry service applications such as some of the San Francisco Bay Area ferry operations; however, this technology requires permanent placement on the float along with wired power and communications, which to-date has proven to be impractical at both Pier 50 and the Bremerton float.



Figure 7-1: Portable (handheld) fare transaction processor used by KT and WSF for ferry fare collection



Figure 7-2: Stand alone fare transaction processor used by Vallejo Ferries in the San Francisco Bay area (similar to the ORCA ones used by Sound Transit).

7.5 TICKET VENDING MACHINES

While ORCA penetration rates are very high for KT customers, other methods of fare collection are necessary to support infrequent travelers and visitors who will not have ORCA cards. As noted previously, both King County and WSF offer some sort of ticket vending machine to allow customers to pre-purchase single-ride fares. The specific machines used by King County are modified Parkeon units, similar to ones typically used in parking applications where the person purchases parking and leaves the receipt on the dash.



Figure 7-3: King County Parkeon Machines at Pier 50

Figure 7-4: Ticket issued by the King County TVM

These machines, purchased through a City of Seattle contract (and not FTA compliant), are relatively low cost (approximately \$10,000 each), are suitable for direct outdoor installation, and require no hard-wired infrastructure. Solar cells and a rechargeable battery are used to provide power (though on cloudy days the battery sometimes loses charge and needs to be swapped out), and cellular communications are used to transmit data. King County operates two units at Pier 50, two at West Seattle, and one at Vashon Island (due to the low use of single fares noted previously). VISA, MasterCard and Discover cards are accepted; cash is not accepted due to the inability of these machines to provide change.

A drawback of these machines is that they can only sell a maximum of five ticket types² four of which are already being used by King County. This means it would likely be infeasible to use those same machines to sell KT products, as at a minimum both adult and senior/disabled (and possibly low income) fares would need to be sold, possibly with different pricing for different routes. As well, Pier 50 terminal agent staff noted the machines are confusing for customers, in that they operate differently than the parking machines they closely resemble.

In parking operations, customers insert their credit card first; then choose the amount of time they wish to purchase. The ferry ticket machines operate in the opposite manner—the customer first has to choose the route and then pay, which customers find counterintuitive. There are instructions, but they are not immediately obvious to the customer and the monochrome display is difficult to read. This results in many instances where the customer ends up purchasing a Vashon Island fare (the default fare) instead of a West Seattle fare, thus over-paying.

² As part of a separate project for King County, IBI Group has been investigating the technical details and limitations of these units and has confirmed with the manufacturer the limitations of number of products that can be sold.



Figure 7-5: King County TVM instructions (the upper panel labeled 1 thru 6)—customers often miss these instructions and select the wrong fare



Figure 7-6: King County TVM display illustrating difficulty to read

WSF uses a custom-developed touchscreen kiosk deployed as part of their overall electronic fare collection system. These units also only accept credit cards (no cash or change), but the touchscreen display is bright, highly visible, and easier to use than the King County units. The disadvantage of these units is that they require power and communications, and for direct outdoor installation would require a different housing and environmental protections than the unit shown in the photo below³.

³ As part of a project for the Alaska Marine Highway System, IBI Group is investigating options for outdoor-rated kiosks and has confirmed there are various models available in the market



Figure 7-7: WSF touchscreen kiosk at Pier 52

Figure 7-8: Typical ticket issued by the WSF kiosk

Both WSF and King County use machines that do not accept cash and do not provide change. Sound Transit by contrast offers full-function credit card and cash vending machines in its rail stations, but these units cost on the order of \$60,000 to \$100,000 each, present a target to thieves in unattended areas, and require significantly more routine maintenance to collect and replenish cash and address bill and coin jams.

7.6 CASH COLLECTION

For the POF service to effectively minimize operating costs and vessel dwell time, cash fare collection should also be minimized. While the combination of ORCA and vending machines should be able to reduce cash utilization (ideally to somewhere below 5-10 percent), for the foreseeable future (and to comply with Title VI) it is expected that some mechanism will need to be provided to accept cash.

Although various methods are available to collect cash (more expensive vending machines, staffed booths), the method used by the King County ferry system appears to be the most applicable given the similarities in the customer base, ORCA utilization, and terminal infrastructure.

That method involves a portable farebox stored on the vessel and rolled out to the float at the time of boarding. Customers simply drop funds (exact change) in the box where it is held in a secure cashbox for later retrieval by the terminal agent. Because vessel crew never handles the cash, this function can be performed by a deckhand versus a purser. A deckhand can also inspect ORCA cards and prepaid tickets.



Figure 7-9: Portable farebox used by King County for the Water Taxi service

7.7 MOBILE TICKETING (FUTURE)

Mobile ticketing is a relatively new technology where a person purchases a fare using a smart phone. The concept is similar to that used in the airline industry, with the exception that mobile tickets used for transit typically have many more visual cues (versus just a bar code) to support both scanning and visual inspection.



Figure 7-10: Mobile ticket application used by New York City passenger ferries (system supplied by Bytemark)



Figure 7-11: GlobeSherpa Mobile ticket application used by TriMet in Portland for its bus services

Although a promising replacement for cash, particularly as smart phone penetration continues to rise, this industry is still in the developmental stage and the business proposition for the vendors is based on volume of transactions (a press release from Bytemark cites 83,000 users in the New York Area, and GlobeSherpa cites 66,000 users). King County and Sound Transit are looking at this technology and are considering demonstrations, but currently there are no transit mobile ticketing applications in use in the Central Puget Sound region, hence no opportunities to simply leverage off of an existing system. However, if King County or Sound Transit moves ahead with such a system, it may be a viable option for KT to partner with the larger agency to offer mobile ticketing for POF.

7.8 FARE PRODUCTS, PRICING, AND KEY ISSUES

Fare Products

Fare products are tickets, passes, or value the person has to have in order to use the service. For fare collection planning, it is useful to separate the concept of the product from the technology as any particular product (e.g. a ticket) could be in paper form, could reside on an ORCA card, or could reside in some other technology. Typical fare products used in passenger ferry services include the following:

- **Single-Ride Fares:** These are typically used by infrequent riders needing to purchase a one-way or round-trip ride fare. Cash, single-ride tickets, and ORCA stored value are examples of single-ride fares.
- **Time-Based Passes:** These provide unlimited rides within a set time period. As an example, KT's fixed route bus services currently accept KT-specific monthly passes, the regional Puget Pass, and Day Passes. All are currently supported with ORCA. WSF as well sells monthly passenger passes on ORCA, priced depending on route.

- **Multi-Ride Fares:** Through its Wave2Go program and more recently through ORCA, WSF offers a ten round-trip product for semi-frequent travelers that replaced its previous ticket book program. Tickets must be used within 90 days, and, although the ORCA design supports multi-ride tickets, it has not been deployed in the region (current ORCA deployment is focused on stored-value and time-based passes only).

In the case of ORCA, time-based passes are the dominant product for current KT riders accounting for 80 to 90 percent of boardings as noted previously. Stored value, while a distant second in utilization, still reflects about 10 to 15 percent of current boardings.

Fare Pricing

There is a delicate balance between pricing ferry fares high enough to achieve farebox recovery, yet low enough or with enough discounting options to attract riders who have other alternatives, such as using alternative public transportation services, driving around, or not traveling at all. As well, regional equity is a key consideration. Equity and travel pattern diversion has historically been the reason for the WSF cross-sound fare that provides equal pricing on the Bremerton and Bainbridge runs even though the latter has approximately half the trip length and duration of the former.

Other issues to be considered in setting prices include the following:

- **Customer Price Sensitivity:** Transit customers tend to be highly sensitive to price differentials for service and may choose the cheaper option even if the service is significantly slower or with fewer amenities. The passenger survey conducted for this Business Plan found the majority of respondents (79 percent) are willing to pay from \$1 to over \$3 each way in additional fare for the faster, premium POF service compared to passenger fares on vehicle ferries with nearly half of those (37 percent) falling in the \$1 to \$1.99 in additional fares.
- **Round-Trip versus One-Way Fares:** With the WSF Seattle-Bremerton route serving the same route, and collecting round-trip fares (priced at \$8 for an adult) from Seattle only, if KT collects fares one-way the concern is that customers will catch a “free” (no charge) ride with WSF from Bremerton, and then pay only for their return trip on KT ferry services. This trip splitting would impact both KT and WSF, resulting in uneven loads and lost fares. Three months into its service, the previous Bremerton to Seattle service operated by Kitsap Ferry Co. was reported by the press (sources unknown) to be losing 100 Bremerton-to-Seattle morning commuters every day, a large chunk of their 300 daily riders⁴.

The King County Water Taxi faced a similar issue in that it provides service from Vashon Island to downtown Seattle, and WSF also provides service to Vashon (through Fauntleroy). The Water Taxi sells one-way fares priced at \$5.50 cash per adult, or \$4.75 if paid with ORCA for travel to Vashon. Informal discussions with the King County Pier 50 terminal agent confirms this is an issue for King County where they are observing ridership imbalances as some people are taking the free direction on WSF off of Vashon Island in the morning (only paying the \$2.50 bus fare), and then returning on the Water Taxi in the evening.

⁴ King, Niki. (2 November 2004) Bremerton Foot Ferry Slow to Catch On. *Kitsap Sun*



- **Equity:** Title VI of the Civil Rights Act of 1964 relates to transit service and fare changes and states that, “Title VI is a Federal statute and provides that no person shall, on the grounds of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.” As Title VI covers all of the operations of covered entities without regard to whether specific portions of the covered program or activity are Federally-funded, the POF service would be within its jurisdiction. Therefore, care must be taken to ensure the equity and financial accessibility of the services. If the POF fares are priced significantly higher than the WSF service on the same routes, KT could face complaints that lower income customers are being priced out of a premium public service. To demonstrate the equity of the POF service, KT should offer a low-income fare to those customers who qualify for the low-income bus fare.

Additionally, all “providers of public transportation to which this Section applies are required to develop written procedures consistent with this Title VI to evaluate, prior to implementation, any and all service changes that exceed the transit provider’s major service change threshold, as well as all fare changes, to determine whether those changes will have a discriminatory impact based on race, color, or national origin. The written procedures and results of service and/or fare equity analyses must be included in the transit provider’s Title VI Program.”⁵ It is likely the POF service would be considered a service change; therefore, KT would need to complete such an equity analysis prior to implementation. KT was provided guidance on completing such analysis during a Title VI Compliance Review conducted in 2012.

- **Farebox Recovery and Sustainability:** A reasonable farebox recovery rate will be an important factor in the long-term sustainability of the POF service. The History and Background research documented that previous unsubsidized services failed due to an unsustainable fare model that could not support affordable fares on non-subsidized routes. The previous POF services had a wide price range of \$7 to \$14 for round-trips.
- **Coordination with Existing KT Fare Structure and Connecting Services:** Although pricing may be specific to the POF service, the fare products offered should build from KT’s existing fare structure and rider categories. To support multi-modal operations, existing fare products such as KT passes, ORCA stored value, DayPasses, and Puget Passes should allow customers to seamlessly transfer between modes (including potentially park-and-rides) with appropriate transfer credits and privileges. If transfers are supported, it is important to note that the revenue realized for the ferry trip portion of the journey may be less than the fare paid, as that fare may need to be apportioned to all trips (bus, ferry, and so forth) that make up the journey.

⁵ FTA Circular 4702.1B, "Title VI Requirements and Guidelines for Federal Transit Administration Recipients"

7.9 FARE COLLECTION CONCEPT OF OPERATION

Fare Collection Policies

The primary issue impacting fare policies for a new KT ferry system is the availability and fare policies of alternative public transportation services such as WSF, King County Metro, and Sound Transit. KT's previous experience, and current experience with the Vashon Island Water Taxi service, shows regular riders are highly sensitive to price differences and will often take a free option where possible. In both of those cases the passenger ferry services were/are charging one-way fares resulting in a situation in which people traveling eastbound in the morning are using no-cost (to the passenger) WSF services; then traveling back in the afternoon via the passenger ferry service.

An alternative approach is to charge round-trip fares in the westbound direction like WSF does. The challenge with this option, however, is that, assuming customers are willing to pay on average a premium of \$2 each way for passenger-only service, the ticket price would be \$4 more for a round-trip, equating to \$12.00 and \$10.25 for a full, adult, cross-sound and short-route fare respectively, potentially resulting in a situation in which customers take the passenger-only service in the free direction in the morning, and the lower net cost WSF service in the afternoon to avoid the additional \$4 charge.

Neither of these approaches appears to be the best alternative for KT ferry operations.

To address this issue it is helpful to break the fare price down into two components:

1. **Base Price:** This is the directional fare offered by an alternative service on a route. For example, from the perspective of the customer, the Bremerton-Seattle WSF route base price is \$0.00 when traveling in the westbound direction, and \$8.00 when traveling in the eastbound direction.
2. **Premium Service Price:** This is the additional amount a customer would be willing to pay for the faster, more comfortable, and more convenient service offered by a passenger-only service. The actual amount would likely vary by route or customer market, but, per the results of the passenger survey, would nominally be on the order of an additional \$1 to \$3 for a one-way trip.

The proposed fare model is to set fares that are both route- and direction-specific with a generalized model as follows:

$$\text{Fare Price (route- and direction-specific)} = \text{Base Price} + \text{Premium Service Price}$$

Using the Bremerton-Seattle and Southworth-Seattle routes as examples, and assuming a willingness to pay \$2 per trip for premium service, results in the example fares found in Table 7-4.



Table 7-4: Example Fares

Route	Eastbound			Westbound		
	Base	Prem.	Total	Base	Prem.	Total
Bremerton-Seattle Adult	\$0.00	\$2.00	\$2.00	\$8.00	\$2.00	\$10.00
Southworth-Seattle Adult	\$2.50*	\$2.00	\$4.50	\$8.75	\$2.00	\$10.75

*Note: The Southworth-Seattle route assumes \$0.00 for the WSF leg, connecting to a King County bus at \$2.50 for the leg into Seattle when traveling westbound. In the reverse direction it assumes \$2.50 for bus fare plus \$6.25 WSF fare.

Note that these are examples only, intended to demonstrate how the generalize model could be applied. In the case of the two routes noted above, KT may want to set the Bremerton-Seattle and Southworth-Seattle routes to the same amounts, such as \$3 for the eastbound leg and \$10 or \$10.50 for the westbound leg. Further refinement would be needed at the time fares were established, including setting discount fare prices.

The pricing model should also look at the monthly travel cost for a commuter who would normally use passes or other discounted products. For a commuter who uses just KT and WSF services, the most economical option is to purchase a KT monthly pass at \$50.00, plus either a WSF Central Sound pass at \$103.20 or Southworth-Fauntleroy pass for \$80.80. For Southworth customers traveling to Seattle via Fauntleroy exclusively on transit, their most economical option is to purchase a \$90.00 PugetPass (good on both KT and King County buses) plus an \$80.80 WSF pass for a total monthly cost of \$170.80.

If it is assumed riders are willing to pay a \$1 to \$3 premium each way for passenger-only service, and if it is assumed a commuter makes 16 round-trips a month on average, then it could be argued a typical commuter would be willing to pay the current lowest cost option plus \$32 to \$96 per month for high-quality, passenger-only service. Actual pricing would need to consider regional and equity issues, and arguments could be made to provide common pricing across multiple routes, much as WSF does today with its Central Sound route pricing.

Technologies

ORCA

Given the predominance of its use in KT Foot Ferry and bus operations (more than 75 percent market share), ORCA is expected to be the dominant form of fare payment and is recommended as the primary fare collection mechanism. The program itself is in a mature stage and KT has experience using portable fare transaction processor devices for its foot ferry operations.

Collection/inspection would be done at the time of boarding by a vessel deckhand without the need for additional staff. Alternatively, stand-alone fare transaction processors similar to those used for Sound Transit and the Vallejo Ferry example could be used, but they would need to be installed on the float at the boarding area (with power and communications) which will likely be impractical (KT has looked into this option before for the foot ferry services and it did not prove to be feasible).

As KT currently operates portable fare transaction processors, no additional infrastructure should be required with the exception of additional units along with communications connections at Southworth and Kingston so the units can be put in a holder at the end of a shift as shown below.



Figure 7-12: Portable fare transaction processors in charging/ communications holders (King County Water Taxi)

In the case of ORCA PugetPasses, the proposed approach is to have the system accept the PugetPass with a value equal to or greater than the one-way fare without any additional processing. If the PugetPass value is less than the fare, the remainder will need to be collected from the customer's stored value (e-purse). Similar rules could apply to other pass products such as the KT monthly pass, DayPass or business account passes where the value of the pass is applied to the fare, and any additional payment required is deducted from the e-purse.

For frequent commuters, the proposed approach is to build off of the current monthly pass offering and create one or both of two new fare products described below:

1. A new KT bus plus ferry pass product would allow unlimited monthly travel on all KT services (bus, foot ferry, and POF). This pass would be priced to factor in the cost of a month of travel on alternative services plus the POF premium.
2. A new KT ferry-only pass that non-bus transit customers could use for the POF to commute.



Like the current KT monthly pass, in return for favorable pricing these products would not include transfer privileges to non-KT services, and hence would provide an incentive for customers to use the KT ferry exclusively for waterborne travel.

Cash

For cash fare collection, the King County Water Taxi operation where customers can either purchase fares from a vending machine using a credit or debit card (thus providing a mechanism to accept those cards), or drop exact change in a portable farebox kept on the vessel and rolled out to the dock at the time of boarding appears to be most applicable. Although cash utilization (relative to ORCA) is expected to be low, one customer market KT may wish to target is casual users and/or tourists who may not have or wish to purchase an ORCA card.

Like the King County Water Taxi, credit-/debit-only vending machines would be procured to avoid the cost of cash collection, reduce maintenance, and reduce the attractiveness of the unit to vandalism and theft.

For the costing purposes, it is assumed the same types of devices King County uses—Parkeon ticket vending machines—would be utilized and presumably purchased through the same City of Seattle contract that King County used. From a customer perspective, these units are suboptimal (compared to WSF’s touchscreen units) in that they are non-intuitive and difficult to follow with poor customer displays; however, they are low cost, can operate without shelter, and can operate without the need for wired communications or power.

Note that the existing King County units cannot be enhanced to provide both King County and KT tickets. As described previously, they only support five fare products, and King County is currently using four of the five. For the purpose of this task it has been assumed separate machines would be provided. KT could consider entering into discussions with King County to procure new machines capable of vending both King County and KT fares, revisiting the technologies available in the market at that time.

To accommodate westbound fare collection, vending machines would need to be installed at Pier 50, likely proximate to the existing King County units at the location shown below:



Figure 7-13: Pier 50 TVM locations

To avoid customer confusion, the King County units could be moved closer together and the KT units branded appropriately to distinguish them from the King County units.

For sales on the west side of the sound, it is suggested that:

- Two TVMs be installed at Bremerton;
- One TVM be installed at Southworth;
- One TVM be installed at Kingston; and
- The existing KT window at the BTC is used to sell tickets.

Tickets would be inspected or collected in each direction.

Emerging Technologies

Mobile ticketing offers interesting promise, particularly for casual users and tourists, and could conceivably replace the ticket vending machines. Unfortunately there are no mobile ticketing systems in use in the Central Puget Sound Region at the moment and setting up a service only for KT ferry operations is likely to be cost prohibitive.

Nevertheless, developments in this area should continue to be tracked and consideration given to joining in with an agency such as King County or Sound Transit, both of whom are starting to take a look at these technologies.

7.10 SUMMARY OF RECOMMENDATIONS

The fare collection strategy recognizes POF customers have a choice of services, and will seek the best value for their transportation budget. This value extends beyond the dollar amount, however, as the rider survey indicates customers see the value in the premium service offered by POF and are willing to pay an additional amount for the time savings and other amenities. Still, a properly-priced service will help to achieve ridership targets and support the long-term sustainability of the service. Therefore, recommendations for KT's fare collection strategy are summarized as follows:

- Fares are priced and collected in each direction to help mitigate AM and PM ridership imbalances that can result when a free” (no cost to the passenger) option is available for eastbound travel.
- Cash prices are based on route and are set at the lowest-cost alternative plus a premium of \$1 to \$3 per trip. Where appropriate, fares are set at common levels similar to WSF's central sound fare to address equity and community concerns.
- The majority of fares will be collected via the ORCA card. All currently-accepted pass products will be valid for POF travel. If the per-trip value of the pass is less than the POF fare, the remainder will be deducted from stored value. The KT low-income fare will be supported.
- For frequent riders who exclusively travel on KT, a new monthly pass product that combines KT bus, foot ferry, and POF access should be provided as an alternative to current products, possibly along with a ferry-only pass. Pricing for these products should consider the currently monthly cost a typical commuter incurs, and the additional amount that person would be willing to pay for passenger-only service.
- For non-ORCA customers, tickets are sold in the terminals and cash (exact change) is collected on board. In the near term, the ticket vending machines will likely be the same or similar models to those used by the King County Water Taxi; however, KT should seek opportunities to partner with King County to purchase an upgraded model. Cash/ticket fares may be priced slightly higher to incentivize ORCA



Appendix A

Marine Operations Functions, Skills and Expertise

- Manage and oversee all aspects of marine-related operations and support, including:
 - Responsible for operating and capital budgets
 - Establish/maintain rapport with key regulators
 - Coordinate regarding appropriate public affairs and represent marine operations in public outreach
 - Oversee development and implementation of marketing and promotion as it relates to services to the public
 - Develop short/long-term work plans
 - Interpret applicable national, state & local policies/guidelines
 - Oversee & stimulate grant development
 - Liaison with federal/state regulatory bodies
 - React to changing regulatory & policy mandates
 - Evaluate service expansion alternatives
 - Lead marine labor relations initiatives as applicable and positively influence union participation and coordination
 - Respond to applicable claims and lawsuits
 - Manage implementation and monitoring of inter-local agreements
 - Provide leadership in the development of specifications for lease, purchase, remodel, and / or design and construction of passenger facilities, maintenance facilities, and vessels
 - Coordinate drug and alcohol program
 - Capital/new vessel construction liaison and coordination
 - Establish & maintain appropriate security plans
 - Complete monthly fare collection audits as necessary
 - Maintain viable on-call employee pool
 - Coordinate applicable risk management program
- Manage all aspects of day-to-day POF operations and vessel maintenance, including:
 - Oversee vessel operations
 - Supervise vessel employees (captains, deckhands, engineers, & oilers)
 - Coordinate vessel sailings
 - Develop crew watch schedules
 - Coordination/tracking of crew training
 - Establish and follow safety, security, environmental and emergency response protocols
 - Manage the vessel operating budget
 - Coordinate fueling and oil vendors
 - Perform necessary crew disciplinary actions
 - Perform employee dispatch
 - Provide on-call services during all hours of operation
 - Coordinate daily and periodic vessel maintenance
 - Establish & enforce maintenance procedures
 - Establish rapport with marine suppliers
 - Ensure vessel seaworthiness
 - Establish & enforce operating procedures
 - Maximize vessel efficiency (operating/financial)
 - Establish and maintain appropriate pollution prevention and response protocols
 - Manage all aspects of shore side operations and customer service, including:
 - Oversee daily shore side operations, passenger queuing and support functions
 - Hire, train & supervise information agents
 - Develop and maintain information agent schedule
 - Develop signage and branding plan for vessels and docks; obtain necessary permits
 - Develop, maintain group, complimentary ticket



- Review and approve payroll
 - Perform applicable payroll auditing
 - Ensure proper personal protective equipment use
 - Work with Passport regional pricing committee to maintain/update ferry Passport pricing
 - Participate in marine emergency incident command system (ICS)
 - Supervise vessel crew and terminal operating staff
 - Support external media relations staff to manage the ferry public information needs
 - Provide appropriate liaison with applicable terminal landlords
 - Hire, train, evaluate & discipline staff
 - Establish/report on marine performance standards
 - Provide Kitsap County leadership with appropriate operational briefings
 - Liaison with the other transit agencies, ferry systems, public agencies/cities and the public.
 - Act as authorizing agent for purchases and contracts
 - Respond to changing circumstances or legislation
 - Direct the operations of the system
 - Represent the County with external committees at the national, state, and local levels
 - Provide leadership in the procurement and contract administration process
- sales procedures and process
 - Develop, coordinate & implement communications plan and brand identity
 - Implement electronic communications to passengers such as real time notification system
 - Respond to customer questions, complaints and comments from variety of sources; help resolve operational problems
 - Create marketing strategies and materials
 - Manage marketing/communications budget
 - Maintain and repair ticket vending machines as necessary
 - Maintain applicable ferry Web site
 - Ensure proper fare collection
 - Prepare information for and/or deliver presentations to community and business groups
 - Ensure all equipment warranties maintained
 - Coordinate development of new facility technical manuals and operations/maintenance of assets
 - Liaison with KT staff re: transit connections and schedule, fare, lost and found and pass issues
 - Ensure proper fare collection and processing
 - Coordinate & promote special events and services
 - Work with consultants on grant funded projects and provide quarterly status updates for the FTA
 - Provide alerts and updates to emergency situations to the public



Appendix B

Finance and Administrative Support Functions, Skills & Expertise

- Oversee/manage broad range of administrative support such as:
- Maintain schedules, set priorities and resolve conflicts
- Reception responsibilities for marine operations
- Schedule and organize meetings
- General clerical support
- Maintain/archive records and policies
- Route memos and letters to staff
- Track/monitor/draft correspondence per policies
- Act as entry point for customer feedback, responding directly or referring them to the appropriate person
- Generate statistics and draft reports for National Transit Database, quarterly or annual reports, and other performance measure reporting requirements
- Review and route incoming marine-related correspondence
- Draft, edit, format correspondence, reports, etc.
- Records management (oversight, tracking, coordination and disposition of electronic and physical records)
- Perform inter and intra-agency coordination and relations
- Oversee set up and maintenance of fixed asset inventory tracking system, maintenance of inventory records and periodic inventory checks
- Develop and maintain tracking system for annual reporting to National Transit Database
- Provide oversight and management of personnel support functions, including:
- Provide specialized and/or technical information to staff (benefits, pay checks, county policies, procedures, etc.)
- Payroll processing and validation, ensuring compliance with county policies and Jones Act requirements
- Oversee/manage full scope of financial services
- Budget development, maintenance, forecasting and tracking for operating and capital funds
- Oversee accounts payable and invoice payments
- Prepare quarterly and annual budget reporting
- Authorize purchases and contracts
- Oversee cash receipting and revenue collection auditing process
- Interface with various auditing agencies, federal, state, district and internal auditors on annual, periodic and triennial audits
- Interface with central finance, procurement, cash management, accounts payable, accounts receivable, central payroll and benefits
- Coordinate marine purchasing, RFP & acquisition processes
- Prepare cost/benefit analyses
- Oversee, review and approve payroll processing
- Establish/maintain accounting, financial & audit procedures
- Develop and present financial information to executive staff and other governing bodies
- Review all audit prep documents, meet with auditors
- Coordinate grant accounting and reporting
- Conduct and maintain cash revenue audit reports
- Analyze monthly financial activity, research unusual activity, process error corrections
- Prepare applicable journal entries, interfund transfers, cash receipts
- Prepare files for Washington State and FTA audits
- Assist in developing capital budget
- Develop capital budget reports, prepare standard capital budget forms, review and validate system records



- Participate in and support fleet hiring practices (review job descriptions, screen applicants, track paperwork, generate correspondence)
- Research, calculate, and draft sea time letters for employees to the USCG
- Documentation of human resources policy, as they pertain to the marine operations
- Draft/process/review of HR paperwork (Personal Change Notification forms, Special Duty forms, termination and disciplinary paperwork, shift bids, administrative leave, new employee paperwork, etc.)
- Assign/review/track marine specific inquiries
- Training and orientation of fleet personnel (badging, uniforms, phone and computer accounts, coordinate trainings)
- Represent marine operations with regard to HR, payroll, benefits, labor contracts, etc.
- Participate in finance section of marine emergency incident command system (ICS)
- Perform and coordinate contract oversight & management, payment processing
- Prepare fiscal notes, financial plans for legislation
- Compile all grant source documents, organize and maintain filing system
- Prepare grant reimbursement reports, analyze and verify grant expenditures
- Develop quarterly project and grant report information
- Maintain cash and ticket vending machine receipt records, run ORCA and Passport reports, calculate monthly revenues
- Process expense claims for operations staff
- Determine taxability of goods and services, work with vendors to ensure invoicing is done to match tax/no tax
- Manage order receipt system for purchased goods and services
- Write waivers, three-quote documents, documentation of vendor selection

Appendix F

Ridership Study and Sensitivity Analysis

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Kitsap Transit Passenger-
Only Ferry Business Plan
and Long Range
Strategy: Service
Opportunities and Route
Analysis

Report
August 2014

KPFF Consulting Engineers

Our ref: 22691101
Client ref: 114144





Kitsap Transit Passenger-
Only Ferry Business Plan
and Long Range
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Opportunities and Route
Analysis

Report
August 2014

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1 Introduction and Project Purpose

Steer Davies Gleave (SDG) is part of a team led by KPFF Consulting Engineers tasked to develop the Passenger-Only Ferry (POF) Business Plan and Long-Range Strategy (the Project). The Project will provide a plan to develop POF service between Seattle and three locations in Kitsap County: Bremerton, Kingston and Southworth.

SDG has been tasked with developing projections of ridership and revenue for the proposed services. The Project is critically dependent on sound ridership and revenue projections. SDG's approach to bases its analysis and projections on a rigorous mode choice modeling framework, which estimates ridership based on the service characteristics as well as the characteristics of all competing alternatives. The modeling approach also allows for the flexible incorporation of varying service characteristics, notably fares and service frequency. This allows for the identification of service levels that best serve the needs of users while remaining within the limits of resource constraints. The Puget Sound is home to the nation's largest passenger ferry network, and the existence of passenger services that have been operating for years, sometimes decades, provides a rich basis for developing the ridership projections for the Project. In developing its ridership projections, SDG explicitly made full use of this history both in developing its modeling tools as well as in ensuring that projections fit past trends and observed behavior.

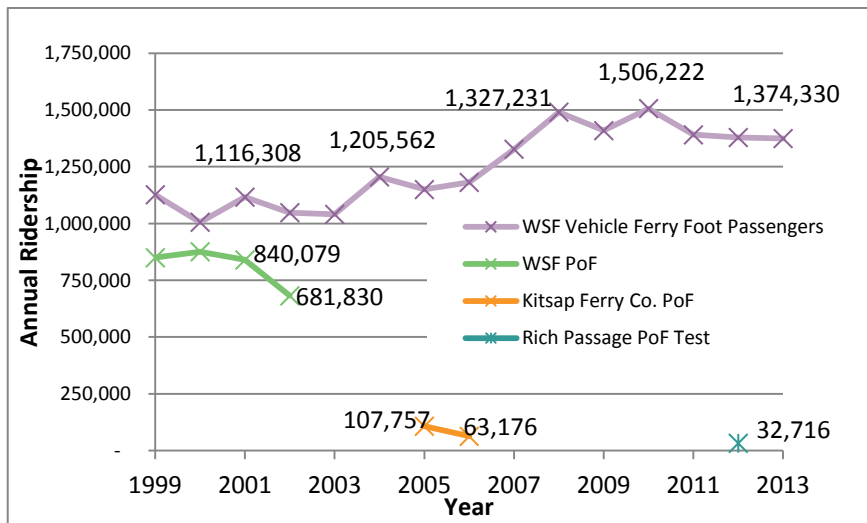
2 Past and Present Passenger Ferry Service From Kitsap County

Washington State Ferry Vehicle Ferry

Washington State Ferry (WSF) is the nation's largest ferry system serving 22.5 million riders and 10 million vehicles each year¹. Within the WSF network in 2003, the Seattle to Bremerton vehicle ferry carried 628,000 vehicles, 291,000 vehicle passengers and 1,374,000 foot passengers. The current service links Bremerton to Seattle in 60 minutes for a current fare of \$7.85 round trip².

Foot passengers are of particular interest for the Project's ridership analysis as they represent potential users of a new POF service. Figure 1.1 shows the evolution of the foot passengers on various services linking Bremerton to Seattle in the years the services were operational. The largest share of foot passenger demand has been on the WSF vehicle ferry. This foot passenger ridership has grown substantially between 2005 and 2010 and has stabilized around 1.4 million in the past three years, with 1,374,330 foot passengers in 2013.

Figure 1.1: Vehicle and Passenger Only Ferry Services Foot Passenger Ridership, 1999-2013



¹ The Staten Island Ferry in New York City carries over 22 million annual passengers, with its vehicle service now discontinued.

² Frequent users can purchase 10 round-trips tickets for a discount price of \$63.30 or get a monthly pass for \$101.30 (valid for a maximum of 31 round-trips per month). Monthly passes purchased through the regional SmartCard program allow for unlimited usage. There are 15 departures per day on both weekdays and weekends.

WSF Passenger Only Ferry Services

Between 1999 and 2003 WSF operated a POF service linking Bremerton and Seattle. In 1998 voters approved a referendum which allowed the 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. As a result of this funding, plans were developed to replace aging vessels, improve terminals, increase service frequency on existing runs and add new passenger-only vessels and service.

In 1999, WSF POF service began from Bremerton to downtown Seattle. That same year, Initiative 695 was approved which lowered the state Motor Vehicle and Excise Tax (MVET), leading to a reduction in state ferry funding of \$93M between fiscal years 1999 and 2001. While I-695 was declared unconstitutional in March 2000, the Legislature quickly took separate action after the court decision reducing the MVET leaving WSF without the funds it needed to continue to provide POF service at the existing levels of service. WSF was forced to compensate for the loss of funds by increasing fares to \$7.40 fare for POF service, considerably higher than the \$5.40 for the Vehicle Ferry.

A separate development also impacted service quality and ridership: Travel speed had to be reduced for environmental reasons; and in 2003, the WSF POF trip from Bremerton to Seattle took 50 minutes rather than the original 40 minutes. Funding constraints also led to the discontinuation of POF weekend service in the Summer of 2000. As higher fares, slower sail times and reduced service eroded ridership, the WSF Bremerton POF service was discontinued in August 2003.

Kitsap Ferry Co.

To fill the gap left by the ending of the WSF POF, Kitsap Transit (KT) put forth a proposition to publicly fund a POF service through a sales and use tax increase and an MVET on license renewals. The proposition failed, and KT then entered into private-public partnership with contractors to provide privately-funded POF service. The resulting Bremerton POF service was operated by Kitsap Ferry Co., LLC, and a separate Kingston service was operated by an entity called Aqua Express, LLC. The Kitsap Ferry Company operated the service from August 2004 to March 2007.

Kitsap Ferry Company implemented a high-speed low-wake vessel for POF service through Rich Passage between Bremerton and Seattle, and the service made the crossing to Seattle in 40 minutes. The Bremerton to Seattle POF provided four round trips per day at a fare of \$7 each way (compared to the \$6.5 round trip on the WSF Vehicle Ferry). Monthly passes were available for \$215 during the peak season and \$172 during the off-peak seasons. There were originally 8 departures per day (reduced to 4 departures in 2006) and there was no weekend service. At those service characteristics ridership was averaging 300 trips a day (107,757 riders in 2005, its most successful year). The revenues generated were less than half of what the company needed to break even.

Rich Passage 1

The Rich Passage 1 (RP1) test service operated from late June to October 2012. The RP1 was served by a high-speed catamaran during the test service. One of the major hurdles in providing a competitive POF service to Bremerton is the environmental impact that vessel wake has on the shoreline of Rich Passage, a tidal strait between Seattle and Bremerton. The environmental concerns led to the slowing of the previous WSF POF service. The RP1 service was funded as part of a federally funded project to solve the wake wash problem. The RP1 service made the crossing from Bremerton to Seattle in 35 minutes. The 118-passenger ferry started running four round-trips each weekday and increased to five round-trips each weekday and five round trips on Saturday midway through the trial. The service charged \$7 round trip fare from June through August and \$6 round trip from September through October. The trial service ended in October 2012 and the study indicated that the RP1 can operate through Rich Passage without its wake damaging the shoreline.

Figure 1.2 shows the evolution of the various services used by foot passengers, both POF and on the WSF vehicle ferry, from 1999 to 2003. The figure shows how foot passenger traffic has mostly shifted between the POF services and WSF vehicle ferry. Of particular significance is the illustration of how sensitive the POF ridership has been to service characteristics: The WSF POF ridership decreased substantially in 2001 and in subsequent years reflecting the impacts of changing service characteristics. The ridership decreased from a high of 876,000 passengers in 2000, to 682,000 in 2002 as service quality decreased. By 2003, 1.04 million foot passengers used the WSF Bremerton-Seattle vehicle ferry while 444,000 used the POF service.

Figure 1.2: Monthly Foot Passenger Ridership Throughout the Years (1999-2013)

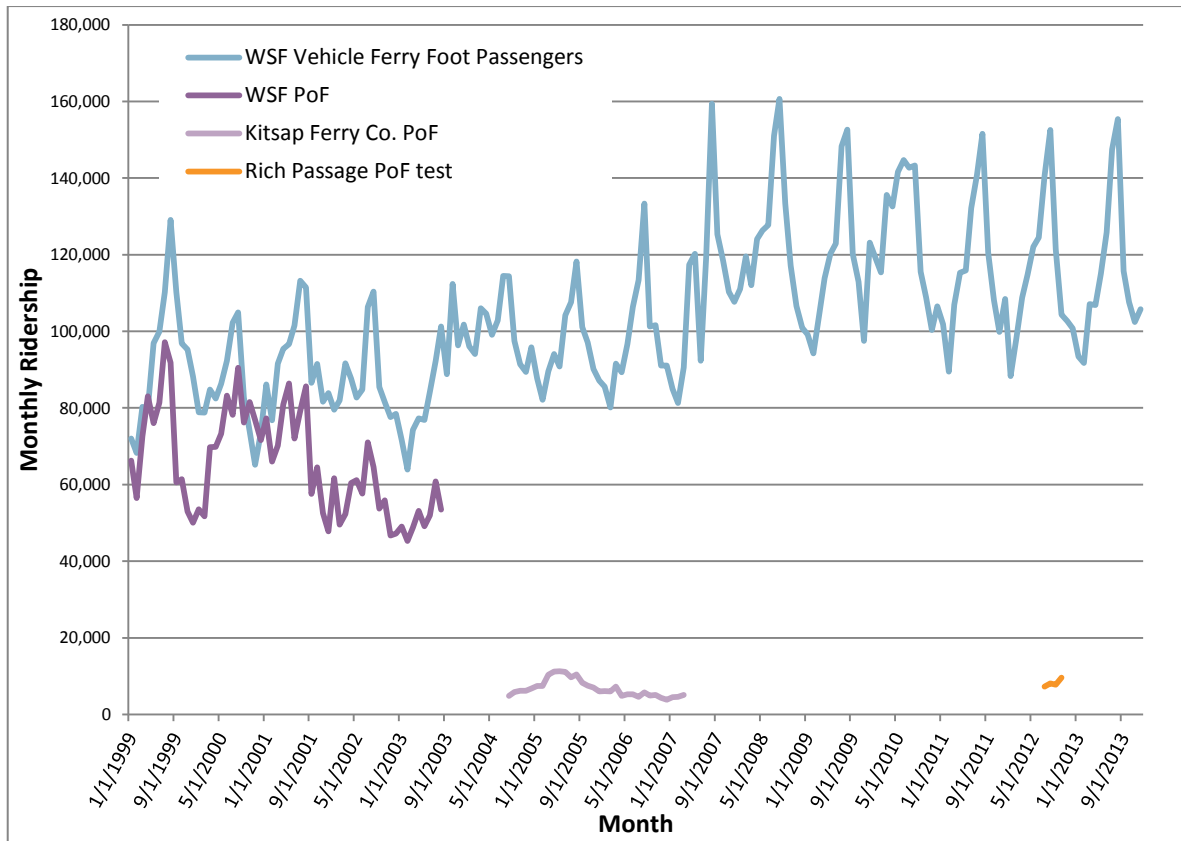


Table 1.1 summarizes the annual ridership on the various foot passenger ferry services between 1999 and 2013 from Bremerton to Seattle.

Table 1.1: Historical Foot Passenger Demand between Bremerton and Seattle from 1999 to 2013

Year	Total Foot Passenger Demand	WSF Vehicle Ferry Foot Passengers	WSF POF	Kitsap Ferry Co. POF	Rich Passage POF Test (4 months of operations)
1999	1,976,700	1,126,966	849,734		
2000	1,882,085	1,005,874	876,211		
2001	1,956,387	1,116,308	840,079		
2002	1,729,912	1,048,082	681,830		
2003	1,452,494	1,040,831	411,663*		
2004	1,235,378	1,205,562		29,816*	
2005	1,257,487	1,149,730		107,757	
2006	1,244,442	1,181,266		63,176	
2007	1,341,429	1,327,231		14,198*	
2008	1,490,608	1,490,608			
2009	1,409,286	1,409,286			

Year	Total Foot Passenger Demand	WSF Vehicle Ferry Foot Passengers	WSF POF	Kitsap Ferry Co. POF	Rich Passage POF Test (4 months of operations)
2010	1,506,222	1,506,222			
2011	1,390,714	1,390,714			
2012	1,411,596	1,378,880			32,716
2013	1,374,330	1,374,330			

* ridership in italic from incomplete years (service started or stopped during that year)

Aqua Express Ferry Co.

Beginning in January 2005, Aqua Express operated as a commercial service with three round trips per day between Kingston and downtown Seattle. Scheduled service operated Monday through Friday, including holidays. The fare was \$5.25 each way, with ticket books available at a 5 percent discount. Ridership reached 280 daily trips. Ten months later in the fall of 2005, Aqua Express suspended service citing lower ridership than anticipated and rapidly escalating fuel costs.

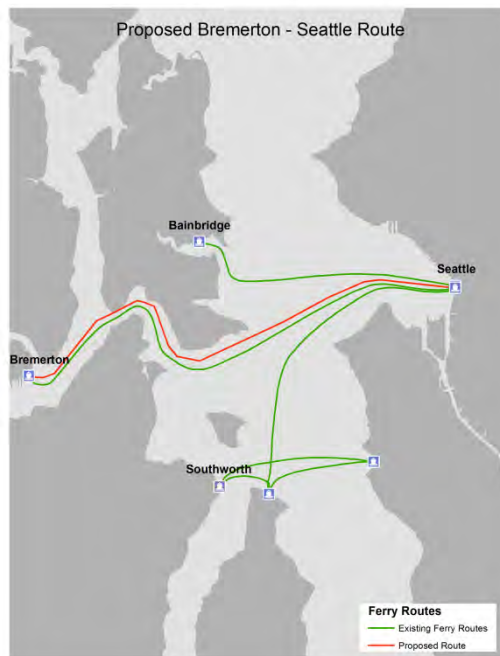
3 Proposed Services

Three routes have been proposed as part of the Project: Bremerton to Seattle, Kingston to Seattle and Southworth to Seattle. These routes were identified by the *Puget Sound Regional Council Passenger-Only Ferry Study* as having the potential for immediate implementation. While each location is already served by vehicle ferries operated by WSF, neither Kingston nor Southworth have direct service to downtown Seattle. Unlike the others, Bremerton currently has direct service to downtown Seattle, but the proposed POF would make the crossing in half the time of the existing vehicle ferry.

Bremerton to Seattle

The proposed Bremerton to Seattle is similar to the previous POF services that operated on the same route. Bremerton currently has ferry service to downtown Seattle operated by WSF. However there is no POF option and the vehicle ferry makes the crossing in 60 minutes. The proposed service will utilize a high-speed vessel that produces little wake, enabling it to operate through Rich Passage without harming the coastline and complete the crossing in around 28 minutes.

Figure 3.1: Proposed Bremerton to Seattle POF Route



Kingston to Seattle

The proposed Kingston to Seattle POF route would be similar (with notable differences) to past POF services that operated on the same route. The area currently has ferry service to Edmonds

operated by WSF. The proposed route to downtown Seattle will have a crossing time of 33 minutes and will be operated by a vessel with a 150-passenger capacity.

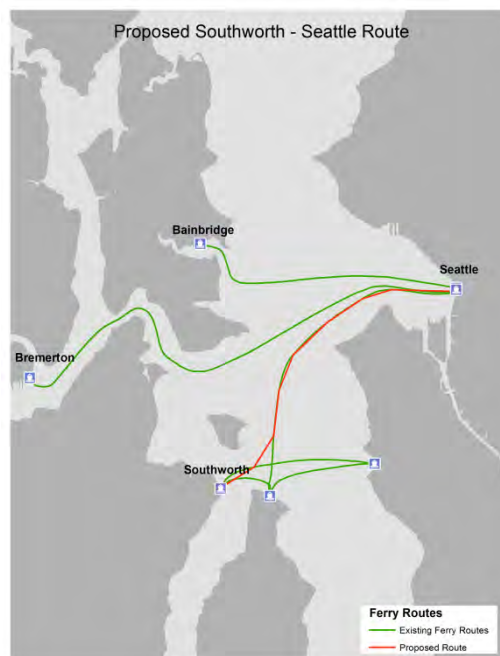
Figure 3.2: Proposed Kingston to Seattle POF Route



Southworth to Seattle

The proposed Southworth to Seattle POF route would be a completely new service for the area. While the area does have ferry service to Vashon Island and West Seattle, it does not have service directly to downtown Seattle. The proposed route to downtown Seattle will have a crossing time of 23 minutes and on a vessel with a 150-passenger capacity.

Figure 3.3: Proposed Southworth to Seattle POF Route



4 Population, Employment and Commutation Bases

Socioeconomic variables, including population and employment, were fundamental to forecasting ridership and understanding the potential demand. The socioeconomic data comes from a variety of sources, shown in Table 4.1.

Table 4.1: Socioeconomic Data Sources

Data	Source
Population	2000 Census, 2010 Census
Labor Force	2000 Census, 2006-2010 American Community Survey (ACS)
Commuters to Downtown Seattle	2000 Census Transportation Planning Package (CTPP), 2006-2010 CTPP

Census 2010 data was used for base year population and was aggregated from the tract to the zone level. To understand the trends existing in the study area and understand the journey-to-work (JTW) demand, the 2010 demographic data was compared to the 2000 demographic data. Table 4.2 shows the total population, labor force and commuters to downtown Seattle and their compound annual growth rate (CAGR) between 2000 and 2010 for the study area.

Table 4.2: 2000 and 2010 Study Area Demographics and Growth Rates

	2000 Total	2010 Total	CAGR 2000-2010
Population	329,500	371,965	1.39%
Labor Force	157,615	182,681	1.49%
Commuters to Downtown Seattle	5,851	4,367	-2.88%

With both population and labor force growing between 2000 and 2010, it is surprising that in the same time period the number of daily commuters to Seattle has dropped significantly. This may be due in part to the loss of the WSF POF service from Bremerton and the expansion of the Tacoma Narrows Bridge in 2007.

Figure 4.1, Figure 4.2 and Figure 4.3 illustrate the zone-level population, labor force and commuters to downtown Seattle. The figures show that the highest population is around Bremerton, Gig Harbor and on the Olympic Peninsula. Of great relevance to the current analysis is the fact that North Kitsap County is experiencing significant population growth in addition to growth in the number of commuters to downtown Seattle.

Figure 4.1: 2010 Population and Growth by Zone

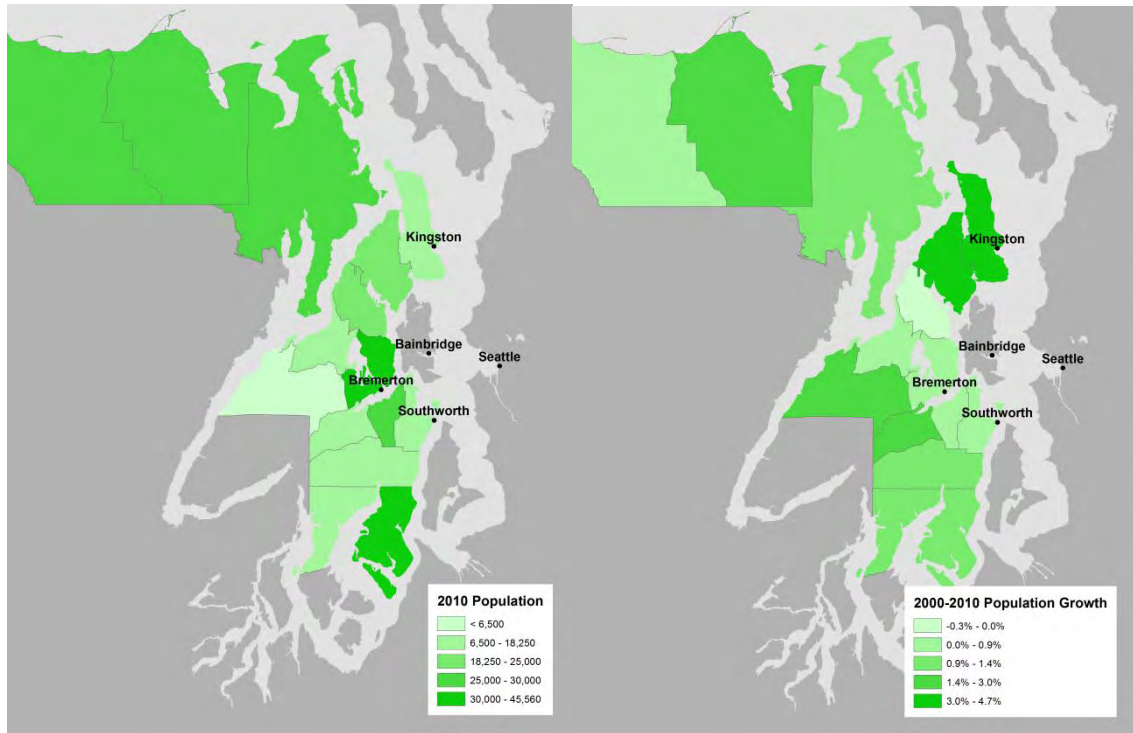


Figure 4.2: 2010 Labor Force and Growth by Zone

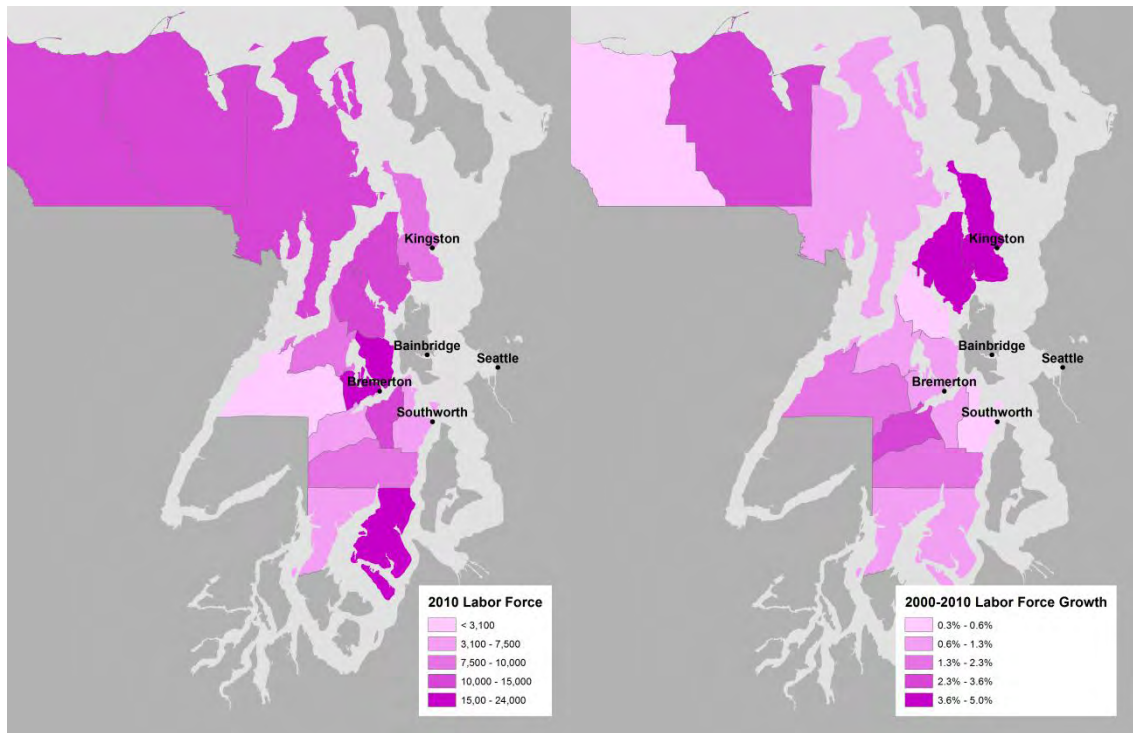
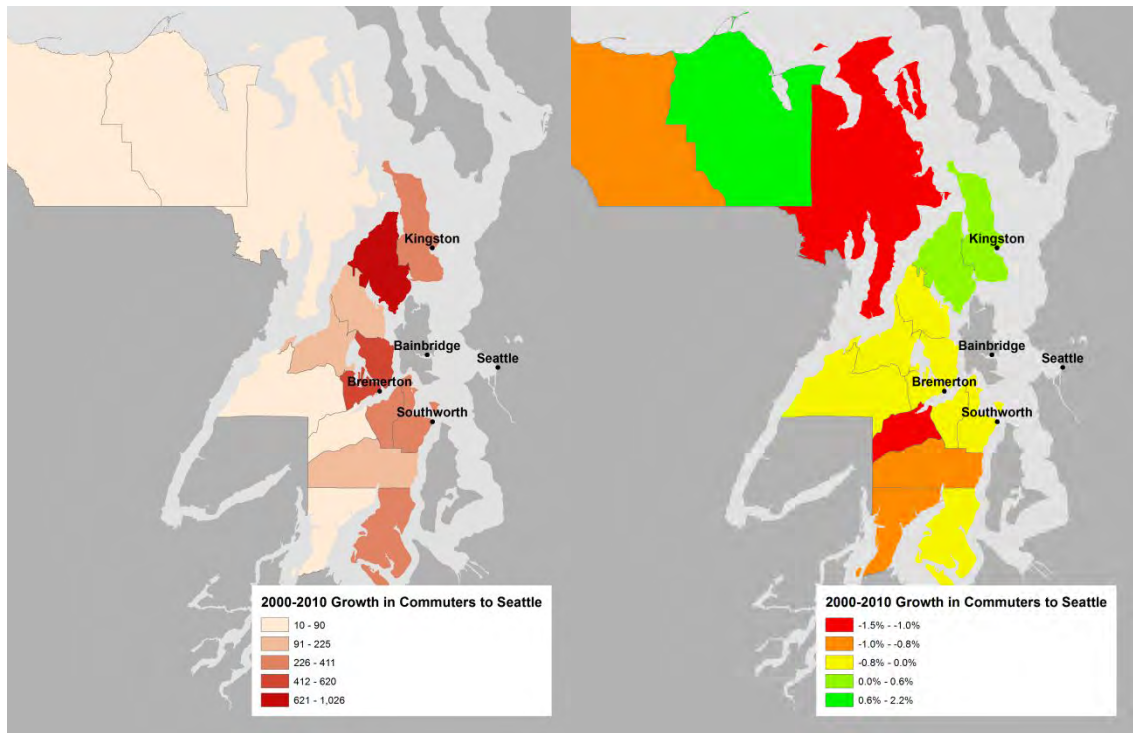


Figure 4.3: 2010 Commuters to Downtown Seattle and Growth in Commuters by Zone



5 Modeling Approach

SDG's travel demand model for forecasting the proposed POF services ridership and revenue employs a well-established three-stage process. In the first step, the total travel market size is estimated and grown to the year of analysis. In the second step, the route shares for all of the alternative travel routes, including the POF route, are calculated using a route choice model developed as part of this study. The route shares are then applied to the travel market demand to obtain an estimate of the number of trips diverted to the POF route. In the final step, the volume of induced ridership is estimated and this is added to the forecast of POF trips to produce the total ridership forecast.

We describe below the estimation process used in Step 1 to establish market size, and the route choice model used in Step 2 to calculate the POF route shares.

Market Size

To develop the market size, the number of travelers who could *potentially* divert to using the new POF is identified. Market size does not correspond to the number of riders expected on the POF. The number of travelers who will divert to the POF will be estimated by the route choice model in Step 2.

For routes where a direct WSF ferry service carrying foot passengers already operates, such as the Bremerton to Seattle vehicle ferry, the POF overall market size can be approximated by the current foot passenger volume on the vehicle ferry. This is the case for the Bremerton to Seattle POF market. In the absence of a pre-existing direct ferry service line for the Kingston and Southworth POFs, the market can be sized by looking at the 2000 CTPP and 2006-2010 ACS commuting data expanded to the entire population. Both methods are described and compared below.

Market size with a pre-existing foot passenger service

The Bremerton to Seattle market has the advantage of a pre-existing vehicle and passenger ferry service. The POF market can be sized by looking at the foot passenger volume on the WSF vehicle ferry. The vehicle ferry operates more frequently than the proposed POF, is cheaper and doesn't have a restrictive capacity limit for foot passengers, suggesting that the WSF foot passenger ridership is a good indication of the overall POF market between Bremerton and Seattle.

In 2013, foot passenger ridership on the WSF vehicle ferry between Bremerton and Seattle was 1,374,300 trips. This constitutes a first approximation of the total market size for the proposed POF service between these two cities.

Almost 80% of the volume is generated during morning and afternoon peak hours. Therefore:

- For a scenario with 6 or 12 round trips per day during peak hours, an estimate of the market size is equal to 1.09m annual one-way trips in 2013.

- For a scenario with 12 round trips per day, the market size of the POF is close to the WSF vehicle ferry foot passenger volume and is therefore estimated at 1.37m annual one-way trips in 2013.

Market size with no pre-existing foot passenger service

Passenger surveys reveal that about 60% of the WSF vehicle ferry passengers are commuters. It is of considerable interest to compare the number of foot passengers on the WSF vehicle ferry to the total number of commuters identified in the 2000 CTPP and 2006-2010 ACS data between Bremerton and Seattle. The CTPP and ACS commuting data indicates that if the POF ridership is also composed of 60% commuters, we might expect a total market size of 1.16m foot passengers between Bremerton and Seattle in 2010.

The annual peak market size estimated from the WSF foot passenger service is 1.09m in peak hours and 1.37m for the Seattle to Bremerton route for the day in 2013 based on WSF traffic statistics. From the CTPP and ACS commuting data, SDG estimates 1.16m commuters in 2010. The numbers are close and certainly within the same order of magnitude. We conclude that the CTPP and ACS data produce good approximations of a potential ridership for routes with no current pre-existing service, as is notably the case for Kingston and Southworth.

The 2010 CTPP and ACS commuting data indicates that if the POF ridership is composed of 60% commuters, we might expect a total market size of 1.07m foot passengers between Kingston and Seattle, and a total market size of 0.67m foot passengers between Southworth and Seattle.

Table 5.1 summarizes the market size by POF route.

Table 5.1: Market Size by Route

POF Ferry Route	Estimated Annual Market Size (year)	Source
Bremerton to Seattle	1.09M peak hours (2013)	2013 WSF foot passenger volume (1.37m)
	1.37M full day (2013)	
	1.16M peak hours (2010)	2006-2010 CTPP
Kingston to Seattle	1.07M peak hours (2010)	2006-2010 CTPP
Southworth to Seattle	0.67M peak hours (2010)	2006-2010 CTPP

Source: SDG analysis

Having defined the potential market, the route choice model is then developed to estimate the proportion of the potential market one could expect to divert to the three proposed POF services.

Route Choice Model

The route choice model is a standard tool to predict shares for a new route such as the three proposed services. Route choice models are statistical models that estimate the share of a market

various route alternatives can be expected to capture³ based on the attractiveness of the service characteristics. Where observations of travelers' historical choices are available, route choice models can be developed from the analysis of revealed preference (RP) data in which travelers have expressed their choices in actual situations.

A multinomial logit route choice model was developed using Bremerton-Seattle route historical ridership, which provides a wealth of information of traveler preferences useful in calibrating the model.

The route choice model parameters were calibrated to reproduce the 2006 Kitsap Ferry Co. POF service described in Section 2. In particular the calibrated model estimates market share based on the level of service (travel time, fare and frequency) offered by each route at that time⁴.

In short, the multinomial logit model evaluates each service and alternate route based on:

- Round trip cost
- Travel time
- Departures per weekday
- Wait time

The Bremerton to Seattle ferry route has a long history with several different services (as described previously, with each different service characteristics) providing important data to understand traveler preferences and sensitivities to different level of service (such as fares, frequency, or vessel speed).

Modeling Framework: The Random Utility Model

Transportation modelers often use discrete choice models called random utility maximization (RUM) models to forecast route shares. These models follow the microeconomic concept that an individual's choice among a set of options can be represented as if each option provides a certain level of *utility*, and the individual chooses the option with the highest level. The distinguishing feature of RUM models is that an option's utility is assumed to have both a systematic (or deterministic) component as well as a random (or stochastic) component that reflects, among other things, modelers' inability to fully account for all the factors that influence a choice decision. Because of the stochastic component, these models predict the *probability* of choosing each of the available options rather than the actual choice made.

In a route choice context, the general specification of the utility for a route *i* is as follows:

$$U_i = V_i + \varepsilon_i$$

where U_i is the utility of route *i*;

³ As is standard in modeling definitions, routes can mean actual routes or modes (such as ferries versus buses).

⁴ The model was also calibrated so that other parameters, such as the implied fare elasticity, would be consistent with previous studies and observed trends.

V_i is the systematic (or deterministic) part of the utility; and
 ε_i is the stochastic error term.

The travel utility experienced by users of a route is related to the route's price and service levels, as well as to trip and user characteristics. It is common to use a linear specification for the systematic utility term, in which case the route utility can be further decomposed as follows:

$$V_i = \alpha_i + \sum_{n=1}^N \beta_{in} X_{in}$$

where α_i is the route constant of route i . Route constants are terms included in route utility functions to reflect the inherent attractiveness of a route after its explicitly-modeled attributes have been accounted for. These constants represent the average contribution to a route's utility of non-modeled attributes.

$\beta_{i1}, \beta_{i2}, \dots, \beta_{iN}$ are route-specific coefficients for N level of service variables (such as in-vehicle time, access time, costs, frequency, on time performance) or socio-economic characteristics (such as income, large cities) for route i ; and
 $X_{i1}, X_{i2}, \dots, X_{iN}$ are values of the N level of service variables and socio-economic characteristics.

A multinomial logit RUM model assumes that the stochastic error terms of the different modes are independent and identically distributed with a Weibull distribution. This allows a particularly simple expression for the choice probabilities. For example, in a situation involving three alternate route choices - taking the proposed new POF from Bremerton, taking the existing WSF Vehicle Ferry from Bremerton or driving to the existing WSF Vehicle Ferry from Southworth - the multinomial logit model expresses the probability of choosing the POF route (or equivalently the POF route share) as follows:

$$Route\ Share_{POF} = \frac{e^{V_{POF}}}{e^{V_{WSF\ Bremerton}} + e^{V_{WSF\ Southworth}} + e^{V_{POF}}}$$

When calibrating the route choice models, a variety of explanatory variables are used, including in-vessel sail time, access and egress time, wait time, frequency, travel cost (including vehicle operating cost, parking, tolls and fare), and transfer time. The most satisfactory model specification is presented next. This is the model that is used for ridership forecasting.

Route Choice Model Calibration

The route choice models are assessing travelers' preferences for their existing route compared to the POF route. As mentioned, the calibration of the model strives to replicate the observed historical POF shares on the Bremerton to Seattle market that used the Kitsap Ferry Co. POF service in 2006, when its fare, sailing time and frequency most closely resemble those of the proposed new service. The calibration process also used results from earlier passenger ferry

studies in the Seattle region⁵, which provide an additional source of information of such factors as user response to varying fare levels on passenger ferries.

For model calibration purposes, two alternate routes were considered. Until 2003, the two options were:

- Use the WSF vehicle ferry (as a foot passenger)
- Use the WSF POF (operated until 2003)

In 2002 and early 2003, the WSF POF captured on average 40% of the market share. It was 10 minutes faster (50min compared with 60min), \$2 more expensive, and with similar frequencies. Crucially, fare integration was in place, as passengers could arrive at the pier and use either ferry service.

From late 2004 to Spring 2007, the two options were:

- Use the WSF vehicle ferry (as a foot passenger)
- Use the Kitsap Ferry Co. POF

In 2005, on its most successful year, the Kitsap Ferry Co. POF captured at most 10% of the market. On average, it captured 8% of the market share. It was 20 minutes faster (40min compared with 60min), but \$8 dollars more expensive, and with a less frequent service. Fare integration was not as good, because the Kitsap Ferry Co. and the WSF vehicle ferry were distinct services with respect to payment.

Table 5.2 summarizes the historical market shares observed between the WSF vehicle ferry and the previous POF services.

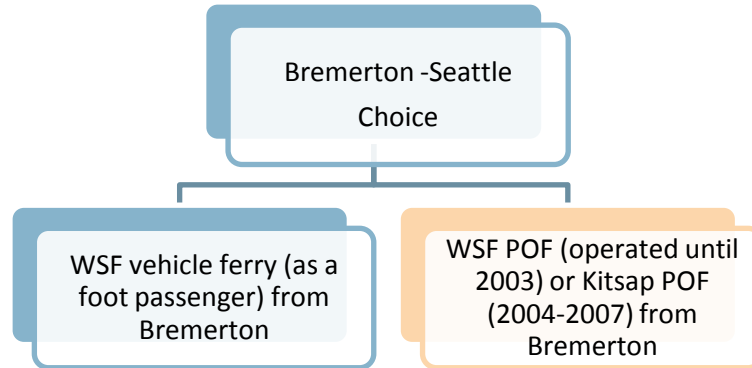
Table 5.2: Historical POF Market Shares between Bremerton and Seattle for Calibration Years (2003 and 2006)

Year	Ferry Service	Travel Time	Fare	Frequency	POF Fare integration	WSF Vehicle Ferry Market Share
2003	2003 WSF vehicle ferry	60 min	\$5.40	14 dep. from Seattle		60%
	2003 WSF POF	50 min	\$7.40	13 dep. from Seattle	strong	
2006	2006 WSF vehicle ferry	60 min	\$6.50	14 dep. from Seattle		92%
	2006 Kitsap Ferry Co. POF	40min	\$14	6/4 departures	weak	

⁵ Adler, T., Y. Dehghani, and C. Gihring, “Estimating Price Elasticities of Ferry Demand” *Transportation Research Record: Journal of the Transportation Research Board*, No. 2176, 2010, pp. 59–66. DOI: 10.3141/2176-07

Figure 5.1 shows the model structure used for calibration, a standard binary logit structure with two available choices considered.

Figure 5.1: Binary Logit Structure Used for the Bremerton to Seattle Route Choice Model calibration



The attributes included in our final model include total travel cost (comprising access and egress costs, fares, gas cost and parking cost), in-vehicle time, access and egress time, wait time, service frequency (in round trips per day), and route constants.

The model coefficients were calibrated to reproduce the market shares observed in the past, given the level of services provided at the time and subject to the following constraints:

- Value of time (VOT) of \$12.00 per hour for in-vessel time
- Value of wait time 1.5 times the in-vessel time VOT⁶

Table 5.3 summarizes the calibrated model coefficients used in application.

⁶ As used in travel demand modeling, the VOT represents the amount that a traveler would be willing to pay in order to save a unit of time. The VOT can be inferred from the logit model utility function, as it is the marginal rate of substitution between time and cost. In a linear utility function, this is the ratio of the time and cost coefficients. Separately, the value of travel time for local can be related to a percentage of prevailing wage rates (usually 35 to 60%⁷). With a median hourly wage of \$22.43/hr⁷ and a mean of \$28.36 in the Seattle MSA, a VOT of \$12/hr for local travel might be expected.

Table 5.3: Multinomial Logit Model Coefficients

Route Choice Model		Coefficients
Variable	Units	Value
<i>Time – In Vehicle</i>	Minutes	-0.0142
<i>Time – Wait</i>	Minutes	-0.0213
<i>Cost</i>	Dollars ⁽¹⁾	-0.0711
<i>Frequency Damping Factor</i>	See ⁽²⁾	2.0000
<i>POF Route Constant</i>	(0,1) ⁽³⁾	-0.8537

(1) Monetary values in 2013\$

(2) Frequency Damping Factor takes the form $\log(1 - \exp[-0.2 * \text{freq in ferry per day}])$

(3) Dummy variables, taking the value 0 or 1.

Source: SDG analysis

Route choice model coefficients are more readily interpreted when converted into time and monetary values. Table 5.4 shows the corresponding VOTs as calculated from the route choice models. It also includes the values of the route constants both in time and monetary equivalents.

Table 5.4: Value of Time and Value of Route Constant

Value of Time (VOT) and route constants	Business
<i>In-vehicle time VOT (\$/hr)</i>	\$12.00
<i>Wait time VOT (\$/hr)</i>	\$18.00
<i>POF penalty (route constant)</i>	1hr

Note: All monetary values in 2013\$

Source: SDG analysis

The VOT of \$12.00 per hour was defined with reference to the regional wage rate (VOT has been shown to be consistently tied to wage rates). This value of time is also within the ranges recommended by the 2011 USDOT guidance⁷ and is also aligned with SDG's previous analyses of ferry markets within North America.

⁷ US Department of Transportation, Office of the Secretary of Transportation, *Revised Departmental Guidance on Valuation of Travel Time in Economic Analysis*, September 28, 2011. The USDOT recommends an array of values of time for different categories of travel, according to income, trip purpose, route and distance. For surface modes, the guidance recommends VOTs for local urban travel in a range from 35% to 60% of personal hourly income (annual household income divided by 2080).

The route choice model also includes service frequency as a determinant of market capture, as well as a route-specific constant that captures the innate preferences of users for a ferry service such as the ones being proposed relative to the existing alternatives⁸.

Route Choice Model Application

Bremerton to Seattle Service

The Bremerton to Seattle ridership analysis actually benefitted from two separate approaches. When applying the model to the WSF vehicle ferry foot passengers (which we call Method 1) only two routes are considered: Using the proposed POF or remaining on the WSF Vehicle Ferry from Bremerton. When applying the model to the market obtained from the CTPP JTW data (which we call method 2) three routes are considered: Using the proposed POF from Bremerton, remaining on the existing WSF vehicle ferry from Bremerton or using the existing WSF vehicle ferry from Southworth.

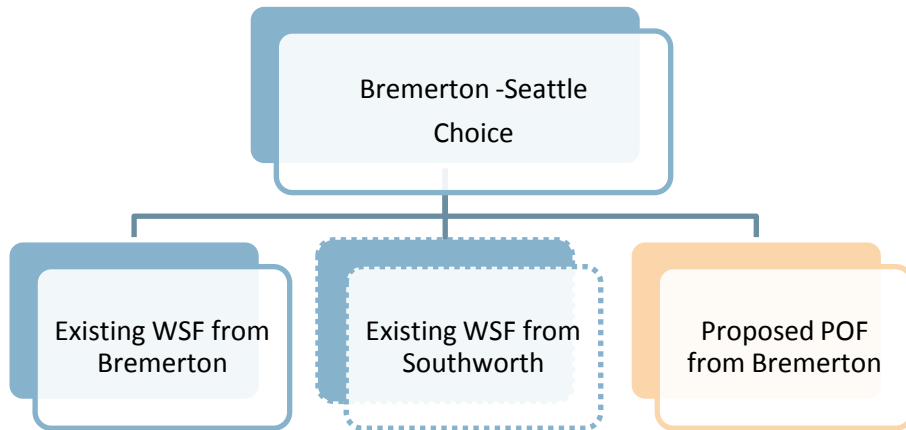
The route choice model was applied to predict, for each zone pair, the fraction of travelers who would prefer the proposed POF route. The Bremerton to Seattle route choice model uses a binomial logit form for Method 1 or a multinomial logit form for Method 2, computing the probability that a traveler making a particular trip will choose the POF route given the service and cost characteristics for each alternate route.

Figure 5.2 shows the multinomial logit model structure used in the Bremerton to Seattle route choice model to forecast route shares. Note that the multinomial form represented is a generalization of the binary form presented in Figure 5.1 used for Method 1.

⁸ A number of different functional forms were tested to represent the contribution of service frequency to utility, ranging from a linear specification, to inverse frequency (average headway), to a “damped” frequency. In market models with 2 or less departures per hour, the damped frequency specification has frequently been preferred as it captures well the diminishing effect of increasing service frequency.

The route constant was developed to account for unobserved attributes and calibrated based on the observed market shares. The route constants represent the relative attractiveness of POF to these different types of travelers beyond the effects of the conventional level of service variables. The WSF vehicle only route is taken as the reference route with an implicit route constant of 0. It was estimated to be equivalent to a 60 min line-haul time compared to the reference route (Table 5.4) suggesting that the existing WSF vehicle ferry route attributes such as reliability and fare integration are highly valued relative to unrepresented POF attributes. This is consistent with findings in SDG’s previous studies and existing literature.

Figure 5.2: Multinomial Logit Structure Used For the Bremerton to Seattle Route Choice Model Application



Kingston to Seattle Service

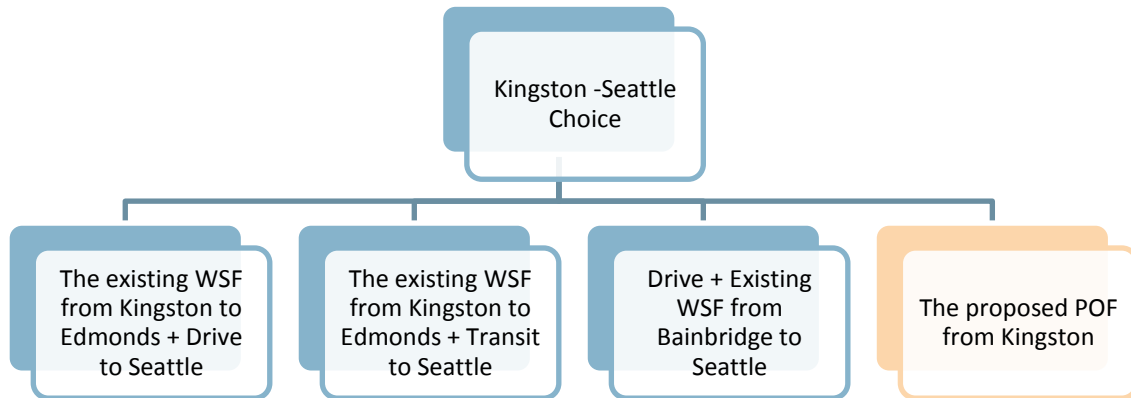
The Kingston to Seattle route choice model is only based on the CTPP JTW data as there is no existing service with a foot passenger market to define the potential market, as is the case with the Bremerton to Seattle market (and its Method 1 modeling approach). Kingston to Seattle also uses a multinomial logit form to compute the probability that a traveler making a trip between Kingston and Seattle will choose the POF route.

With the introduction of a new POF between Kingston and Seattle, travelers would have a choice between 4 alternate routes:

- The proposed POF from Kingston
- The existing WSF from Kingston to Edmonds and then drive to Seattle
- The existing WSF from Kingston to Edmonds and then transit to Seattle
- Drive and then the existing WSF from Bainbridge to Seattle

Figure 5.3 shows the multinomial logit model structure used in the Kingston to Seattle route choice model to forecast route shares. As with the Bremerton to Seattle model the VOT is equal to \$12 per hour and the modal constant equal to 1 hour of travel time.

Figure 5.3: Multinomial Logit Structure Used For the Kingston to Seattle Route Choice Model



Southworth to Seattle Service

The Southworth to Seattle ridership analysis is also based uniquely on the CTPP JTW data, and also uses a multinomial logit form to compute the probability that a traveler making a trip between Southworth and Seattle will choose the POF.

With the introduction of a new POF between Southworth and Seattle, travelers would have a choice between 5 alternate routes:

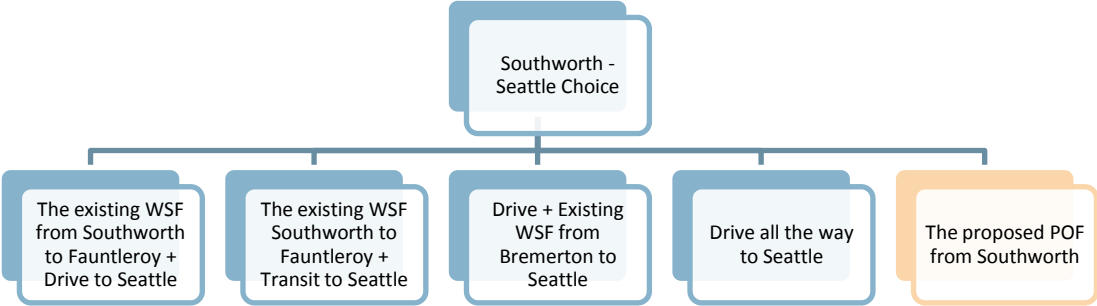
- The proposed POF from Southworth
- The existing WSF from Southworth to Fauntleroy and then drive to downtown Seattle
- The existing WSF vehicle ferry Southworth to Fauntleroy and then transit to downtown Seattle
- Drive and then use the existing WSF from Bremerton to downtown Seattle
- Drive all the way to downtown Seattle

Figure 5.4 shows the multinomial logit model structure used in the Southworth to Seattle route choice model to forecast route shares. Once again VOT is equal to \$12 an hour and the modal constant is equal to 1 hour.

Induced Demand

As the introduction of new transportation services will improve accessibility within the region, this may result in trips being made that were not made before. These are called *induced* trips, and ridership analyses for new services often try to estimate the degree to which induced trips will be generated. However, for the present analysis it is felt that induced ridership is likely to be small given the existing connections available. Therefore SDG has taken a conservative approach here and did not include an estimate of induced demand.

Figure 5.4: Multinomial Logit Structure Used For the Southworth to Seattle Route Choice Model



6 Ridership Modeling and Results

Outputs of the ridership model were produced for each of the potential routes. All results were produced for the base year which was dependent on which approach was used to estimate the total market: 2010 was used as the base year for the Southworth and Kingston routes; the base years for the Bremerton route were 2013 and 2010 for Methods 1 and 2 respectively. All revenue estimates are in current 2014 dollars and are based on the full fare.

Bremerton to Seattle

As mentioned, two methods were used to forecast the ridership for the Bremerton to Seattle POF route: Method 1, which is based on the existing WSF vehicle ferry foot passenger ridership, and Method 2, which is based on the number of commuters from Bremerton to Seattle. Method 1 is preferred since it is based on observed demand using a passenger ferry mode.

The results from both methods are displayed below. The level of service characteristics of the following routes were used to produce the ridership forecasts:

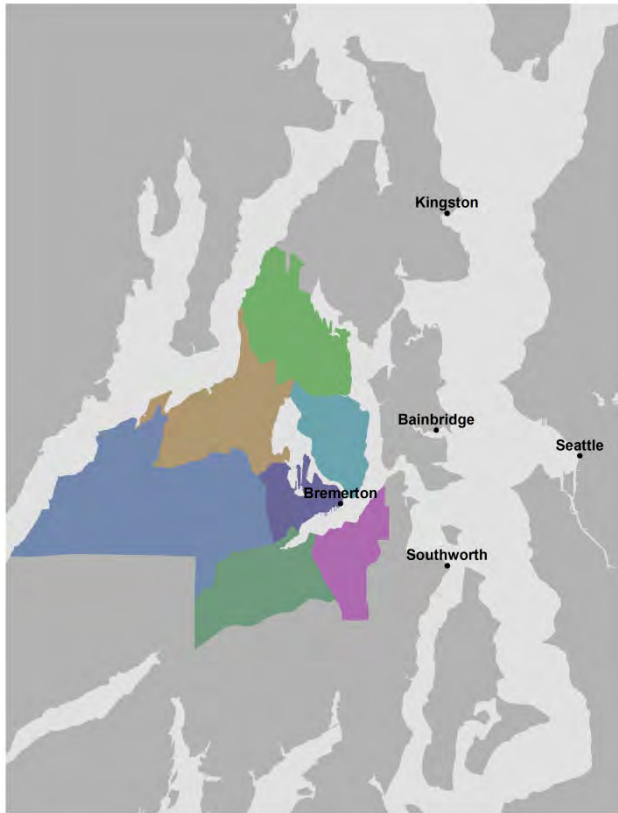
- Proposed POF Service
- Existing WSF vehicle ferry
- Existing WSF Southworth Ferry + auto/transit (for Method 2 only)

Table 6.1: Bremerton – Seattle Alternative Routes Level of Services

Alternative Routes LOS	Proposed POF Service	Existing WSF Bremerton Ferry	Existing Southworth Ferry + auto/transit
Travel time	28 minute crossing	60 minute crossing	70 minute travel time (drive time + crossing)
Round trip cost	\$11	\$8	\$19.85
Frequency	6 -12 round trips/day	15 round trips/day	24 round trips/day

When Method 2 is used to estimate the potential POF demand, a catchment area for the route must be defined. The number of commuters within the catchment area is then used to estimate the total potential demand. Figure 6.1 shows the catchment area used for Bremerton to Seattle POF route.

Figure 6.1: Bremerton – Seattle Catchment Area



Annual Forecast via Method 1

Under Method 1 there are two route alternatives: The proposed POF and the existing WSF vehicle ferry. Given the service characteristics detailed in Table 6.1, the daily ridership for 6 round trips is estimated to be 850 trips. Under an assumption of 12 round trips, forecasted daily ridership increases to 1,677 trips.

Table 6.2: Bremerton – Seattle Ridership Estimates (Method 1, 2013 Data)

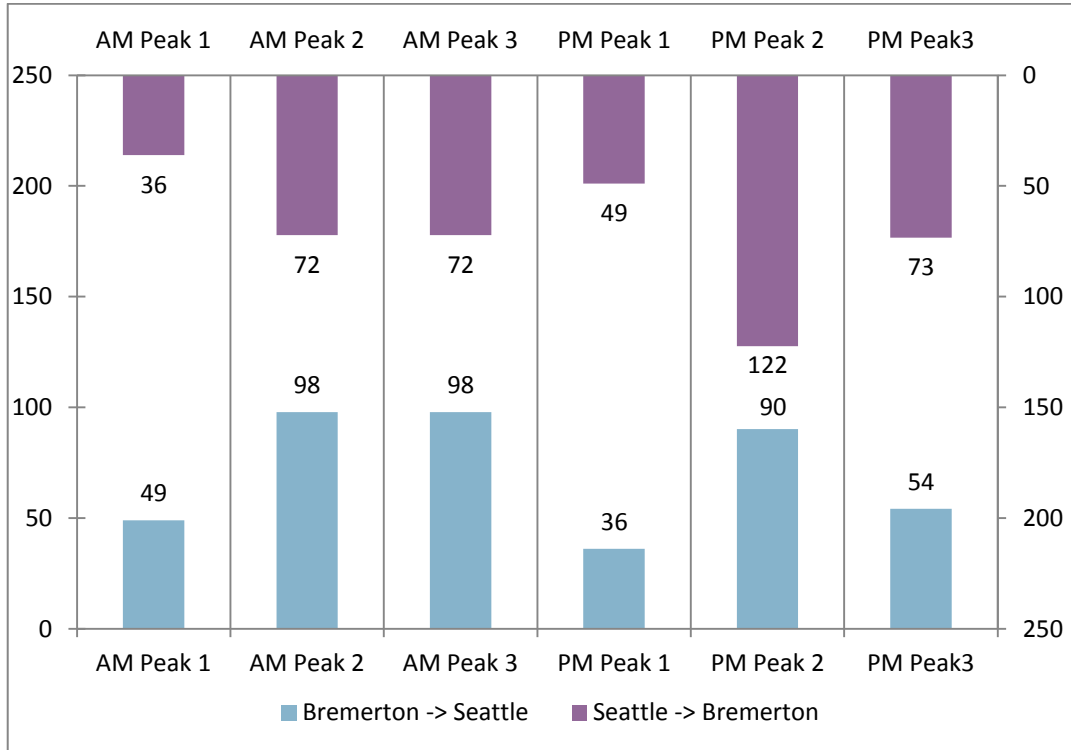
Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)	Average Riders per day and per sail
6 Round trips/day	1.37M	212,544	\$1.2M	850/day 71/sail
12 Round trips/day	1.37M	419,174	\$2.3M	1,677/day 70/sail

Daily Ridership by Sailing

Ridership by sailing was estimated by applying the observed hourly distribution of foot passengers on the existing WSF vehicle ferry. The directionality of the passenger flow was estimated by applying the observed directionality split observed during the AM peak of the previous POF

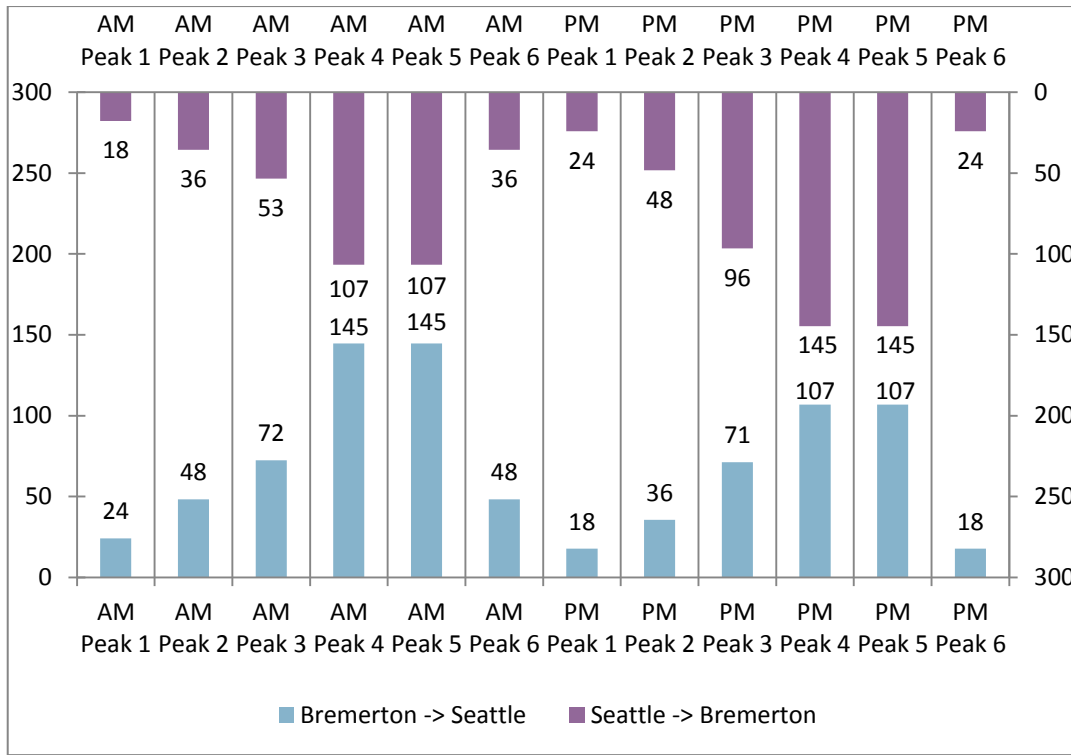
service operated by the Kitsap Ferry Co. The proposed service will use a vessel with a capacity of 118, and an assessment of potential crowding on the service is essential. Figures 6.2 and 6.3 show the forecasted passenger flow in each direction for the 6 and 12 round trips respectively.

Figure 6.2: Bremerton-Seattle Ridership by Sailing, 6 Round Trips per Day



The highest ridership sailings in the 6 round trip scenario are the PM peak sailing from Seattle and the AM peak sailings to Seattle. The highest PM peak sailing is forecasted to be slightly over capacity at 122 passengers.

Figure 6.3: Bremerton-Seattle Ridership by Sailing, 12 Round Trips per Day



The highest ridership sailings in the 12 round trip scenario include some AM peak trips to Seattle and the corresponding return trips to Bremerton during the PM Peak. While several individual sailings are over capacity, there is ample room for peak spreading.

Annual Forecast via Method 2

There are three Alternatives under Method 2: The proposed POF service, the existing WSF vehicle ferry and the Southworth service. The daily ridership for 6 round trips is estimated to be 563 trips; and under an assumption of 12 round trips daily ridership increases to 1,154 trips.

Table 6.3: Bremerton – Seattle Ridership Estimates (Method 2 – 2010 Data)

Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)	Average Riders per departure
6 Departures/day	1.16M	140,650	\$0.8M	563/day 47/sail
12 Departure/day	1.16M	288,440	\$1.6M	1,154/day 48/sail

Daily Ridership by Sailing

The total market demand is based not on current foot passengers as in Method 1, but on the number of people who live in the Bremerton catchment area that work in downtown Seattle. The number of JTW trips was expanded to the entire population, and now the directionality of

passengers assumes that all trips are taken in the direction of Seattle in the AM peak and Bremerton in the PM peak.

Ridership by sailing was estimated by applying the observed hourly distribution of foot passengers on the existing WSF vehicle ferry; this assumption is made to effectively identify the highest level of crowding one could expect. As mentioned previously, however, Method 1 is the preferred method for forecasting potential ridership from Bremerton. The proposed service will use a vessel with a capacity of 118. Figures 6.4 and 6.5 show the forecasted passenger flow in each direction for the 6 and 12 round trips respectively.

Figure 6.4: Bremerton-Seattle Ridership by Sailing, 6 Round Trips per Day

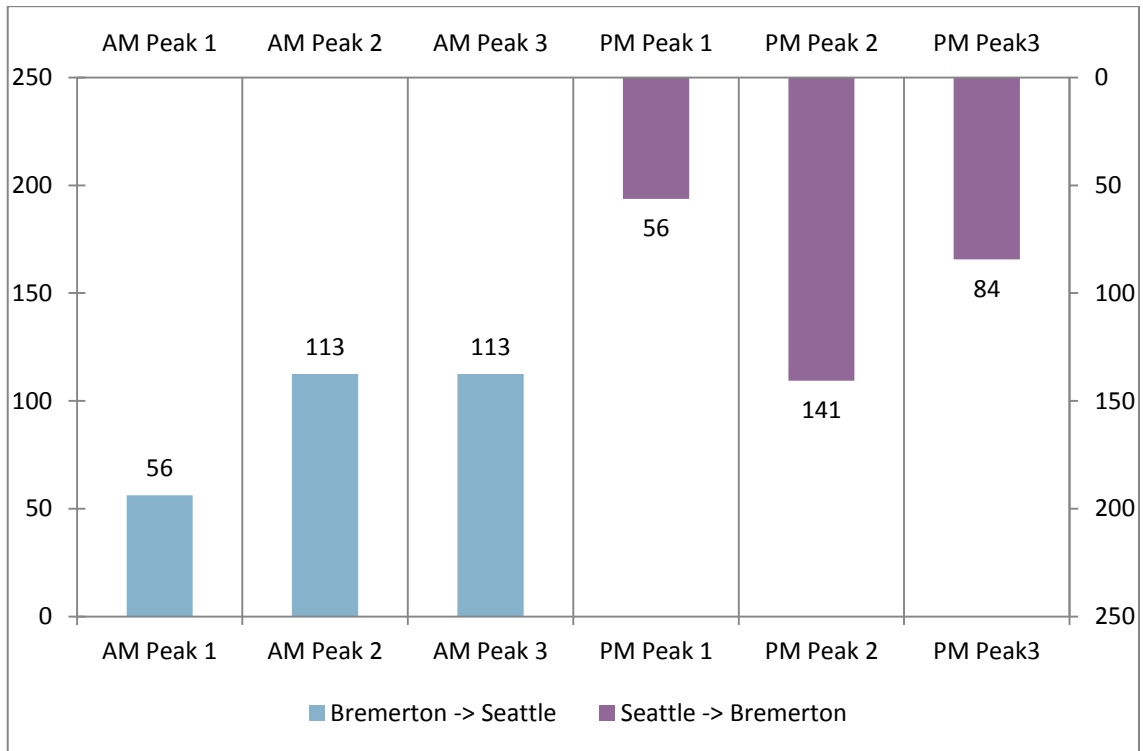
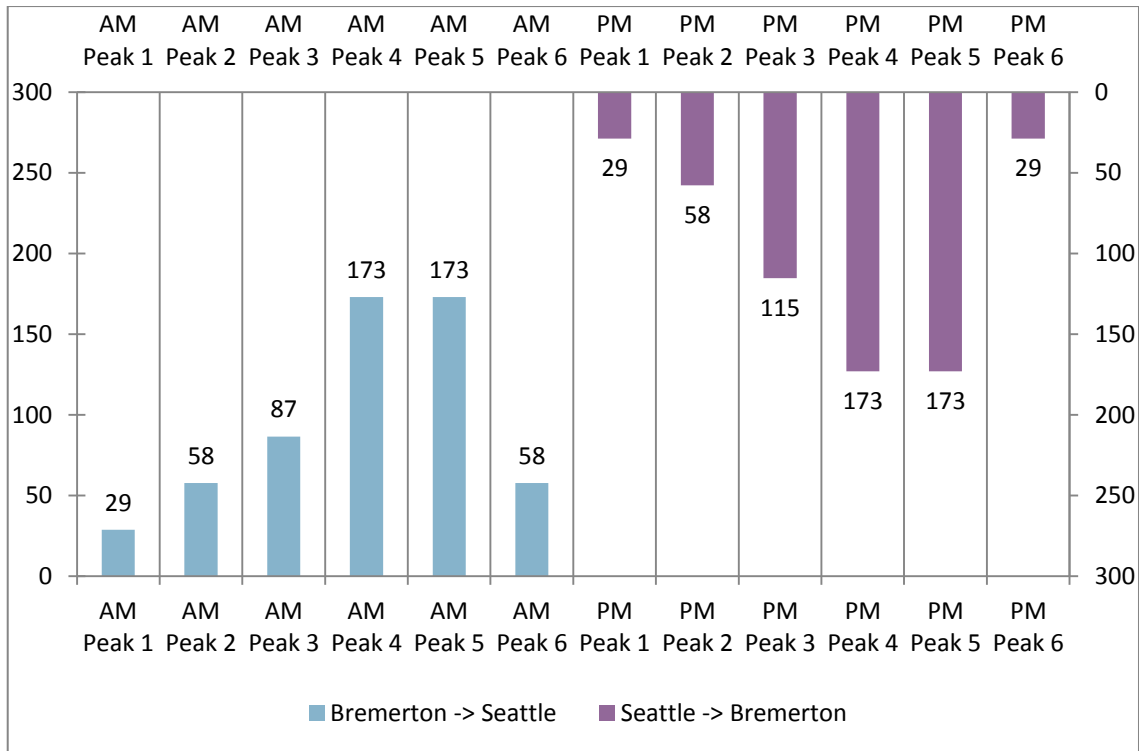


Figure 6.5: Bremerton-Seattle Ridership by Sailing, 12 Round Trips per Day



The Method 2 results by sailing follow the same general distribution as Method 1, but due to the lack of contraflow in the JTW data, the forecasted distribution by sailing experiences more severe capacity issues. In addition to a few sailings being far over capacity, there is less room on other sailings for users to utilize peak spreading.

Kingston to Seattle

Only Method 2 could be used for the Kingston route. Method 1 cannot be applied in this route because there is not an existing service that provides a service along the same route as the proposed POF route. The level of service characteristics of the following routes were used to produce the ridership forecasts:

- Proposed POF Service
- Existing Kingston Ferry and auto
- Existing Kingston Ferry and transit
- Drive and Existing Bainbridge Ferry

Table 6.4: Kingston – Seattle Alternative Routes Level of Services

Alternative Routes LOS	Proposed POF Service	Existing WSF Vehicle Ferry King - Edmonds + Drive to Sea	Existing WSF Vehicle Ferry King - Edmonds + Transit to Sea	Drive + Existing WSF Vehicle Ferry Bainbridge - Sea
Travel time	32 minute crossing	60 minutes	80 minutes	35 minutes
Round trip cost	\$15	\$47.80	\$15	\$17.95
Frequency	6 -12 round trips/day	15 round trips/day	4 round trips/day	21 round trips/day

When Method 2 is used to estimate the potential POF demand, a catchment area for the route must be defined. The number of commuters within the catchment area is then used to estimate the total potential demand. Figure 6.6 shows the catchment area used for Kingston to Seattle POF route.

Annual Forecast Via Method 2

Daily ridership for 6 round trips is estimated to be 669 trips. Under an assumption of 12 round trips, daily ridership increases to 1,317 trips.

Figure 6.6: Kingston – Seattle Catchment Area

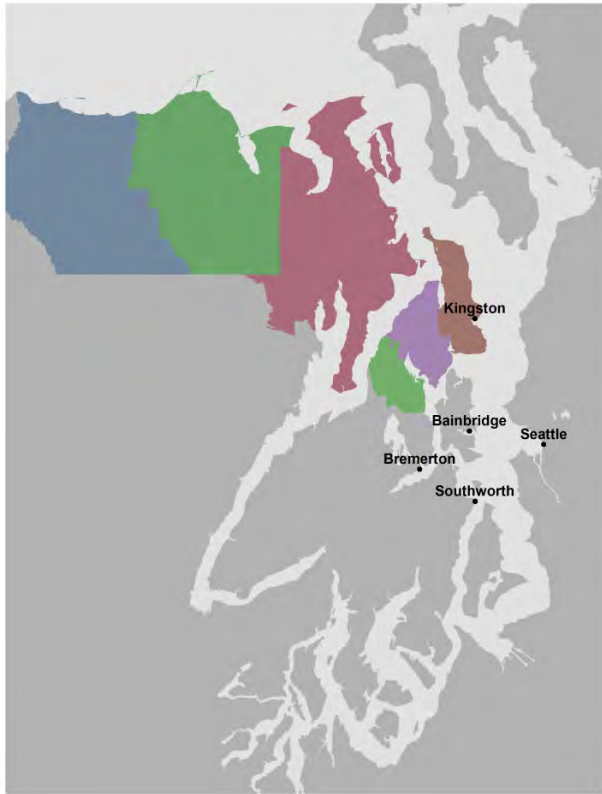


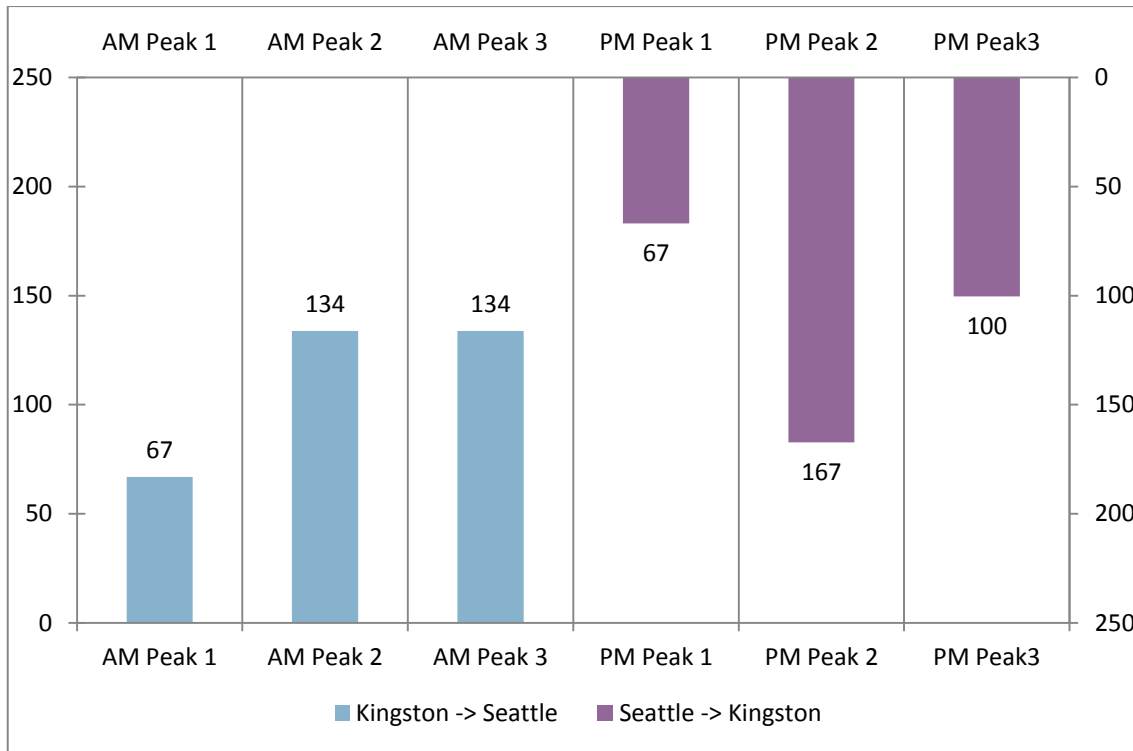
Table 6.5: Kingston – Seattle Ridership Estimates (Method 2 – 2010 Data)

Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)	Average Riders per day and per sail
6 Departures/day	1.07M	167,325	\$1.3M	669/day 56/sail
12 Departure/day	1.07M	329,283	\$2.5M	1,317/day 55/sail

Daily Ridership by Sailing

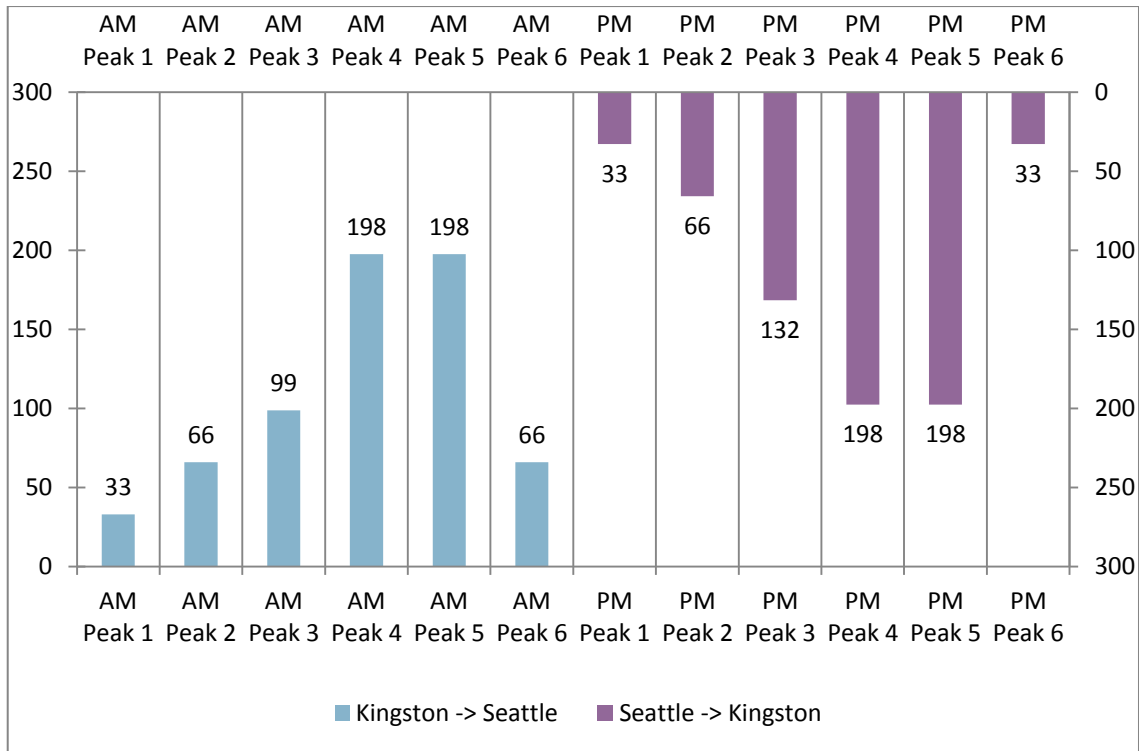
Ridership by sailing was estimated by applying the observed hourly distribution of foot passengers on the existing WSF Bremerton-Seattle vehicle ferry. The total market demand is based on the number of people who live in the Kingston catchment area that work in downtown Seattle. While the number of journey to work trips was expanded to the entire population, the directionality of passengers assumes that all trips are taken in the direction of Kingston commuters. This assumption is made to illustrate the most extreme case of crowding. The proposed service will use a vessel with a capacity of 150. Figures 6.7 and 6.8 show the forecasted passenger flow in each direction for the 6 and 12 round trips respectively.

Figure 6.7: Kingston-Seattle Ridership by Sailing, 6 Round Trips/Day



The highest ridership sailings in the 6 round trip scenario are in the PM peak sailing from Seattle to Kingston and the two most popular AM peak sailings. The highest PM peak sailing is over capacity with 167 passengers.

Figure 6.8: Kingston-Seattle Ridership by Sailing, 12 Round Trips/Day



In both the AM and PM peak the highest ridership sailings are over capacity in the 12 round trip scenario. The adjacent sailings have room to accommodate the excess demand, but one could expect some riders to forego the POF service because of peak crowding.

Southworth to Seattle

Method 2 is used to forecast the ridership for the Southworth to Seattle POF, based on the number of commuters from the catchment area to Seattle. The level of service characteristics of the following routes were used to produce the ridership forecasts:

- Proposed POF Service
- Existing Southworth Ferry and auto
- Existing Southworth Ferry and transit
- Drive and Existing Bremerton Ferry
- Drive all the way to Seattle

Table 6.6: Southworth – Seattle Alternative Routes Level of Services

Alternative Routes LOS	Proposed POF Service	Existing WSF Vehicle Ferry Southworth - Fautleroy + Drive to Seattle	Existing WSF Vehicle Ferry Southworth - Fautleroy + Transit to Seattle	Existing WSF vehicle Ferry Southworth-Fautleroy + Water Taxi to Seattle	Drive + Existing WSF Vehicle Ferry Bremerton - Seattle	Drive all the way to Seattle
Travel time	23 minutes	60 minutes	80 minutes	50 minutes	60 minutes	70-90 minutes
Round trip cost	\$11	\$55.40	\$11.25	\$11.00	\$17.95	\$30-35
Frequency	6 -12 round trips/day	24 round trips/day	24 round trips/day	6 round trips/day	15 round trips/day	N/A

In this market area, the optimal route to Seattle involves a combination of the above alternatives. The optimal route involves taking the existing WSF Vehicle Ferry from Southworth to Fautleroy and utilizing transit from Fautleroy to Seattle, then returning using the King County Water Taxi from Seattle to Vashon Island and taking the exist; WSF vehicle ferry from Vashon Island to Southworth. The optimal route would take 50 minutes and have a round trip cost of \$7.25 with only 6 round trips per day. The optimal route was incorporated into the model.

When Method 2 is used to estimate the potential POF demand, a catchment area for the route must be defined. The number of commuters within the catchment area is then used to estimate the total potential demand. Figure 6.9 shows the catchment area used for Kingston to Seattle POF route.

Annual Forecast via Method 2

Daily ridership for 6 round trips is estimated to be 555 trips. Under an assumption of 12 round trips, daily ridership increases to 1,301 trips.

Figure 6.9: Southworth-Seattle Catchment Area

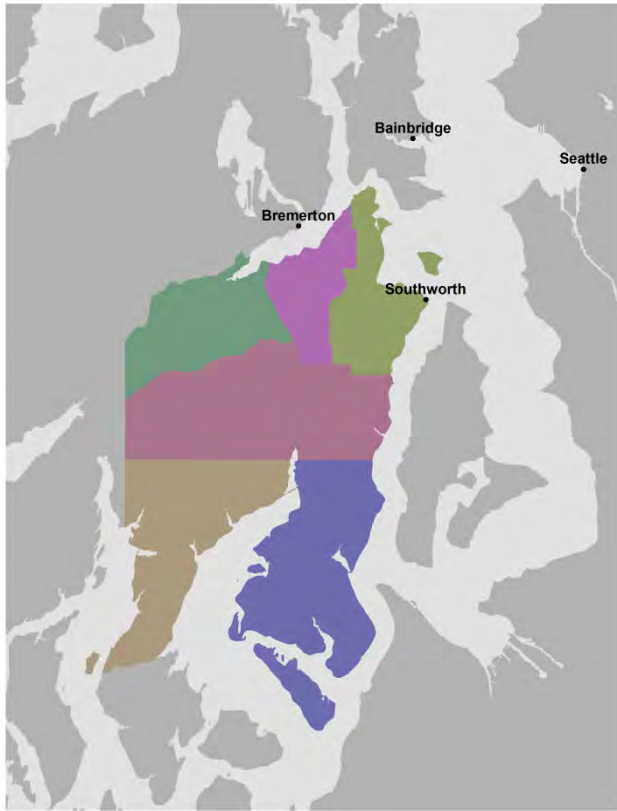


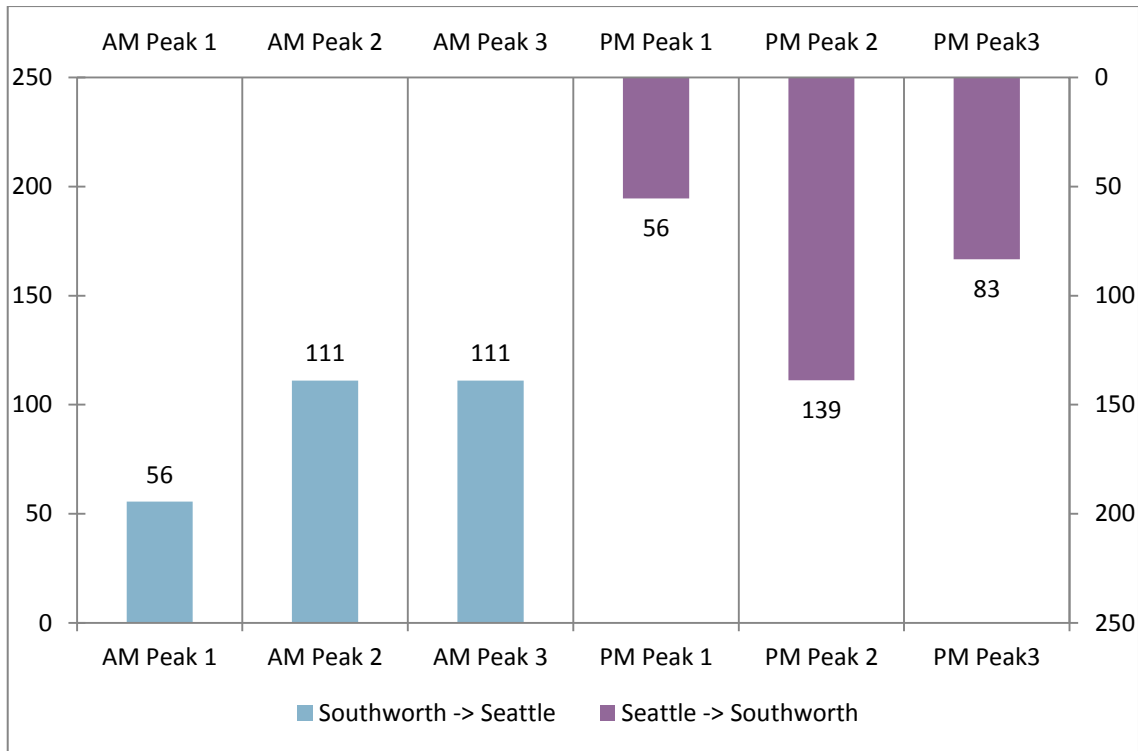
Table 6.7: Southworth – Seattle Ridership Estimates (Method 2 – 2010 Data)

Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)	Average Riders per day and per sail
6 Departures/day	0.67M	138,805	\$0.8M	555/day 46/sail
12 Departure/day	0.67M	257,804	\$1.4M	1,301/day 43/sail

Daily Ridership by Sailing

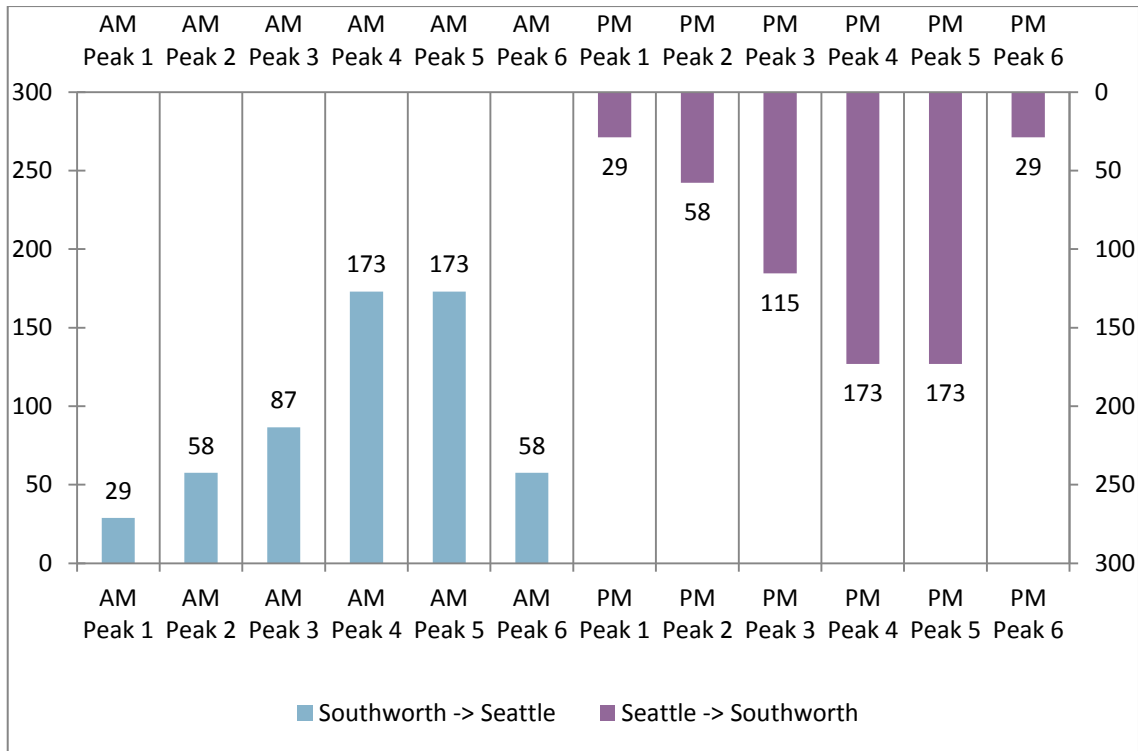
Ridership by sailing was estimated by applying the observed hourly distribution of foot passengers on the existing WSF Bremerton-Seattle vehicle ferry. The total market demand is based on the number of people who live in the Southworth catchment area that work in downtown Seattle. As with the Kingston to Seattle service, the directionality of passengers assumes that all trips are taken in the direction of Southworth commuters. This assumption is made to illustrate the most extreme case of crowding. The proposed service will use a vessel with a capacity of 150. Figures 6.10 and 6.11 show the forecasted passenger flow in each direction for the 6 and 12 round trips respectively.

Figure 6.10: Southworth-Seattle Ridership by Sailing, 6 Round Trips per Day



The highest ridership sailings in the 6 round trip scenario are in the PM peak sailings from Seattle to Kingston or the AM peak sailings to Seattle. None of the sailings in this service scenario are over capacity.

Figure 6.11: Southworth-Seattle Ridership by Sailing, 12 Round Trips per Day



In both the AM and PM peak the highest ridership sailings are over capacity in the 12 round trip scenario. The adjacent sailings have room to accommodate the excess demand, but as with Kingston some of the forecast ridership could not materialize in practice due to crowded peak period conditions.

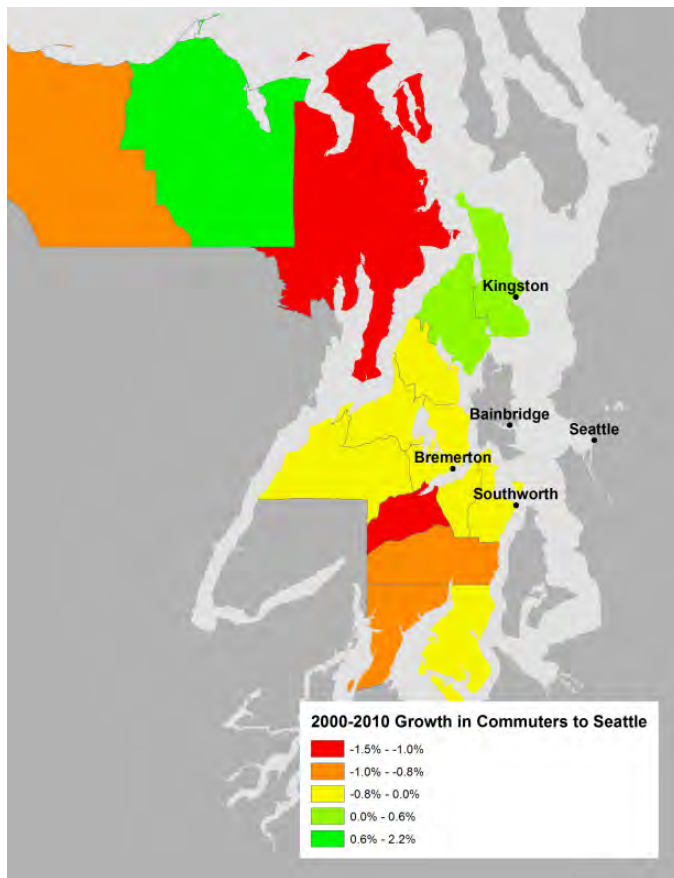
7 Growth Assumptions for Ferry Foot Passengers

SDG forecasts so far have been based on either 2010 JTW data or 2013 foot passenger volumes. Sound assumptions regarding the general growth in potential passengers beyond these years must be developed to account for longer term growth

As shown in Figure 7.1, the trend in commutation to Seattle from the selected catchment area between 2000 and 2010 does not suggest much growth. However, this is not necessarily consistent with population or labor force growth in the same catchment area (as detailed in Section 4), suggesting a relative decline in cross-county commutation relative to county growth.

The trend in WSF foot passengers also shows overall decline since 1999, with a CAGR between 1999 and 2013 of -2.6%. However, as shown in Figure 1.1 the overall decline is arguably due to the reduced service levels and eventual discontinuing of the WSF POF service in the early 2000s. After 2004, the foot passenger volumes have actually shown growth, averaging 1.2% a year.

Figure 7.1: Growth in Commutation to Seattle from Catchment Area



Accounting for the change in foot passenger demand due to the reduction in POF service suggests that foot passenger growth has been closely tied to regional employment growth: Between 2004

and 2013 total growth in employment in Kings County and Kitsap County was 1% a year, close to the growth in foot passenger volumes.

Based on this analysis, SDG assumes that growth in potential demand for the three services will increase by 1.2% a year from 2010 (or 2013 in the case of Bremerton to Seattle) to 2015, and then by 1% a year to 2035.

Application of Growth Rates

The above growth rates have been applied to grow the ridership forecasts through 2030. The below forecasts show the results of this growth for three milestone years, 2015, 2020 and 2030. The below results are based on the 6 round trip scenario for each of the route and the base case fare. The base fare is \$11 for the Bremerton and Southworth routes and \$15 for the Kingston route. As in Chapter 6, all revenues are based on the full fare.

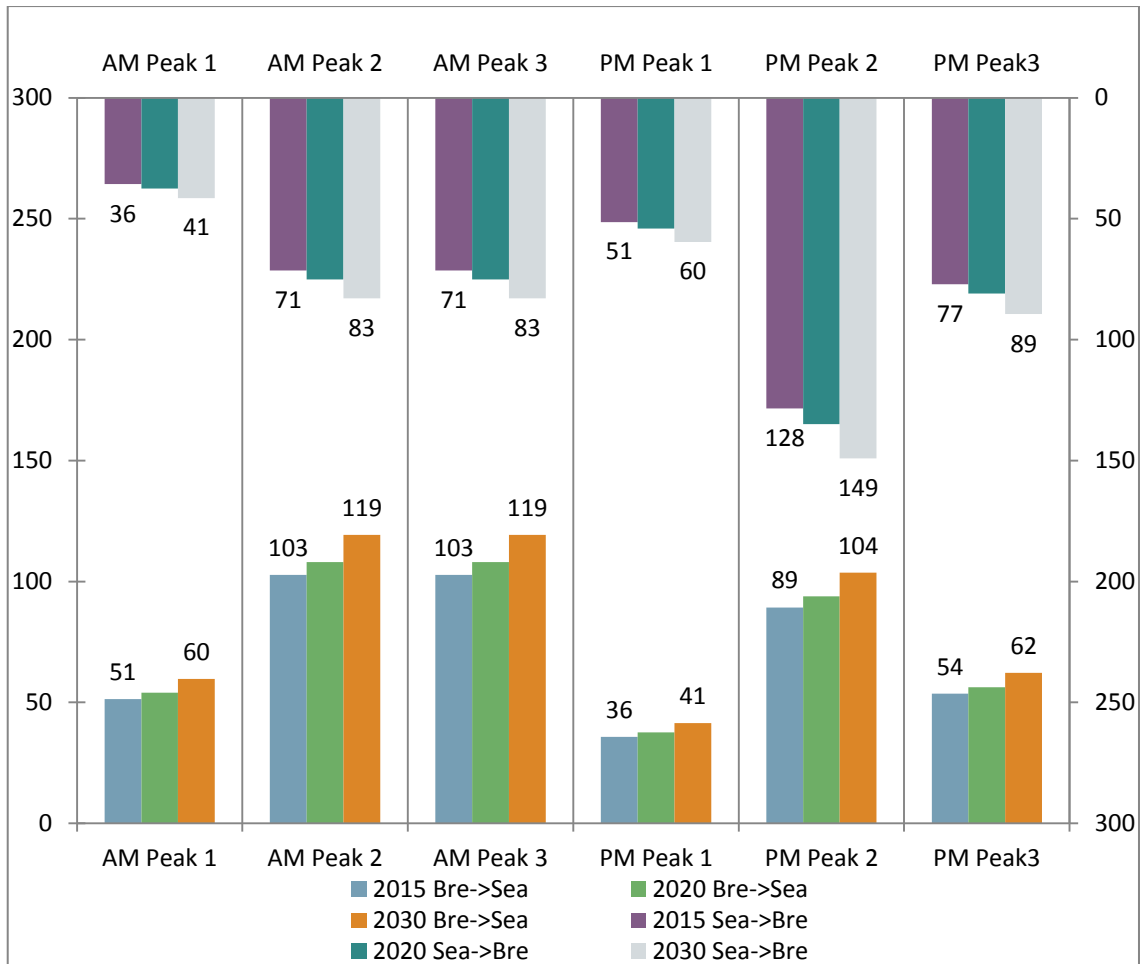
Bremerton to Seattle

Table 7.1: Bremerton-Seattle – Method 1

Scenario	2015		2020		2030	
	Ridership	Revenue	Ridership	Revenue	Ridership	Revenue
6 Round Trips/Day	217,676	\$1.2M	228,779	\$1.3M	252,715	\$1.4M
12 Round Trips/Day	429,294	\$2.4M	451,193	\$2.5M	498,398	\$2.7M

As shown in Figure 7.2, the highest PM sailing to Bremerton is over the vessel's 118 capacity for all years. The adjacent sailings have room to accommodate the excess demand, but as with Kingston some of the forecast ridership could not materialize in practice due to crowded peak period conditions. By 2030 the highest two AM sailings will be slightly over capacity with 119 passengers.

Figure 7.2: Bremerton-Seattle Ridership by Sailing – 6 Round Trips



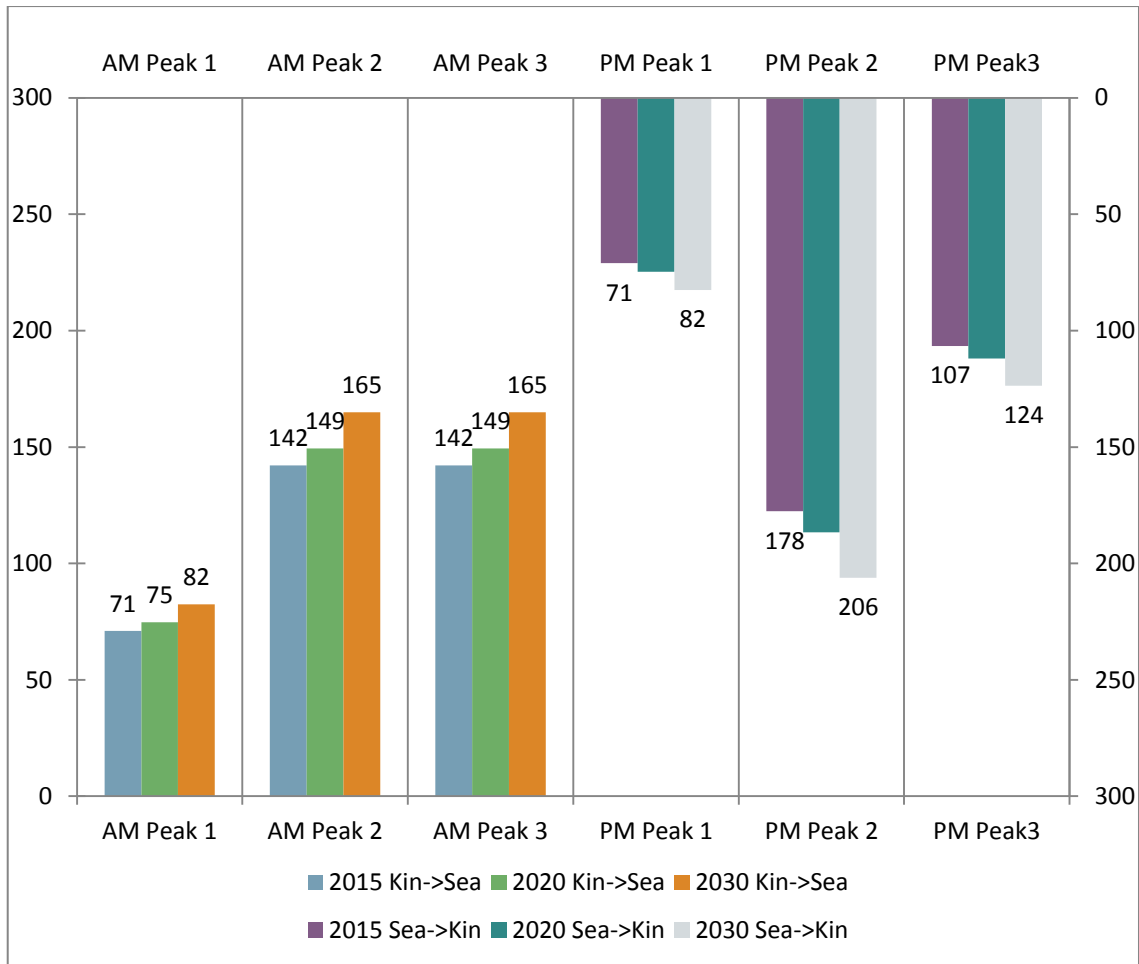
Kingston to Seattle

Table 7.2: Kingston-Seattle – Method 2

Scenario	2015		2020		2030	
	Ridership	Revenue	Ridership	Revenue	Ridership	Revenue
6 Round Trips/Day	177,608	\$1.3M	186,688	\$1.4M	206,198	\$1.4M
12 Round Trips/Day	349,520	\$2.6M	367,349	\$2.8M	405,782	\$2.7M

As shown in Figure 7.3, the highest PM sailing to Kingston is over the vessel’s 150 capacity for all years. The adjacent sailings have room to accommodate the excess demand, but one could expect some riders to forego the POF service because of peak crowding. By 2020 the highest two AM sailings will have reach the vessel’s capacity. With two of the three AM peak sailings at capacity there will be little room for peak spreading.

Figure 7.3: Kingston-Seattle Ridership by Sailing – 6 Round Trips



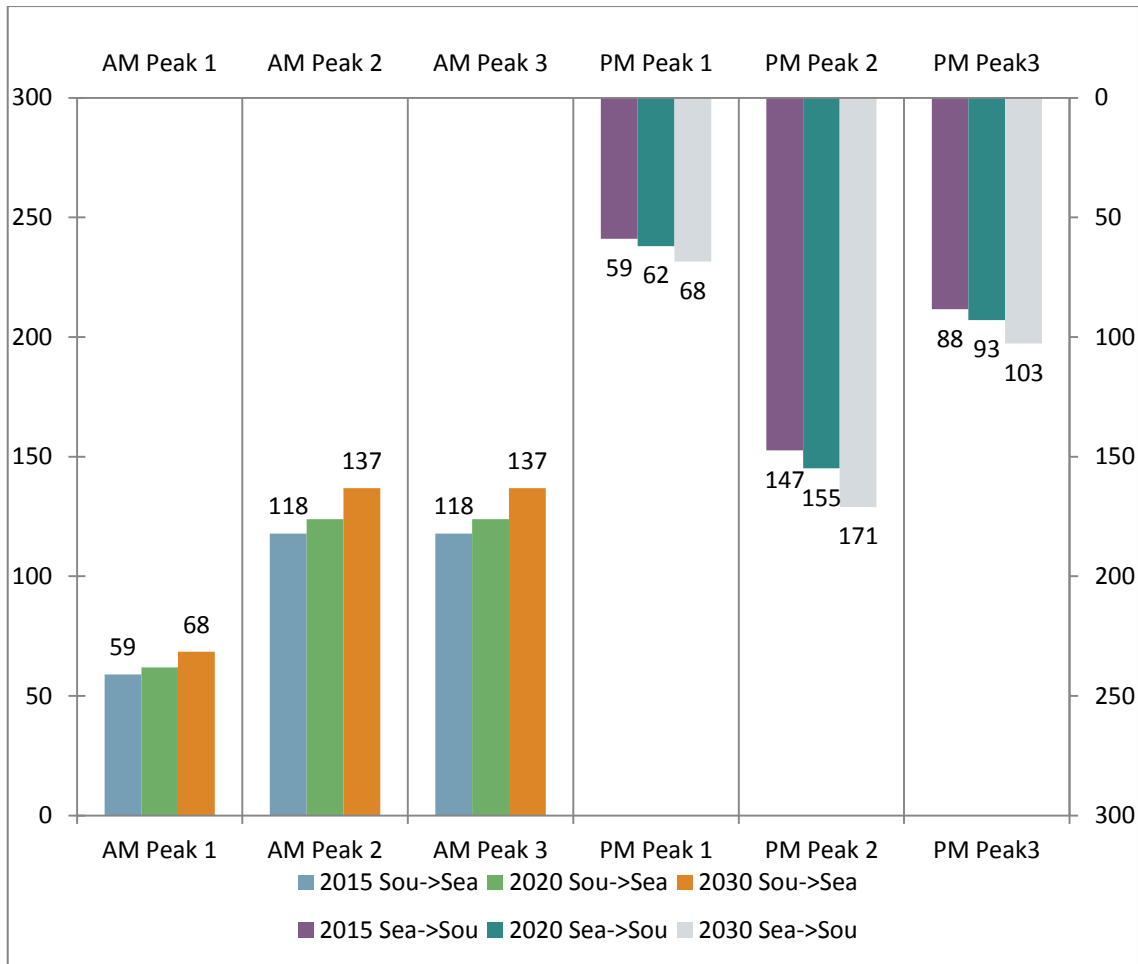
Southworth to Seattle

Table 7.3: Southworth-Seattle – Method 2

Scenario	2015		2020		2030	
	Ridership	Revenue	Ridership	Revenue	Ridership	Revenue
6 Round Trips/Day	147,335	\$0.8M	154,851	\$0.9M	171,052	\$0.9M
12 Round Trips/Day	273,648	\$1.5M	287,607	\$1.6M	317,697	\$1.7M

As shown in Figure 7.4, the highest PM sailing to Southworth is over the vessel’s 150 capacity by 2020. The adjacent sailings have room to accommodate the excess demand, but one could expect some riders to forego the POF service because of peak crowding. There are no forecasted capacity issues with any of the AM sailings.

Figure 7.4: Southworth-Seattle Ridership by Sailing – 6 Round Trips



8 Sensitivities and Scenario Analysis

Fare Sensitivity

Various scenarios were performed to assess the sensitivity to fare levels for each proposed route. Low, mid and high fares were tested for each proposed POF service. For all of the routes, the approach was to bookend the base fare levels with a lower and higher fare. Table 8.1 shows the various fare levels that were investigated.

Table 8.1: Tested Fare Levels

Route	Base Rate	Low Fare	Mid Fare	High Fare
Bremerton	\$11	\$8	\$11	\$14
Kingston	\$15	\$11	\$15	\$18
Southworth	\$11	\$8	\$11	\$14

Bremerton to Seattle

As Method 1 is the most accurate way to estimate the existing POF demand for the Bremerton route, only Method 1 results are shown below.

Table 8.2: Annual Ridership and Revenue for Various Fare Levels

Scenario	Low Fare \$8		Mid Fare \$11		High Fare \$14	
	Ridership	Revenue	Ridership	Revenue	Ridership	Revenue
6 Round Trips/Day	253,771	\$1.0M	212,554	\$1.2M	176,957	\$1.2M
12 Round Trips/Day	483,791	\$1.9M	419,174	\$2.3M	359,701	\$2.5M

Kingston to Seattle

Table 8.3: Annual Ridership and Revenue for Various Fare Levels

Scenario	Low Fare \$11		Mid Fare \$15		High Fare \$18	
	Ridership	Revenue	Ridership	Revenue	Ridership	Revenue
6 Round Trips/Day	211,498	\$1.2M	167,325	\$1.3M	139,336	\$1.3M
12 Round Trips/Day	397,420	\$2.2M	329,283	\$2.5M	282,730	\$2.5M

Southworth to Seattle

Table 8.4: Annual Ridership and Revenue for Various Fare Levels

Scenario	Low Fare \$8		Mid Fare \$11		High Fare \$14	
	Ridership	Revenue	Ridership	Revenue	Ridership	Revenue
6 Round Trips/Day	163,574	\$0.7M	138,805	\$0.8M	116,901	\$0.8M
12 Round Trips/Day	291,961	\$1.2M	257,804	\$1.4M	225,222	\$1.6M

Revenue Maximizing

Revenue maximizing fares play an important role in the analysis of the proposed routes. The logit model developed for the ridership analysis are non-linear models that incorporate the fact that users' responses to fare increases are non-constant: Past a certain level, responses to further fare increases reduce demand by a greater percentage than the increase in fares, meaning that there is a revenue-maximizing fare level that the models can identify.

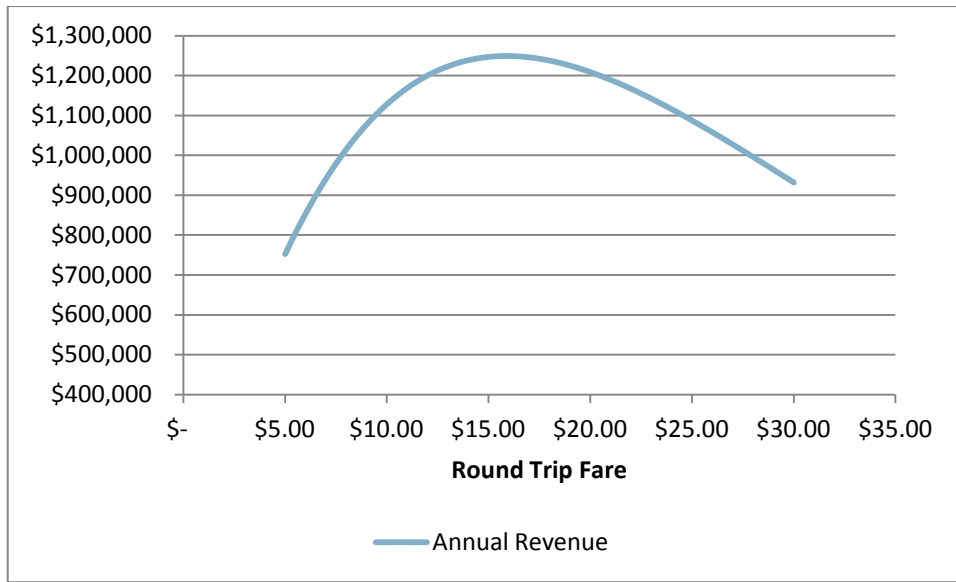
For the scenarios examined, operating costs are nearly always constant between various fare scenarios, which means that revenue maximization is akin to subsidy minimization. Table 8.5 shows the revenue maximizing fares and corresponding ridership and revenue for each route and scenario.

Table 8.5: Revenue Maximizing Fares

Route	Scenario	Revenue Maximizing Fare	Annual Ridership	Annual Revenue
Bremerton	6 Round Trips/Day	\$15.88	157,341	\$1.2M
	12 Round Trips/Day	\$17.85	291,866	\$2.6M
Kinston	6 Round Trips/Day	\$16.42	153,573	\$1.3M
	12 Round Trips/Day	\$18.82	270,719	\$2.5M
Southworth	6 Round Trips/Day	\$16.61	100,151	\$0.8M
	12 Round Trips/Day	\$19.16	174,446	\$1.7M

Figure 8.1 graphically displays the “revenue hill” traced by varying fare levels. Below a fare of \$15.88 demand is *inelastic*, and fare increases generate higher total revenues. Past a fare of \$15.88, total revenues for the Bremerton to Seattle POF begin to decline from the peak levels generated at that fare level.

Figure 8.1: Revenue Maximizing Fare for the Bremerton Route – Method 1



9 Conclusions

This report contains a comprehensive analysis of three proposed POF services between Bremerton, Kingston, Southworth and Seattle. SDG has developed ridership and revenue forecasts using several logit route choice models developed for each proposed service.

As detailed in the previous sections, the POF services provide considerable travel cost benefits to a significant number of potential users. The ridership forecasts show that a relatively buoyant demand can be expected for the services.

The ridership forecasting exercise was greatly helped by the fact that several past POF services have been operated from Bremerton. These services generated ridership outcomes that were used by SDG in the development of the forecasting models used for the current analysis.

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Appendix G

Implementation Phasing and Financial Plan

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KITSAP TRANSIT

Implementation Phasing and Financial Plan



December 2014 | Final Report





Passenger-Only Ferry Business Plan and Long Range Strategy

Implementation Phasing and Financial Plan

December 2014

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Appendices

Appendix A – Financial Plan



1. Introduction/Overview

Successful passenger-only ferry (POF) service in Kitsap County will involve a phasing plan that introduces service in an incremental way, building upon earlier successes. The plan will leverage existing infrastructure, including terminal, vessel, and staff expertise, both in house and in partnering agencies, to bring a reliable commuting option for Kitsap County residents.

2. Operating Plan and Service Assumptions

The operating plan and service assumptions reflect the recommendation to partner with King County Marine Division to operate the Kitsap Transit (KT) routes to utilize and build upon that existing knowledge base.

2.1 SERVICE DELIVERY APPROACH ASSUMPTIONS

The operating plan modeled in the financial analysis is the public/public partnership organizational structure. This structure, as further outlined in Task 6, draws on the knowledge and expertise of the King County Marine Division (KCMD), which currently operates two POF routes out of Pier 50 in Seattle. KT would retain control of service levels, fares, fare collection, and route selection, and would manage their capital planning and acquisition program. They would also manage the operating contract with KCMD.

2.2 LONG-TERM SERVICE COMPOSITION

This plan recommends a phased approach to implementation of the KT POF service. However, to understand how the phasing comes together, one must have a grasp of what the system will look like in maturity.

Long-term POF service in Kitsap will include three routes serving Bremerton, Kingston, and Southworth. Initially each route will serve commuter traffic only, with three AM round-trips and three PM round-trips.

Increased ridership demand may trigger a need to offer additional trips. Current ridership analysis does show that increasing service levels by offering 12 daily round-trips increases projected ridership by more than double. To capture this additional demand, long-term service may offer 12 round-trips per day, with six round-trips during the AM commute and six round-trips during the PM commute. Because this enhanced service would be offered within the commute periods, additional vessels would be required to meet the schedule demand.

Service outside the commute period is not recommended at start up due to the low ridership and, therefore, low revenue return. Additionally, a public survey completed for this project indicated that extended weekday evening service is preferred over midday or weekend service. As the system matures, extended weekday evenings, weekend, or midday service may become more viable.

2.3 SERVICE LEVEL ASSUMPTIONS BY ROUTE

The service schedules are based on six round-trips per day for each route. These include three round-trips in the AM commute and three round-trips in the PM commute period. The crossing times for each route differ due to the distance from downtown Seattle, and/or operating constraints. The crossing times are outlined below and include approach time for the vessel. In addition to the stated crossing times, a 7-minute dwell time is added to each trip to account for passenger loading and unloading at the dock.

Table 2-1: Roundtrip Timeframes

Route	Crossing Time Proposed (Min.)	Dwell Time (Min.)	One-Way Round-Trip (Min.)
Bremerton	28	7	35
Kingston	33	7	40
Southworth	23	7	30

The example schedules outlined below were created through careful review of existing POF sailings out of Pier 50, existing Washington State Ferries (WSF) sailing schedule, fueling requirements, and most effective use of crew time. Crew hours indicated in Table 2.2 include 20 minutes for start-up activities and approximately 15 minutes for shutdown activities.



Table 2-2: Example Schedules

Bremerton			Kingston			Southworth		
Depart Bremerton	Depart Seattle	Crew Hours	Depart Kingston	Depart Seattle	Crew Hours	Depart Southworth	Depart Seattle	Crew Hours
5:45	6:20	4.5 Hrs	5:40	6:20	5 Hrs	6:00	6:30	3.5 Hrs
6:55	7:30		7:00	7:40		7:00	7:30	
8:05	8:40		8:20	9:00*		8:00	8:30	
3:25	4:00	4 Hrs	3:20	4:00	4.5 Hrs	3:05*	4:20	4.5 Hrs
4:35	5:10		4:40	5:20		4:50	5:20	
5:45	6:20		6:00	6:40		5:50	6:20	

Notes: **BOLD** indicates PM, * indicates dead head trip to fuel at Harbor Island.

3. Route Phasing

The Bremerton service is the first priority for implementation. This is due to the presence of existing infrastructure at the terminal and the fact that KT owns the RP1 vessel, specifically designed to serve the route. The successful implementation and operation of this route can serve as an example for the other two routes and provide insights along the way.

3.1 EXISTING INFRASTRUCTURE

Existing infrastructure plays a large role in the recommended route phasing. As mentioned above, the Bremerton route is virtually ready for operation by Fall of 2014 due to upgrades that were completed at the terminal. The Kingston Terminal would be next in line with very minimal infrastructure improvements necessary.

A complete POF facility must be built at Southworth because there is no existing POF infrastructure. Some facility elements could be shared with WSF, however, due to the extensive work required in-water, operation of a POF from this location is years away even if planning and design began today.

On the other side of the water, the eastern terminal at Pier 50 is currently in the design process for a new facility as part of the Colman Dock maintenance and preservation project. Pier 50 will be relocated during the first portion of construction, slated to begin in 2017 and be completed in 2019. Covered queuing and passenger space to accommodate multiple POF routes is planned for the new terminal. In addition to providing additional upland queuing space with the redevelopment, additional slips must be added at Pier 50 to accommodate all three Kitsap routes. This two-slip float is projected to be replaced with a four-slip float by 2021, which will accommodate the three additional routes from Kitsap, as well as, King County's existing two routes.

3.2 PROPOSED APPROACH

A proposed phasing/service schedule can be viewed below. This schedule represents an aggressive approach to service implementation with the goal of providing service not long after tax revenues are available. This schedule can be adjusted as the KT Board decides when to request a vote on a tax proposal and when applicable grant funding cycles for capital improvement are available.

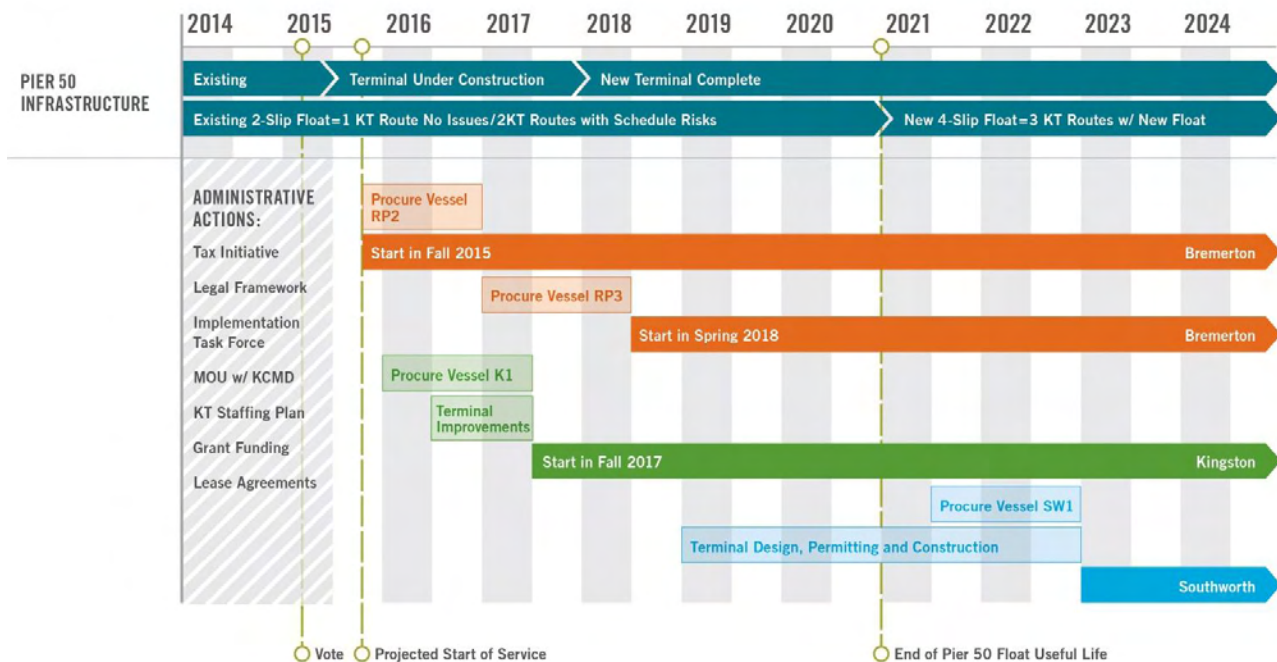
Prior to service start-up, a host of administrative and organizational actions will need to be completed. Most importantly, a reliable local funding source must be identified. The decision to go for a ballot measure, the setting of the proposed levy rate, and the preparations for putting that measure to the voters requires organization and time. Additional administrative actions beyond local funding should be identified with a plan for action based on the voting timeframe decided upon by the KT Board. A detailed review of these administrative actions is outlined in Section 9 of this report. Such administrative actions include the convening of an implementation task force to include King County, KT, and WSF, identification of potential grant funding sources, internal KT staffing planning, and lease agreements.

The phasing plan recognizes the timing of key elements, including the ability of Pier 50 in Seattle to accept new routes, given existing redevelopment projects and infrastructure, and capital improvements needed for each route including vessels and terminal infrastructure.

As mentioned above, the first route proposed for service is the Bremerton route where the necessary terminal and vessel infrastructure is in place. The second route to come online would be the Kingston route. This route has existing terminal infrastructure in place that would need only minimal improvements. Vessel acquisition will be the determining factor for when this route is ready for service. This is discussed further in the Vessel section below. The third route to come online would be the Southworth route. This is due to the extensive infrastructure improvements required at this terminal and the timeframe required for designing, permitting, and constructing the facility.



Figure 3-1: Proposed Phasing Plan



4. Capital Improvements

Capital improvements will be phased based on available funding and the route phasing strategies outlined above.

4.1 TERMINALS

Terminal infrastructure needs for the Bremerton and Kingston routes are very minimal. An entirely new terminal facility is needed at Southworth and would require substantial capital and time to design, permit, and construct the facility. It is estimated that it would take approximately 18 months for Kingston improvements and 4 years for Southworth improvements. The Bremerton terminal is ready for operation as permanent signage is not an absolute necessity for operation.

Seattle (Pier 50) Terminal Improvements.

The proposed eastern terminal for the Kitsap POF service is Pier 50, the location of the existing King County Water Taxi terminal. Pier 50 capital improvements are currently in design. Terminal improvements are scheduled for completion in 2019; however, the design and construction schedule is still in flux as it is tied to the WSF overall terminal replacement project. The terminal

improvements do not currently include replacement of the existing two-slip float. The current Pier 50 POF float's useful life is estimated to 2021. The replacement POF float will have four slips which will accommodate more than three routes effectively without the risk of service disruption.

4.2 VESSELS

Vessel procurement strategies will ultimately depend on the service structure chosen by KT. In the public/public partnership model, some vessel assets can be shared among the routes. Some routes, however, have unique requirements that will require a specific vessel be procured. When building the phasing plan, it was assumed that it takes between 18 and 24 months to build a vessel. As identified in the table below, Bremerton, with its specific wake wash requirements, will build Rich Passage 2 (RP2) vessel to serve as a back up to the six round-trip service. Once 12 round-trip service is initiated, an additional vessel, the RP3, will be needed to serve as a back-up to the two RP vessels. Kingston requires a very fast boat with more capacity than an RP vessel can provide. Due to its unique speed requirements, a custom vessel is anticipated for the Kingston route. A more standard 150-passenger vessel is assumed for the Southworth route. The RP class vessels could serve as back-up for the Kingston and Southworth routes with some operational impacts. Additionally, assets shared with King County may also serve as back-up vessels for these routes.

Table 4-1: Vessel Procurement Plan by Route

Route	Primary Vessel	Assumed Procurement Method	Backup Vessel	Assumed Procurement Method
Bremerton (1)	RP1 (118 PSGR)	Currently Owns	RP2 (118 PSGR)	Build
Bremerton (2)	RP2 (118 PSGR)	Would have been built for previous route service	RP3 (118 PSGR)	Build
Kingston	T-boat (150 PSGR) – 34 knot capable	Build	RP2/3 & KCMD Spirit of Kingston	N/A
Southworth	T-Boat (150 PSGR) – 28 knot capable	Lease or Build	RP2/3 & KCMD Spirit of Kingston	N/A

5. Cost Projections

The financial analysis is premised upon the “build out” of the service for three routes, Kingston, Bremerton, and Southworth complete by 2023. Both capital investments as well as ongoing operational costs are included. The operating plan and service assumptions outlined in this report form the basis for projected operating costs and fare revenue.

Cost projections can be broken down by capital costs for infrastructure and the cost to operate the POF service outlined in the section above.

5.1 GENERAL ASSUMPTIONS

The operating plan and service assumptions reflect the recommendation to partner with KCMD to provide and operate the KT routes. Our analysis relies on and builds upon known costs for the operation of the King County service such as labor rates, maintenance needs, and operations management, etc. Specific assumptions for each major cost component are discussed in the following sections.

Cost Inflation

The base year was set at 2015. If not already available in 2015 dollars, cost estimates were initially inflated to 2015 levels using KT’s accepted rate of five percent per annum. Subsequent-year costs reflect compound inflation at five percent per annum.

Fuel Cost

The base year cost for fuel was set at \$4 per gallon for marine diesel. While the current rate is closer to \$3.35, the higher rate was selected to provide a cushion against volatile fuel prices. The annual inflation rate was also set five percent per annum.

Operations Management

The public-public organizational model recommended in the Operations Report establishes the base level costs for operations management and support.

Labor Rates

KCMD’s 2015 maritime labor rates are assumed for all vessel and terminal positions. Current King County benefit factors including health, retirement, premium pay, and leave are also assumed.

5.2 CAPITAL COSTS

Capital costs include capital infrastructure needed to service the routes. This includes vessels and terminal infrastructure to serve both the passengers and vessels.

Terminals

Terminal capital costs were estimated using current unit pricing for terminal elements after a site visit was conducted to assess the state of existing infrastructure. Recommended improvements required at the Bremerton and Kingston terminal are very minimal in nature, whereas the Southworth location will require the design and construction of an entirely new facility. The cost for repayment to the Port of Bremerton (POB) for the proportionate cost of improvements to shared facilities between the POB marina and the KT POF facility is included in the terminal capital program. New facility needs were identified with unit costs for development of a new facility based on the current unit pricing associated with the Pier 50 redevelopment. New facility costs by terminal were identified. (Costs inflated based on timing of improvement costs).

Table 5-1: Assumed Terminal Capital Costs

Terminal	Improvements Proposed	Cost (\$)
Bremerton	Signage	\$20,000
Kingston	Aesthetic improvements, decking inspections and repair. (no in-water work)	\$876,000
Southworth	New terminal (in-water work)	\$8,251,000

Vessels

As noted in section 4.2 above, due to the route specific operating requirements, different vessels are proposed for each route.

KT built the RP1 as part of the Rich Passage wake research project. The cost of acquiring all additional vessels was estimated based on currently available vessel construction cost data.

Table 5-2: Assumed Vessel Acquisition Costs (2015 Dollars)

Route	Vessel Proposed	Cost (\$)
Bremerton (1) & (2)	RP2 and RP3 (118 PSGR)	\$5,843,000
Kingston	T-Boat (150 PSGR) – 34 knot capable	\$5,775,000
Southworth	T-Boat (150 PSGR) - 28 knot capable	\$4,909,000

Fare Collection Development and Equipment

The implementation of a fare collection system will require some level of capital costs to make the required modification to the ORCA system for the new KT POF service. New fare collection equipment will need to be installed at each terminal. Additionally, some capital costs are associated with the development of the fare collection system and incorporation into the ORCA regional transit fare collection system. Table 5-3 represents rough order of magnitude costs assumed for the capital investment in the fare collection development and equipment needed.

Table 5-3: Assumed Fare Collection Capital Costs

Revenue Collection Equipment	Estimated Cost	Notes
Ticket Vending Machine	\$ 120,000	Two at Pier 50, two at Bremerton, one at Southworth, and one at Kingston. Similar model as KCMD, priced at \$20K each
Portable Fare Transaction Processors	\$ 18,000	\$2k per unit plus \$1k per unit for cradle, 6 units
Portable Farebox	\$ 32,000	\$8k per unit, 1 unit per route plus 1 spare
Pass Program Costs	Estimated Cost	Notes
ORCA and KT Program Costs	\$ 75,000	Addition of three routes and associated business rules to the ORCA program, addition of KT pass.

5.3 OPERATING AND MAINTENANCE COSTS

Operating and maintenance costs include all those cost elements required to run and maintain service. These costs are categorized below by vessel and terminal.

Vessels

The number of crew required is determined by the Officer in Charge, Marine Inspections (OCMI). All vessels are required to have a Captain (Master) and a Senior Deckhand. Generally, for most T-boats (the 150 passenger boats recommended), deckhands are required for each deck available to passengers. For the purposes of developing costs within the business plan, three crew members will be assumed.

- **Vessel Operating Labor:** An hourly vessel labor rate was calculated using the mandated crew positions, KCMD wage rates, benefit factors, and overtime, holiday, and leave experience. This hourly rate was then applied to the operating hours defined in the recommended service schedule to determine vessel operating labor costs.
- **Vessel Maintenance Labor:** A recommended vessel maintenance schedule employing marine operating engineers and oilers was developed to provide necessary routine maintenance at the west side tie up locations. Maintenance labor costs were developed using the recommended schedule and KCMD labor rates, benefit factors, and penalty, overtime, holiday, and leave experience. The maintenance crew schedule does recognize certain economies of scale that might be recognized as the fleet size grows.
- **Fuel Consumption:** Fuel usage rates were developed using fuel curves for the specific vessel performance parameters defined for each route. These fuel use rates were then applied to the proposed operating schedule by route to determine projected annual fuel consumption. The base year price per gallon was inflated to the appropriate year and then applied to projected annual consumption to determine fuel costs.

- **Maintenance:**
 - **Vessel Maintenance Supplies and Materials:** Maintenance supplies such as lube oil, filters, and maintenance supplies reflect industry experience for similar vessels.
 - **Other Maintenance:** Annual drydock, inspection, and routine annual maintenance costs were established at levels typical for similar vessels using Puget Sound rates.
 - **Back-up Vessel(s):** The cost of maintaining, inspecting, and insuring back-up vessels are allocated equally to the routes operating during each year.
- **Other Vessel Operating Costs:** Included in this category are costs associated with consumables, communication, uniform other miscellaneous vessel expenses. And vessel insurance KT's marine insurance broker provided estimated 2014 annual premiums for standard marine coverage for each operating and backup vessel including hull and machinery, protection and indemnity, pollution, and excess liability coverage.

Terminals

Terminal operating costs include labor, leases, maintenance, and insurance. The specific assumptions related to each are outlined below. There are three terminals.

- **Terminal Labor:**
 - **Westside Terminals (Kitsap County):** Four hours of terminal staffing are programmed at each west side terminal to cover passenger queuing and processing during the morning commute period.
 - **Seattle Pier 50 Terminal:** Assume 2015 KCMD terminal costs. Based on experience during the Rich Passage research test service, it is assumed that the current KCMD terminal staffing for the Seattle dock is adequate to handle one additional KT route. When the second route is implemented the terminal costs will be increased by one third and remain at that level when the third route is implemented.
- **Seattle Pier 50 Terminal Cost Allocation:** All operating costs for the Seattle terminal are allocated amongst the KCMD and KT routes based on the anticipated number of vessel landings.
- **Terminal Maintenance:** Ongoing terminal maintenance is estimated based on KCMD experience.
- **Terminal Other Costs:** Other terminal operating costs are based on the KCMD 2015 budget and estimated fare collections costs reflecting current fare collection media and systems.
- **Terminal Leases:** No lease cost is included for the Bremerton Transportation Facility. The lease cost for the other two west side terminals uses KCMD's current lease rate at Vashon as a fair market value estimate. The lease or landing fee paid to WSF for the Seattle terminal is set at the rate established by WSF and charged to both the Rich Passage 1 and KCMD vessels.



- **Terminal Insurance:** The cost identified for terminal insurance for the west side terminals reflects actual rates charged by KT’s insurance provider for the Bremerton Transportation Center. Insurance cost for the Seattle terminal is included in the KCMD other terminal costs allocation.
- **Fare Collection:** Estimated fare collection costs assume that fare will be collected through the regional fare collection system and cash fare boxes. Costs estimates are included for operation and maintenance of ticketing and fare processing equipment, communication, over the counter sales, and revenue service.

5.4 PROGRAM AND OPERATIONS MANAGEMENT SUPPORT

Operating and administrative costs include those costs associated with managing and administering all aspects of the service. This will include management of the capital program.

Cost Allocation of KCMD Management and Support

Under the selected public/public operating model it is assumed that KCMD, under contract to KT, will perform operations management of the KT POF service. To estimate management and support costs, 2015 proposed KCMD management and support costs were supplemented by 20%, or approximately one full time equivalent, in the first year to reflect the additional workload associated with the first Kitsap route. It is assumed that the second route can be implemented with no overall increase in the level of management and support but that an additional 20% increase is required when the third route is implemented. The total management and support costs were then allocated between the current KCMD routes and the Kitsap routes based on the ratio of their respective direct vessel and terminal labor costs.

Kitsap Transit Passenger-Only Ferry Service and Capital Program Management

To manage the capital program, fare policy, service development, and the contract with King County, it is assumed that KT will establish a POF program management function internally. The overall cost of this function is set at one and a half full time equivalents at the salary and benefits level for the KCMD finance management position plus a thirty percent factor for other related support costs. It is assumed that this function would be funded at fifty percent at the onset, increasing to 75% when the second route is implemented and 100% when the third route is implemented.

6. Operating Revenue

The financial plan assumes only fare box revenue will be collected. Although non-fare box revenue such as on-board advertising might be pursued; because the level, probability, and timing is uncertain, no allowance is made for non-fare operating revenue in the financial plan. The draft financial plan outlined in this report would be updated frequently and refined as decision makers adjust the implementation phasing plan.

6.1 ESTIMATED FARE REVENUE

Fare revenue estimates were calculated by applying a range of full-fare levels to the ridership projection model. These revenue projections were then deflated to reflect WSF experience with actual average fare realization per passenger (the average realization is less than full-fare due to the number of discounted fare types available). A further reduction of 25% was also applied to address incremental ridership growth and uncertain economic conditions.

Ridership Projections

The baseline ridership estimates and estimated fare revenue are identified in the following tables. Ridership projections were developed using a mode-choice model, based on assumed fare levels. The assumed fare levels were selected at the mid-range of competing modes with a slight premium over the cash fare of the least expensive overall mode (which largely consisted of transit, either WSF ferry or a combination of bus/train and WSF ferry). These baseline projections are outlined below.

Table 6-1: Baseline Projected Ridership and Revenue

	Round-trip Fare Assumed	Annual Ridership (6 RT)	Annual Revenue (2015 \$)
Bremerton	\$11.00	217,676	\$1.2 M
Kingston	\$15.00	177,608	\$1.3 M
Southworth	\$11.00	147,335	\$0.8 M

Our analysis remained with the median fare throughout. Although this posted full-fare rate was used in the ridership model, many riders enjoy some form of discount from the posted fare. To account for the average fare paid, the projected revenue was reduced by approximately 15%. Table 6-2 displays the baseline revenue forecasts used for the financial plan after this revenue reduction (numbers are rounded).

Table 6-2: Projected Revenue After Adjustment

	Round-trip Fare Assumed	Annual Ridership (6 RT)	Annual Revenue (\$)
Bremerton	\$11.00	217,676	\$1.0 M
Kingston	\$15.00	177,608	\$1.1 M
Southworth	\$11.00	147,335	\$0.7 M

The 2014 base year revenue was inflated each year in the financial forecast by 5%; the same rate used to inflate costs. This allows for a combination of annual fare increases and ridership growth to achieve a rate of revenue growth commensurate with operating cost growth.

6.2 FAREBOX RECOVERY AND OPERATING SUBSIDY REQUIREMENTS

Once operating costs and fare box revenue were estimated, projected farebox recovery and operating subsidy requirements were calculated. The current financial plan generates a first-year farebox recovery of nearly 29%, increasing to approximately 33% when the second route comes online and approximately 34% with the third route, which is in line with the King County Water Taxi 2013 farebox recovery of 28%. The WSF farebox recovery numbers are not a valid comparison because their costs and revenue reflect a combined passenger and vehicle service.

The first year operating subsidy level is \$2.0 million with one vessel operating on the Bremerton route. When a second vessel is added to Bremerton and the Kingston service is initiated the overall annual subsidy level will be \$5.5 million.

Table 6-3: Estimated Farebox Recovery and Operating Subsidy by Year

Year	Annual Subsidy	Farebox Recovery	Service Level
2016	\$2.0 M	29%	One Vessel serving Bremerton
2018	\$5.5 M	33%	One Vessel serving Kingston, Two vessels serving Bremerton
2023	\$8.1M	34%	One Vessel serving Southworth, One Vessel serving Kingston, Two vessels serving Bremerton

7. Funding Approach

Adequate funding is critical to a sustainable service. While a portion of operating costs will be covered by farebox revenue, large capital outlays will need to be covered through other funding sources. Grant funding will be utilized whenever possible; however, it is very competitive and applicable programs are limited. Local funding, in the form of tax levies, will be required to support the capital needs and sustain the service over the long term. Securing necessary capital and long-term operating subsidy funding is the first step in establishing this POF service.

Operations

Fare box revenue must be supplemented by local tax revenue to cover the full costs of operation. There are no applicable grant sources to fund operations. Local tax options are discussed below in section 7.2

Capital Funding

Three approaches to raising the capital required to support the POF implementation plan have been identified: grant funding, local funding, and use of bond funds.

7.1 GRANT FUNDING

Pursuing grant funding may not be possible until local, sustainable funding is in place. The financial plan assumes that steps are immediately taken to identify specific grant opportunities so that preparations can be made to submit applications as soon as a local funding source is secure.

A number of viable potential grant sources were identified during Task Two of this effort. It is assumed, however, that the initial level of required capital funding is too great to be met entirely through grant sources. The plan includes grant funding at levels projected by KT staff.



7.2 LOCAL FUNDS

It is assumed that a sales tax levy would be pursued to provide local funds to subsidize ongoing operations and to supplement grant funds for capital requirements. Sales tax yields were provided by KT staff and reflect the past several years' actual collections. Please refer to Section 8 for a more detailed projection of local funding needs.

Should KT wish to explore the funding capacity of other tax options, such as the Motor Vehicle Excise Tax (MVET), additional research will be required to establish the total vehicle value base in Kitsap County. There is no ready source of current information for county vehicle value because the MVET has not been collected in nearly fifteen years.

7.3 BONDING

High front-end capital funding requirements may require that some portion of the capital program be funded through bond proceeds. Bonding will increase overall capital costs some to cover both initial bond issuance costs and to service the bond debt. The alternative to bonding is setting a local tax rate at a level sufficient to cover all capital requirements in excess of predicted grant funds.

8. Financial Plan

Projected route financial statements are prepared for each of the three identified routes and include operating revenue, operating costs, and capital costs. The projected route financial statements reflect the implementation schedule proposed in the overall business plan. The projected route financial statements for each of the three routes are consolidated into a system-wide route projected financial plan that incorporates funding for both the operating subsidy and the capital program (Refer to Appendix A).

The financial plan is balanced assuming \$31 million in federal and state grants between 2017 and 2034 with a 2/10 county-wide sales tax. A bond issuance of \$5 million provides the cash flow required in early years. Alternative local funding sources have not been evaluated but could supplement or be substituted for the sales tax. If a decision is made to create a ferry district with boundaries other than the boundaries of Kitsap County, additional analysis would be required to revise the sales tax revenue projection and re-balance the financial plan.

8.1 PROGRAM IMPLEMENTATION STRATEGY

Successful implementation of this program requires an implemental approach. Organization actions need to occur in a specific order to facilitate successful implementation. To move this service forward, big steps need to be made, most importantly locating sustainable funding. Concurrent to this most important aspect, organizational and operational agreements will need to be shaped between KT and the recommended contracted operator, KCMD. The incremental implementation strategy and its components are outlined below.

8.2 LEAD AGENCY AND ORGANIZATIONAL BODIES

The lead agencies identified in this proposed plan are KT, Port of Kingston, King County and WSF. KCMD will provide many operational and management functions, which will be identified in a memorandum of understanding between the two agencies. KT must also coordinate with WSF for operations at Pier 50 and for the proposed collation at Southworth.

8.3 RECOMMENDED ACTIONS

Organizational and Funding

Before actual implementation of the POF business plan can begin, additionally organizational and funding planning tasks should be undertaken.

Legal Framework

The legal framework for providing POF service is in place. The funding mechanism, specifically the creation a ferry benefit district, may require some legislative action.

Structure and Staffing

Administrative and organizational phasing has a lot to do with the final agreement reached between KT and KCMD. Ultimately, there may be a desire to bring more services in-house to KT, which could be accomplished long-term. In the short-term, administrative and organizational infrastructure already in place within KCMD would be leveraged for operations of the first service. The proposed organizational structure to manage the POF operations will require an internal KT staff member to work as the Marine Program Manager, overseeing the contracting with King County for ferry services. Additional administrative support, capital program management, marketing, and other support functions can likely be drawn from current internal staff with that expertise. As the system grows and matures and workload becomes greater, additional staff or dedicated staff may be needed.

Implementation Task Force

An implementation task force should be formed, including policy makers and operational personnel of both public partnering agencies. From King County, this may include a member of the King County Council, as well as, the Director of the Marine Division and operations personnel. From KT, these members may include a member of the KT Board, as well as the KT Executive Director and the POF contract manager. A representative from WSF should also be included on the committee, in order to keep communications open about planned terminal improvements and vessel operations.



Capital Funding

Further research into the most promising sources of capital grant funds is recommended. This research should also address grant funding cycles and alternative granting funding schedules. Alternative financial plans might be developed to address different grant funding scenarios.

Route Specific

Route specific implementation actions include the availability of nearby parking or utilization of park-and-ride facilities as well as existing transit modifications required to serve the commuters.

Existing Transit Service Modifications

Some minor existing transit service modifications would be required to fully support the POF service and its customers. These modifications include the revision of some bus schedules to meet with ferry arrival and departure times as well as some route modification or expansion related to serving nearby parking areas and the ferry terminals themselves.

Table 8-1: Implementation Strategy

Recommended Actions	Partner Agencies	Prior to Tax Measure	Implementation			
			Year 1	Short-Term	Mid-Term	Long Term
<i>Organizational</i>						
1	KT Board decision to move forward with tax initiative	KT	*	→		
2	Prepare for tax initiative	KT	*			
3	Identify applicable grants	KT	*			
4	Alterations to legal framework	KT	*			
5	Interagency Implementation Committee	KT/KCMD/WSF/POK		- - - - - →		
6	Amend CIP to prioritize for POF improvements	KT				
7	Apply for grant applications	KT/KCMD				
8	Develop and execute MOU for KCMD partnership	KT/KCMD				
9	Develop and initiate internal KT staff organization to accommodate service	KT				
10	Fare collection program development	KT				
<i>Bremerton</i>						
B1	Prepare RP1 for service	KT				
B2	Commission building of RP2	KT				
B3	Capital terminal improvements (minimal)	KT				
B4	Implement service (w/o back-up vessel)	KT/KCMD				
<i>Kingston</i>						
K1	Lease agreement with Port of Kingston	KT/POK				
K2	Capital terminal improvements at Kingston	KT/POK				
K3	Procure vessel	KT				
K4	Implement service (Share RP2 as back-up vessel)	KT/KCMD				
<i>Southworth</i>						
S1	Lease agreement with WSF	KT/WSF				
S2	Capital terminal improvements at Southworth	KT/WSF				
S3	Procure vessel	KT				
S4	Procure back-up vessel	KT				
S5	Implement service	KT/KCMD				
<i>Pier 50</i>						
KC1	Lease agreement with KCMD	KT/KCMD		→		
KC2	Capital infrastructure contribution	KT/KCMD				

KT=Kitsap Transit
 KCMD=King County Marine Division
 WSF=Washington State Ferries
 POK=Port of Kingston
 CIP=Capital Improvement Plan
 MOU=Memorandum of Understanding



9. Next Steps

Additional action items may be identified along the way, as well as adjustment to roles and responsibilities. On an ongoing basis KT should review progress made on the incremental implementation plan and make adjustment to priorities as needed.

KT Board action to move forward with securing local funding, the successful passing of a funding measure, and the collection of those funds are vital steps toward establishing this service. Grant funding can be pursued, along with local financing strategies (taxing districts) to implement this service.

This phasing plan represents an aggressive implementation of service and should be re-evaluated as the KT board moved towards their decision to move forward with the project.

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Appendix A

Financial Plan

Kitsap Passenger-Only Ferry Financial Projection
Consolidated- All Routes
2015 -2034

Capital	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Revenue	Bremerlon Service Introduced																			
State Grant Funding			1,600,000	-	-	-	2,000,000	-	-											
Federal Grants- New Small Starts			6,695,000	2,436,000	1,545,000	703,000	5,476,000	5,388,000	-											
Federal Grants-Ferry Boat Discretionary			-	280,000	280,000	280,000	1,080,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000
Total Capital Grant Revenue	-	-	8,295,000	2,716,000	1,825,000	983,000	8,556,000	5,668,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000	280,000
Expenses	Kingslon Service Introduced																			
Vessels	Service Introduced																			
Vessel Leases			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vessel Acquisitions	1,461,000	8,930,000	6,348,000	1,611,000	-	-	1,645,000	4,934,000	-	-	-	-	-	-	-	-	-	-	-	-
Rich Passage Monitoring	160,000	224,000	235,000	247,000	259,000	272,000	286,000													
Subtotal Vessels	1,621,000	9,154,000	6,583,000	1,858,000	259,000	272,000	1,931,000	4,934,000	-	-	-	-	-	-	-	-	-	-	-	-
Terminals																				
Seattle Terminal	-		2,625,000	862,500	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Kitsap Terminals	165,000	486,000	486,000	-	1,348,000	957,000	6,265,000	2,151,000	-	-	-	-	-	-	-	-	-	-	-	-
Bremerton Terminal Debt Repayment		675,000	675,000	675,000	675,000															
Subtotal Terminals	165,000	1,161,000	3,786,000	1,537,500	2,023,000	957,000	6,265,000	2,151,000	-	-	-	-	-	-	-	-	-	-	-	-
Future Capital Contingency															1,000,000	1,000,000	280,000	280,000	280,000	280,000
Total Capital Expenditures	1,786,000	10,315,000	10,369,000	3,395,500	2,282,000	1,229,000	8,196,000	7,085,000	-	-	-	-	-	-	1,000,000	1,000,000	280,000	280,000	280,000	280,000
Net Capital Funding Required	(1,786,000)	(10,315,000)	(2,074,000)	(679,500)	(457,000)	(246,000)	360,000	(1,417,000)	280,000	280,000	280,000	280,000	280,000	280,000	(720,000)	(720,000)	-	-	-	-
Total Local Funding Required for Capital and Operating	(2,493,000)	(12,314,000)	(4,173,000)	(6,144,500)	(6,195,000)	(6,272,000)	(5,964,000)	(8,060,000)	(7,810,000)	(8,214,000)	(8,638,000)	(9,086,000)	(9,553,000)	(10,046,000)	(11,562,000)	(12,102,000)	(11,953,000)	(12,552,000)	(13,178,000)	(13,836,000)
Total PTBA-POF Tax Funding at Two Tenths	2,553,000	7,927,000	8,204,000	8,491,000	8,788,000	9,096,000	9,414,000	9,743,000	10,084,000	10,437,000	10,802,000	11,180,000	11,571,000	11,976,000	12,395,000	12,829,000	13,278,000	13,743,000	14,224,000	14,722,000
Bond Funds		5,050,000																		
Debt Service		617,000	617,000	617,000	617,000	617,000	617,000	617,000	617,000	617,000	617,000									
Reserve for Port Orchard Foot Ferry			1,050,000	1,103,000	1,158,000	1,216,000	1,276,000	1,340,000	1,407,000	1,477,000	1,551,000	1,629,000	1,710,000	1,796,000	1,886,000	1,980,000	2,079,000	2,183,000	2,292,000	2,407,000
Projected Cash Balance	60,000	106,000	2,470,000	3,097,000	3,915,000	4,906,000	6,463,000	6,189,000	6,439,000	6,568,000	6,564,000	7,029,000	7,337,000	7,471,000	6,418,000	5,165,000	4,411,000	3,419,000	2,173,000	652,000

Numbers may not add up due to rounding.

Kitsap Passenger Only Ferry Financial Projection
Bremerton - Seattle
2015-2034

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Operations																				
Revenue																				
Fares	190,000	800,000	840,000	1,764,000	1,852,000	1,945,000	2,042,000	2,144,000	2,251,000	2,364,000	2,482,000	2,606,000	2,736,000	2,873,000	3,017,000	3,168,000	3,326,000	3,492,000	3,667,000	3,850,000
Total Operating Revenue	190,000	800,000	840,000	1,764,000	1,852,000	1,945,000	2,042,000	2,144,000	2,251,000	2,364,000	2,482,000	2,606,000	2,736,000	2,873,000	3,017,000	3,168,000	3,326,000	3,492,000	3,667,000	3,850,000
Expenses																				
Direct Vessel Operating Expense																				
Labor	176,000	740,000	777,000	1,526,000	1,602,000	1,682,000	1,767,000	1,855,000	1,948,000	2,045,000	2,147,000	2,255,000	2,367,000	2,486,000	2,610,000	2,741,000	2,878,000	3,021,000	3,172,000	3,331,000
Fuel	168,000	706,000	741,000	1,556,000	1,634,000	1,716,000	1,802,000	1,892,000	1,987,000	2,086,000	2,190,000	2,300,000	2,415,000	2,536,000	2,663,000	2,796,000	2,936,000	3,083,000	3,237,000	3,399,000
Maintenance	46,000	192,000	202,000	424,000	445,000	467,000	490,000	515,000	541,000	568,000	596,000	626,000	657,000	690,000	725,000	761,000	799,000	839,000	881,000	925,000
Other Operating Costs	57,000	240,000	252,000	351,000	369,000	387,000	406,000	426,000	406,000	426,000	448,000	470,000	494,000	518,000	544,000	571,000	600,000	630,000	661,000	694,000
Subtotal Vessel Operations	447,000	1,878,000	1,972,000	3,857,000	4,050,000	4,252,000	4,465,000	4,688,000	4,882,000	5,125,000	5,381,000	5,651,000	5,933,000	6,230,000	6,542,000	6,869,000	7,213,000	7,573,000	7,951,000	8,349,000
Direct Terminal Operating Expense																				
Labor	24,000	100,000	105,000	111,000	117,000	123,000	129,000	135,000	102,000	107,000	112,000	118,000	124,000	130,000	137,000	144,000	151,000	159,000	167,000	175,000
Maintenance	5,000	20,000	21,000	22,000	23,000	24,000	25,000	26,000	27,000	28,000	29,000	30,000	32,000	34,000	36,000	38,000	40,000	42,000	44,000	46,000
Other	31,000	131,000	138,000	172,000	181,000	190,000	200,000	210,000	220,000	231,000	242,000	255,000	267,000	281,000	295,000	309,000	325,000	341,000	358,000	376,000
Subtotal Terminal Operations	60,000	251,000	264,000	305,000	321,000	337,000	354,000	371,000	349,000	366,000	383,000	403,000	423,000	445,000	468,000	491,000	516,000	542,000	569,000	597,000
Total Direct Expenses	507,000	2,129,000	2,236,000	4,162,000	4,371,000	4,589,000	4,819,000	5,059,000	5,231,000	5,491,000	5,764,000	6,054,000	6,356,000	6,675,000	7,010,000	7,360,000	7,729,000	8,115,000	8,520,000	8,946,000
Management and Support																				
KT POF Management and Support	142,000	149,000	156,000	159,000	167,000	175,000	184,000	193,000	157,000	165,000	173,000	182,000	191,000	201,000	211,000	222,000	233,000	245,000	257,000	270,000
Contractor Management and Support	248,000	521,000	547,000	915,000	961,000	1,009,000	1,059,000	1,112,000	768,000	806,000	846,000	888,000	932,000	979,000	1,028,000	1,079,000	1,133,000	1,190,000	1,250,000	1,313,000
Total Management and Support	390,000	670,000	703,000	1,074,000	1,128,000	1,184,000	1,243,000	1,305,000	925,000	971,000	1,019,000	1,070,000	1,123,000	1,180,000	1,239,000	1,301,000	1,366,000	1,435,000	1,507,000	1,583,000
Total Operating Expenses	897,000	2,799,000	2,939,000	5,236,000	5,499,000	5,773,000	6,062,000	6,364,000	6,156,000	6,462,000	6,783,000	7,124,000	7,479,000	7,855,000	8,249,000	8,661,000	9,095,000	9,550,000	10,027,000	10,529,000
Net Operating Operating Subsidy Required	707,000	1,999,000	2,099,000	3,472,000	3,647,000	3,828,000	4,020,000	4,220,000	3,905,000	4,098,000	4,301,000	4,518,000	4,743,000	4,982,000	5,232,000	5,493,000	5,769,000	6,058,000	6,360,000	6,679,000
Farebox Recovery	21.2%	28.6%	28.6%	33.7%	33.7%	33.7%	33.7%	33.7%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%	36.6%
Capital																				
Expenses																				
Vessels																				
Vessel Acquisitions	1,461,000	4,382,000	4,832,000	1,611,000																
Rich Passage Monitoring	160,000	224,000	235,000	247,000	259,000	272,000	286,000													
Subtotal Vessels	1,621,000	4,606,000	5,067,000	1,858,000	259,000	272,000	286,000													
Terminals																				
Seattle Terminal																				
Bremerton Terminal																				
Bremerton Terminal Debt Repayment		675,000	675,000	675,000	675,000															
Subtotal Terminals		675,000	675,000	675,000	675,000															
Total Capital Expenditures		5,281,000	5,742,000	2,533,000	934,000	272,000	286,000													
Total Operating and Capital Expenditures	897,000	8,080,000	8,681,000	7,769,000	6,433,000	6,045,000	6,348,000	6,364,000	6,156,000	6,462,000	6,783,000	7,124,000	7,479,000	7,855,000	8,249,000	8,661,000	9,095,000	9,550,000	10,027,000	10,529,000
(Total Subsidy Required)	(707,000)	(7,280,000)	(7,841,000)	(6,005,000)	(4,581,000)	(4,100,000)	(4,306,000)	(4,220,000)	(3,905,000)	(4,098,000)	(4,301,000)	(4,518,000)	(4,743,000)	(4,982,000)	(5,232,000)	(5,493,000)	(5,769,000)	(6,058,000)	(6,360,000)	(6,679,000)

Numbers may not add up due to rounding.

Kitsap Passenger Only Ferry Financial Projection
Kingston - Seattle
2015-2034

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Operations																				
Revenue																				
Fares				969,000	1,018,000	1,069,000	1,122,000	1,178,000	1,237,000	1,299,000	1,364,000	1,432,000	1,504,000	1,579,000	1,658,000	1,741,000	1,828,050	1,919,000	2,015,000	2,116,000
Total Operating Revenue	-	-		969,000	1,018,000	1,069,000	1,122,000	1,178,000	1,237,000	1,299,000	1,364,000	1,432,000	1,504,000	1,579,000	1,658,000	1,741,000	1,828,050	1,919,000	2,015,000	2,116,000
Expenses																				
Direct Vessel Operating Expense																				
Labor				857,000	900,000	945,000	992,000	1,042,000	1,093,000	1,148,000	1,205,000	1,265,000	1,328,000	1,394,000	1,464,000	1,537,000	1,614,000	1,695,000	1,780,000	1,869,000
Fuel				870,000	914,000	960,000	1,008,000	1,058,000	1,111,000	1,167,000	1,225,000	1,286,000	1,350,000	1,418,000	1,489,000	1,563,000	1,641,000	1,723,000	1,809,000	1,899,000
Maintenance				218,000	229,000	240,000	252,000	265,000	278,000	292,000	307,000	322,000	338,000	355,000	373,000	392,000	412,000	433,000	455,000	478,000
Other Operating Costs				211,000	222,000	233,000	245,000	257,000	220,000	231,000	243,000	255,000	268,000	281,000	295,000	310,000	326,000	342,000	359,000	377,000
Subtotal Vessel Operations	-	-		2,156,000	2,265,000	2,378,000	2,497,000	2,622,000	2,702,000	2,838,000	2,980,000	3,128,000	3,284,000	3,448,000	3,621,000	3,802,000	3,993,000	4,193,000	4,403,000	4,623,000
Direct Terminal Operating Expense																				
Labor				111,000	117,000	123,000	129,000	135,000	184,000	193,000	203,000	213,000	224,000	235,000	247,000	259,000	272,000	286,000	300,000	315,000
Maintenance				22,000	23,000	24,000	25,000	26,000	24,000	25,000	26,000	27,000	28,000	29,000	30,000	32,000	34,000	36,000	38,000	40,000
Other				89,000	93,000	98,000	103,000	108,000	113,000	119,000	125,000	131,000	138,000	145,000	152,000	160,000	168,000	176,000	185,000	194,000
Subtotal Terminal Operations	-	-		222,000	233,000	245,000	257,000	269,000	321,000	337,000	354,000	371,000	390,000	409,000	429,000	451,000	474,000	498,000	523,000	549,000
Total Direct Expenses	-	-		2,378,000	2,498,000	2,623,000	2,754,000	2,891,000	3,023,000	3,175,000	3,334,000	3,499,000	3,674,000	3,857,000	4,050,000	4,253,000	4,467,000	4,691,000	4,926,000	5,172,000
Management and Support																				
KT POF Management and Support				87,000	91,000	96,000	101,000	106,000	86,000	90,000	95,000	100,000	105,000	110,000	116,000	122,000	128,000	134,000	141,000	148,000
Contractor Management and Support				499,000	524,000	550,000	578,000	607,000	419,000	440,000	462,000	485,000	509,000	534,000	561,000	589,000	618,000	649,000	681,000	715,000
Total Management and Support	-	-		586,000	615,000	646,000	679,000	713,000	505,000	530,000	557,000	585,000	614,000	644,000	677,000	711,000	746,000	783,000	822,000	863,000
Total Operating Expenses	-	-		2,964,000	3,113,000	3,269,000	3,433,000	3,604,000	3,528,000	3,705,000	3,891,000	4,084,000	4,288,000	4,501,000	4,727,000	4,964,000	5,213,000	5,474,000	5,748,000	6,035,000
Net Operating Operating Subsidy Required	-	-		1,995,000	2,095,000	2,200,000	2,311,000	2,426,000	2,291,000	2,406,000	2,527,000	2,652,000	2,784,000	2,922,000	3,069,000	3,223,000	3,384,950	3,555,000	3,733,000	3,919,000
Farebox Recovery				32.7%	32.7%	32.7%	32.7%	32.7%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%	35.1%
Capital																				
Expenses																				
Vessels																				
Vessel Acquisitions	-	4,548,000	1,516,000																	
Subtotal Vessels	-	4,548,000	1,516,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Terminals																				
Seattle Terminal																				
Kingston Terminal	-	486,000	486,000																	
Subtotal Terminals	-	486,000	486,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Capital Program Management & Support																				
Total Capital Expenditures	-	5,034,000	2,002,000	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating and Capital Expenditures	-	5,034,000	2,002,000	2,964,000	3,113,000	3,269,000	3,433,000	3,604,000	3,528,000	3,705,000	3,891,000	4,084,000	4,288,000	4,501,000	4,727,000	4,964,000	5,213,000	5,474,000	5,748,000	6,035,000
(Total Subsidy Required)	-	(5,034,000)	(2,002,000)	(1,995,000)	(2,095,000)	(2,200,000)	(2,311,000)	(2,426,000)	(2,291,000)	(2,406,000)	(2,527,000)	(2,652,000)	(2,784,000)	(2,922,000)	(3,069,000)	(3,223,000)	(3,384,950)	(3,555,000)	(3,733,000)	(3,919,000)

Numbers may not add up due to rounding.

Kitsap Passenger Only Ferry Financial Projection
Southworth - Seattle
2015-2034

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034
Operations																				
Revenue																				
Fares									752,000	790,000	830,000	872,000	916,000	962,000	1,010,000	1,061,000	1,114,000	1,170,000	1,229,000	1,290,000
Total Operating Revenue	-	-	-	-	-	-	-	-	752,000	790,000	830,000	872,000	916,000	962,000	1,010,000	1,061,000	1,114,000	1,170,000	1,229,000	1,290,000
Expenses																				
Direct Vessel Operating Expense																				
Operating Labor									974,000	1,023,000	1,074,000	1,128,000	1,184,000	1,243,000	1,305,000	1,370,000	1,439,000	1,511,000	1,587,000	1,666,000
Fuel									473,000	497,000	522,000	548,000	575,000	604,000	634,000	666,000	699,000	734,000	771,000	810,000
Maintenance									231,000	243,000	255,000	268,000	281,000	295,000	310,000	326,000	342,000	359,000	377,000	396,000
Other Operating Costs									203,000	213,000	224,000	235,000	247,000	259,000	272,000	286,000	300,000	315,000	331,000	348,000
Subtotal Vessel Operations	-	-	-	-	-	-	-	-	1,881,000	1,976,000	2,075,000	2,179,000	2,287,000	2,401,000	2,521,000	2,648,000	2,780,000	2,919,000	3,066,000	3,220,000
Direct Terminal Operating Expense																				
Labor									136,000	143,000	150,000	158,000	166,000	174,000	183,000	192,000	202,000	212,000	223,000	234,000
Maintenance									28,000	29,000	30,000	32,000	34,000	36,000	38,000	40,000	42,000	44,000	46,000	48,000
Other									155,000	163,000	171,000	180,000	189,000	198,000	208,000	218,000	229,000	240,000	252,000	265,000
Subtotal Terminal Operations	-	-	-	-	-	-	-	-	319,000	335,000	352,000	370,000	389,000	408,000	428,000	449,000	471,000	495,000	520,000	546,000
Total Direct Expenses	-	-	-	-	-	-	-	-	2,200,000	2,311,000	2,427,000	2,549,000	2,676,000	2,809,000	2,949,000	3,097,000	3,251,000	3,414,000	3,586,000	3,766,000
Management and Support																				
KT POF Management and Support									76,000	80,000	84,000	88,000	92,000	97,000	102,000	107,000	112,000	118,000	124,000	130,000
Contractor Management and Support									372,000	391,000	411,000	432,000	454,000	477,000	501,000	526,000	552,000	580,000	609,000	639,000
Total Management and Support	-	-	-	-	-	-	-	-	448,000	471,000	495,000	520,000	546,000	574,000	603,000	633,000	664,000	698,000	733,000	769,000
Total Operating Expenses	-	-	-	-	-	-	-	-	2,648,000	2,782,000	2,922,000	3,069,000	3,222,000	3,383,000	3,552,000	3,730,000	3,915,000	4,112,000	4,319,000	4,535,000
Net Operating Operating Subsidy Required	-	-	-	-	-	-	-	-	1,896,000	1,992,000	2,092,000	2,197,000	2,306,000	2,421,000	2,542,000	2,669,000	2,801,000	2,942,000	3,090,000	3,245,000
Farebox Recovery									28.4%	28.4%	28.4%	28.4%	28.4%	28.4%	28.4%	28.4%	28.5%	28.5%	28.5%	28.4%
Capital																				
Expenses																				
Vessels																				
Vessel Acquisitions							1,645,000	4,934,000												
Subtotal Vessels	-	-	-	-	-	-	1,645,000	4,934,000	-	-	-	-	-	-	-	-	-	-	-	-
Terminals																				
Seattle Terminal																				
Southworth Terminal					1,348,000	957,000	6,265,000	2,151,000												
Subtotal Terminals	-	-	-	-	1,348,000	957,000	6,265,000	2,151,000	-	-	-	-	-	-	-	-	-	-	-	-
Capital Program Management & Support																				
Total Capital Expenditures	-	-	-	-	1,348,000	957,000	7,910,000	7,085,000	-	-	-	-	-	-	-	-	-	-	-	-
Total Operating and Capital Expenditures	-	-	-	-	1,348,000	957,000	7,910,000	7,085,000	2,648,000	2,782,000	2,922,000	3,069,000	3,222,000	3,383,000	3,552,000	3,730,000	3,915,000	4,112,000	4,319,000	4,535,000
(Total Subsidy Required)	-	-	-	-	(1,348,000)	(957,000)	(7,910,000)	(7,085,000)	(1,896,000)	(1,992,000)	(2,092,000)	(2,197,000)	(2,306,000)	(2,421,000)	(2,542,000)	(2,669,000)	(2,801,000)	(2,942,000)	(3,090,000)	(3,245,000)

Numbers may not add up due to rounding.

Appendix H

Public Involvement Summary

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Passenger-Only Ferry Business Plan and Long-Range Strategy: Public Involvement Summary

I. Introduction

In April 2014, Kitsap Transit began developing a business plan and long-range strategy that will provide a comprehensive blueprint for implementing passenger-only ferry (POF) service. As part of this planning process, Kitsap Transit conducted outreach to inform the public about the purpose of the plan and to seek feedback through stakeholder interviews, information tables at community locations, press releases, website updates, online ads, a fact sheet, and two online surveys.

This section of the report details public involvement and outreach activities associated with passenger-only ferry service and outlines the advertising and notification methods Kitsap Transit used for outreach. It also summarizes key themes from public comments and next steps for the project and community outreach. This summary is organized into four sections:

- Outreach at a Glance
- Public Involvement Opportunities
- Summary of Public Comments Received
- Conclusions

II. Outreach at a Glance

- Received over **1,200** responses to the online survey in June
- Conducted interviews with **nine** stakeholders in community leadership roles
- Received nearly **950** responses to online survey in August
- Shared information with over **100** community members at information tables in community locations
- Issued fact sheet for Kitsap Transit website and outreach events
- Posted online advertisements in **six** community publications in June and August
- Distributed press releases and listserv alerts

III. Public Involvement Opportunities

SUMMARY OF OUTREACH ACTIVITIES

Stakeholder interviews

In July, Kitsap Transit sought feedback from stakeholders to better understand community interest in POF, perspectives about funding opportunities, and potential challenges to implementing POF. The following community leaders participated in interviews:

- Scott Bash, Harrison Community Hospital
- Pete DeBoer, Commissioner for Port of Kingston
- Walt Draper, Bremerton community leader
- Commissioner Charlotte Garrido, Kitsap County
- Mayor Patty Lent, City of Bremerton
- Mary McClure, Kitsap Coordinating Council
- Dan Mundle, South Kitsap
- Rex Nelson, Ferry Advisory Committee
- Guy Stitt, President of AMI International

Informational outreach events

Representatives of Kitsap Transit hosted information tables at seven different locations in the community to share information and seek input regarding passenger-only ferry service. The locations included onboard Washington State Ferries vessels and/or terminals to reach ferry users during the peak morning commute. Visitors to the information booth could review project information via a fact sheet and display board and could also fill out an online survey using a laptop provided by staff. A total of 104 community members talked with staff at the following locations:

- Edmond/Kingston ferry
June 16, morning commute
- Fauntleroy/Southworth ferry
June 17, morning commute
- Seattle/Bainbridge ferry
June 18, morning commute
- YMCA Silverdale
June 18, 4-6 p.m.
- Seattle/Bremerton ferry
June 19, morning commute
- Kingston Library
June 19, 12-2 p.m.
- Port Orchard Library
June 19, 4-6 p.m.

June online survey

Kitsap Transit fielded the first online survey from June 9-25, 2014. The purpose of the online survey was to understand:

- Interest in POF service
- Frequency of current ferry use
- Trip purposes
- Cross-sound travel patterns and modes
- Vessel and terminal amenities
- Fare levels and payment methods
- Factors that influence trip choice

Kitsap Transit advertised the survey on the Kitsap Transit website, through press releases to local media, online ads in the local newspapers and blogs, posters distributed to ferries and community gathering places, and via rider alert emails to 2,900 Kitsap Transit riders. The survey was also available by phone in multiple languages through Kitsap Transit customer service.

August online survey

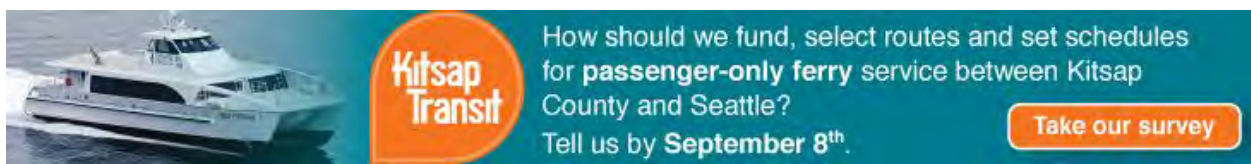
To understand public perspectives on the best way to fund and prioritize routes and schedules for POF, Kitsap Transit conducted a second online survey from August 28-September 8, 2014.

Kitsap Transit advertised the survey on the Kitsap Transit website, through press releases to local media, online ads in the local newspapers and blogs, and via rider alert emails to Kitsap Transit riders. The survey was also available by phone in multiple languages through Kitsap Transit customer service.

PUBLIC INFORMATION AND ADVERTISING

Kitsap Transit offered several ways for the public to share their thoughts about adding passenger-only ferry service and general comments about potential associated economic and environmental impacts. Advertisements posted to the following community publications offered readers the opportunity to participate in the June and August surveys:

- KitsapSun.com
- BremertonPatriot.com
- CentralKitsapReporter.com
- KingstonCommunityNews.com
- KitsapVeteransLife.com
- PortOrchardIndependent.com



Online ad for August survey

Additionally, Kitsap Transit sought to reach community members with information about passenger-only ferry service through notices to the Kitsap Transit listserv, a dedicated page on the agency [website](#), posting a fact sheet online, and a June and August press release to encourage participation in the online survey. A POF dedicated e-mail address was also posted on the KT website to allow community members to provide direct input and ask questions.

IV. Summary of Public Comments Received

Kitsap Transit sought input from the public in variety of ways and recorded their comments and opinions. Throughout the summer, 2,204 people responded to the online survey. Representatives from Kitsap Transit also interacted with over 100 members of the community at information tables and interviewed nine leaders from key stakeholder groups in the area.

KEY THEMES FROM STAKEHOLDER INTERVIEWS AND TABLING EVENTS

Interviews with community leaders and comments from community members provided insight into the perceived benefits, concerns, challenges, and general community opinion regarding implementing passenger-only ferry service. Stakeholders also provided advice to Kitsap Transit on how to successfully implement passenger-only ferry service.

POF Benefits	POF Concerns and Challenges
<ul style="list-style-type: none"> • Better connectivity to downtown Seattle; attracts new people and talent pool to live in Kitsap County • Creates more economic opportunities and employment • Improves travel options and provides fast, convenient way to travel • Better quality of life • Makes Kitsap County a part of the region • Improves access to cultural amenities in Seattle • Potential to minimize traffic near terminals 	<ul style="list-style-type: none"> • Tight budgets and limited funding from state and federal sources • Need to build parking and bus connections to support service • Building regional, political, and leadership support • New program could potentially divert resources from transit service • Reliability, especially during inclement weather • Environmental impacts; avoiding damage to Rich Passage • Potential increase in property values could lead to an increase in property taxes • Ensure shore-side facilities are provided in the program • Frustration over process to implement POF, since past efforts were stalled or halted

Community Opinion on POF	Advice to Kitsap Transit
<ul style="list-style-type: none"> • South Kitsap, Bremerton, Kingston, and real estate communities are likely strong supporters • Previous WSF POF service was great and well-used • Many see POF as providing economic benefit to Kitsap County • Residents living further in-land who don't travel much may be more resistant • Interest in timeline for implementation • Some may feel it's unrealistic, is too costly and serves too few, and Kitsap Transit should focus on core service • Ensure bikes are provided on POF • Interest in Bainbridge/Seattle and Bremerton/Seattle for POF route • Support for early morning service for shipyard workers 	<ul style="list-style-type: none"> • Build support among private sector and engage opinion leaders to share the vision for POF • Coordinate with PSRC • Share Southworth terminal with WSF • Keep public informed • Develop messaging about economic benefit of POF • Offering reliable, frequent trips would gain support among commuter base • Provide parking options near terminal • Coordinate bus with POF schedule • Develop ferry benefit district • Consider safety and security on POF vessels
Fares and Funding	
<ul style="list-style-type: none"> • Do not divert funds from bus service to POF • 8 of 9 stakeholders understood need for some local tax support. • Establish a predictable fare schedule. Suggested fares ranged from \$10-20 round trip. • Many were uncertain about fare box recovery. Suggestions ranged between 20-50%. • Concern regarding the ability to raise the sales tax. Although there was no consensus, some stakeholders provided suggestions about the level of a potential sales tax increase. <ul style="list-style-type: none"> ○ Kingston and two Bremerton stakeholders believed 2/10 percent may be acceptable • One stakeholder recommended the sales tax increase should be part of a larger package tied in with Kitsap Transit buses/Access Ride. • Mixed views about whether communities would support parking tax. • Mixed views about whether ferry benefit districts or county wide district would be more effective. Slightly more expressed concern about county-wide district. • Consider charging for Wi-Fi and guaranteed seat program. 	

SURVEY RESULTS

June survey

Kitsap Transit received a total of 1,257 completed surveys. It should be noted that this is a non-random sampling strategy because respondents chose to respond to the survey advertisements and emails, and were not randomly selected to participate. As a result, the sample is skewed by respondents who ride the Bremerton to Seattle ferry routes. Following are key findings from the survey. To review the full survey summary, see the Appendix.

Key Findings:

➤ **Respondent demographics**

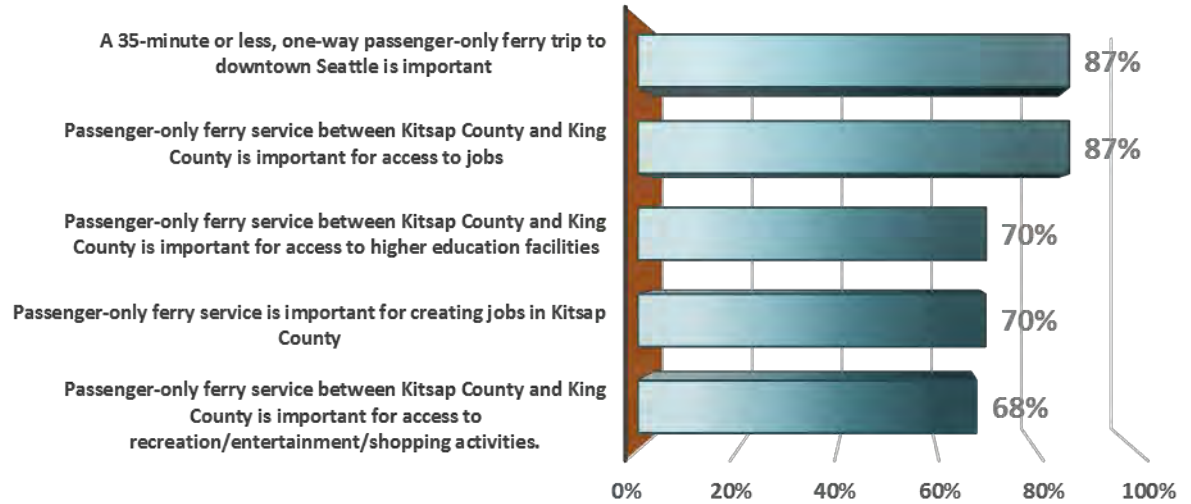
- 87% live in Kitsap County and 9% live in King County
- 77% work full-time, 8% work part-time, and 2% are full or part-time students
- 46% work in King County and 47% work in Kitsap County
- Age:
 - 30% under age 34
 - 46% age 35-54
 - 24% over age 55
- Income:
 - 17% income under \$50k
 - 45% income \$50-100K
 - 38% income over \$100K
- Race/Ethnicity
 - 1.4% Black/African American
 - 87.3% White/Caucasian
 - 1.2% American Indian or Alaska Native
 - 2.3% Asian
 - 1.1% Native Hawaiian or other Pacific Islander
 - 2.0% Hispanic/Latino
 - 4.6% Other

➤ **Support for POF**

Many respondents (68%-87%) strongly agreed with statements about the benefits of passenger-only ferry service, particularly that a 35-minute or less trip is important, and that POF service is important for access to jobs.

Percent rated "6" or "7" on a scale of 1 to 7, where 7 is strongly agree

BASE: ALL SURVEY RESPONDENTS (N=1246-1253)

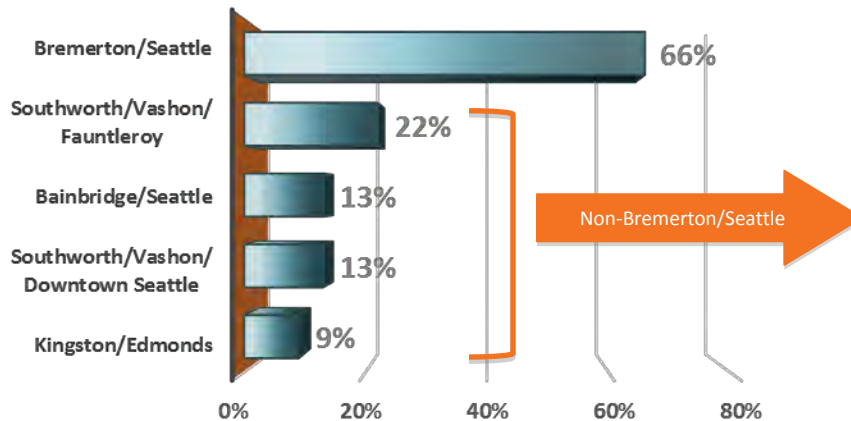


➤ **Ferry routes and trip frequency**

Of the respondents that ride the ferry 1 to 5 or more days a week (62 percent) most of them ride the Bremerton/Seattle route (66 percent), whereas only a few (9 percent) reported they ride the Kingston/Edmonds route. About a fifth of respondents (21%) only ride non-Bremerton/Seattle routes (Southworth, Bainbridge, Kingston) 1 to 5 or more days a week, and about two-fifths (39%) ride the ferry (any route) less than once a week/month.

Respondents that ride the ferry 1 to 5 times a week by route (Multiple Response Allowed)

BASE: ONLY RESPONDENTS THAT RIDE 1 TO 5 TIMES A WEEK (N=770)

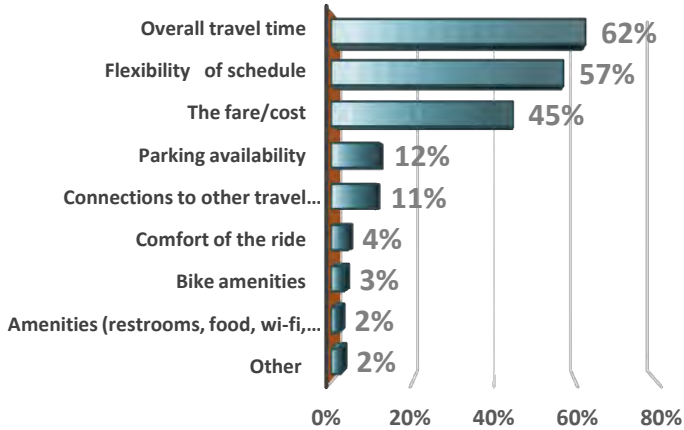


➤ **Trip purpose and factors that influence transportation choice**

Of the respondents that ride the ferry 1 to 5 or more days a week, most of them (83 percent) ride the ferry for travel to work, followed by recreation (30 percent), and shopping (15 percent). For all respondents travel time (62 percent), flexibility of schedule (57 percent), and the fare or cost (45 percent) were the factors that most influenced their transportation choices.

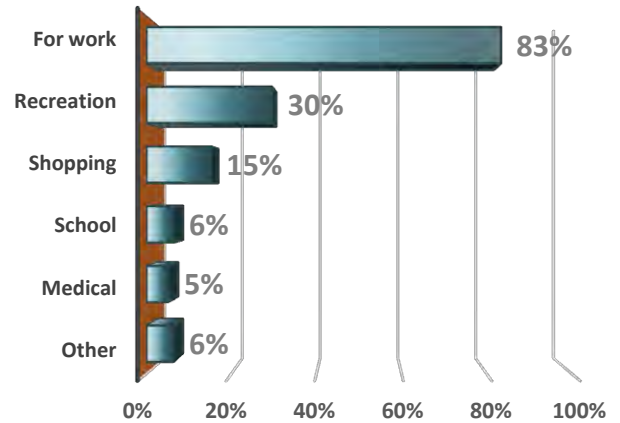
What are the top TWO factors that influence your transportation choices? (Multiple responses allowed)

BASE: ALL SURVEY RESPONDENTS (N=1243)



Ride the ferry 1 to 5 or more days a week for the following purposes:

BASE: THOSE RESPONDENTS WHO RIDE 1 TO 5 OR MORE DAYS WEEK (N=742)

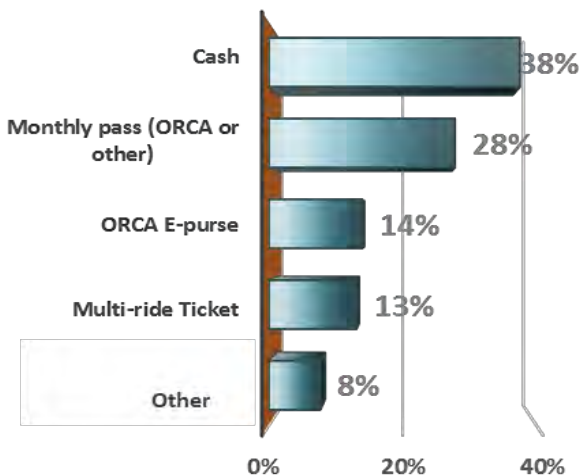


➤ **Terminal arrival and fares**

About half (48 percent) of the respondents reported they walked on the ferry, and just under a quarter (23 percent) drove a car on the ferry. The main way respondents (38 percent) pay fares are with cash or a monthly pass (28 percent). Just over a quarter are provided an employer subsidy to pay for fares.

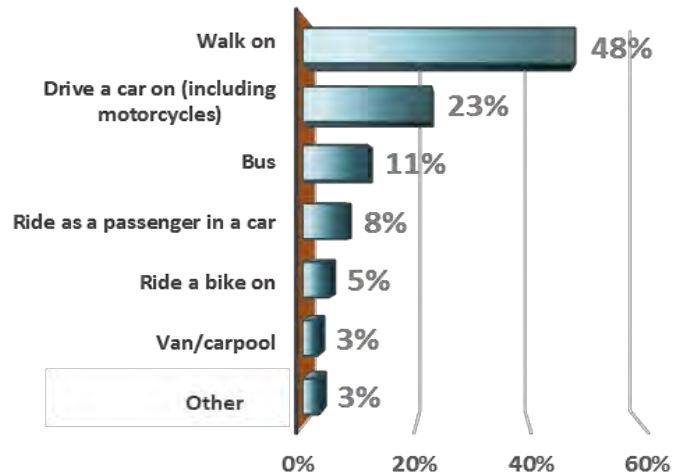
How do you most often pay for your ferry fare?

BASE: ALL SURVEY RESPONDENTS (N=1233)



How do you arrive at the ferry terminal most often?

BASE: ALL SURVEY RESPONDENTS (N=1232)

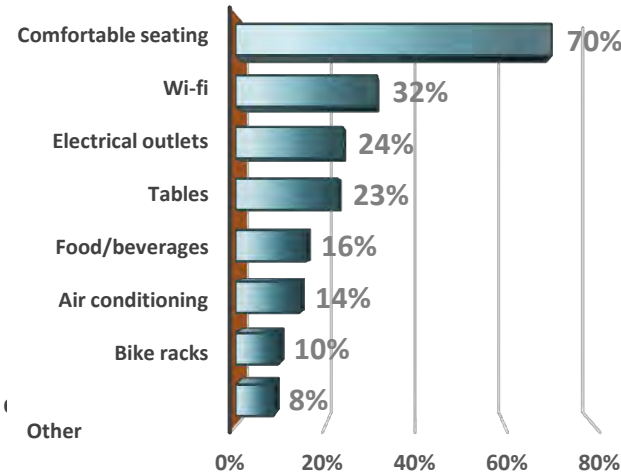


➤ **What amenities are important?**

For all respondents comfortable seating (70 percent) and Wi-Fi (32 percent) were the most important amenities on the ferry. Also for all respondents clean restrooms (50 percent) and a feeling of security (36 percent) were important at the terminal.

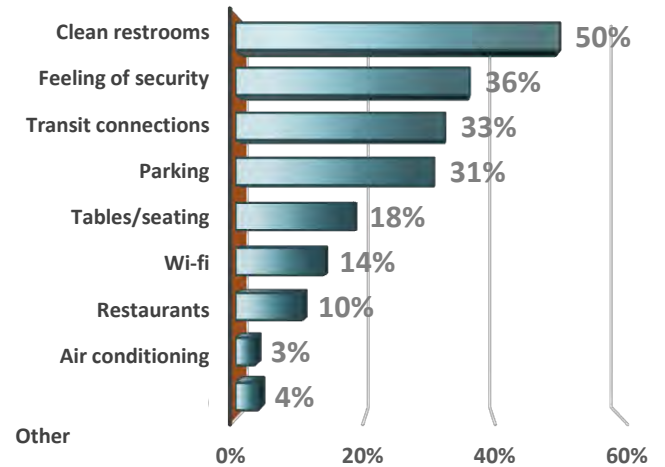
What are the top TWO amenities that are the most important to you when riding on the ferry? (Multiple response allowed)

BASE: ALL SURVEY RESPONDENTS (N=1205)



What the top TWO amenities that are the most important to you at the ferry terminal? (Multiple response allowed)

BASE: ALL SURVEY RESPONDENTS (N=1208)



August survey

Kitsap Transit received a total of 947 completed surveys in August. It should be noted that this is a non-random sampling strategy because respondents chose to respond to the survey advertisements and emails, and were not randomly selected to participate. Following are key findings from the survey. To review the full survey summary, see the Appendix.

Key Findings:

➤ **Respondent demographics**

- 91% live in Kitsap County
- 74 home zip codes reported, with most at:
 - 9% at 98110
 - 12% at 98310
 - 7% at 98311
 - 10% at 98312
 - 10% at 98366
 - 8% at 98370
- 100 work zip codes reported, with most at:
 - 13% at 98101

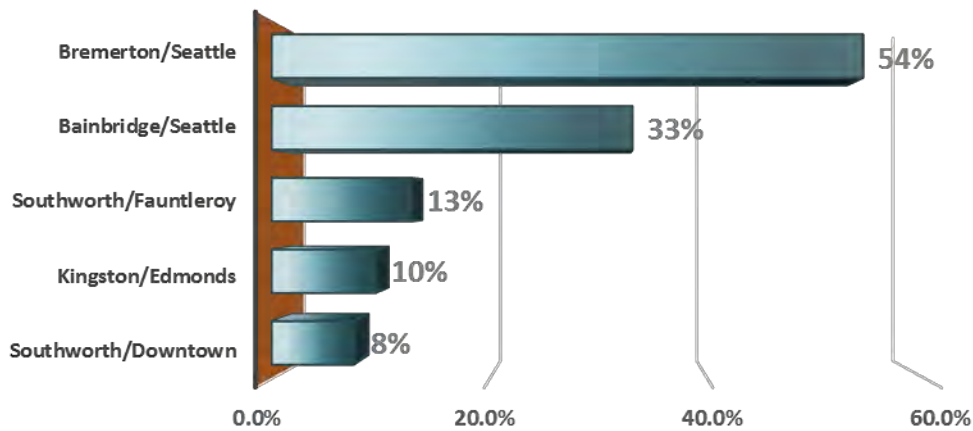
- 11% at 98104
- 5% at 98337
- 4% at 98310
- Age:
 - 15% under age 34
 - 47% age 35-54
 - 38% over age 55
- Income:
 - 16% income under \$50k
 - 45% income \$50-100K
 - 45% income over \$100K

➤ **Ferry routes and trip frequency**

Of the respondents that ride the ferry 1 to 5 or more days a week (n=610), most of them ride the Bremerton/Seattle route (54%), whereas only a few (8-10%) reported they ride the Kingston/Edmonds and Southworth/Downtown route. Most of the respondents (86%) ride the ferry between Kitsap County and Seattle at least once a month.

Respondent that ride the ferry 1 to 5 times a week by route (Multiple Response Allowed)

BASE: ONLY RESPONDENTS THAT RIDE 1 TO 5 TIMES A WEEK (N=610)

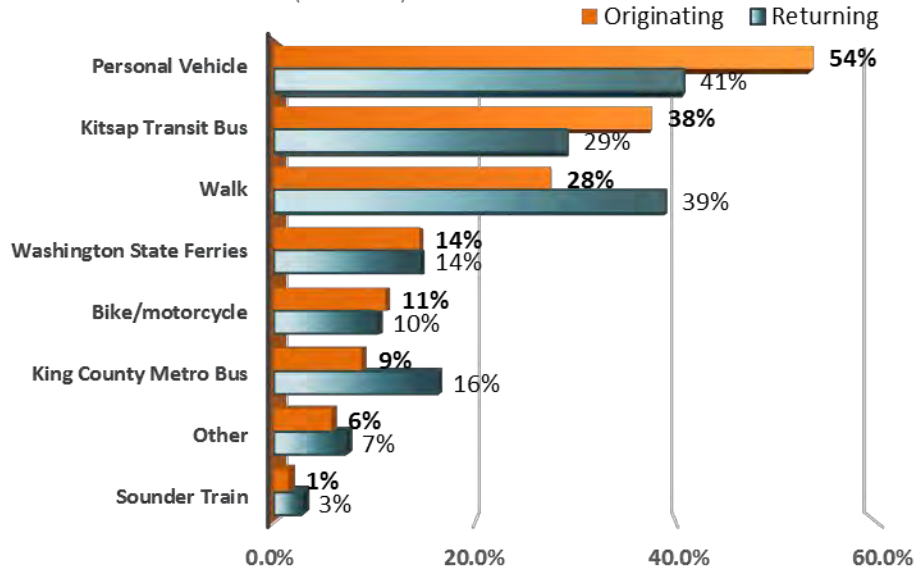


➤ **Getting to terminals and paying for fares**

Most of the respondents use a personal vehicle to arrive and depart from the ferry terminal (54% arrive, 41% depart). Most of the respondents (44%) use single pay fares (cash or ORCA E-Purse), as well as a monthly pass (38%) to pay for ferry fares. Just over a quarter (32%) are provided an employer subsidy to pay for fares.

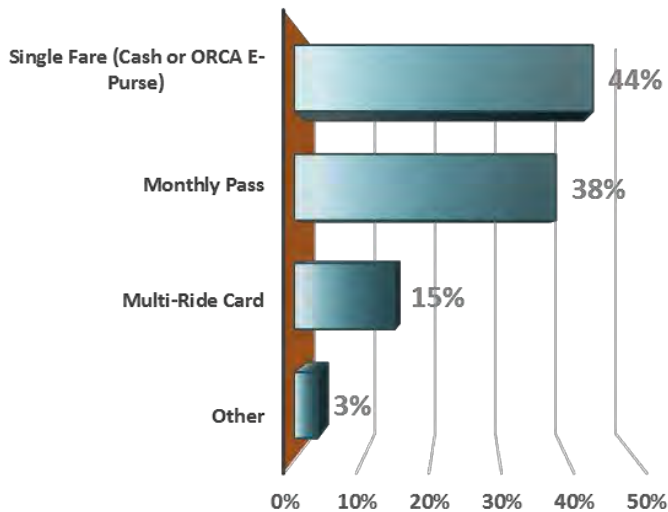
How do you MOST often get to the ferry terminal for your originating and return trips (check all that apply)?

BASE: ALL SURVEY RESPONDENTS (N=774-795)



Which type of ferry ticket do you use MOST frequently?

BASE: ALL SURVEY RESPONDENTS (N=947)

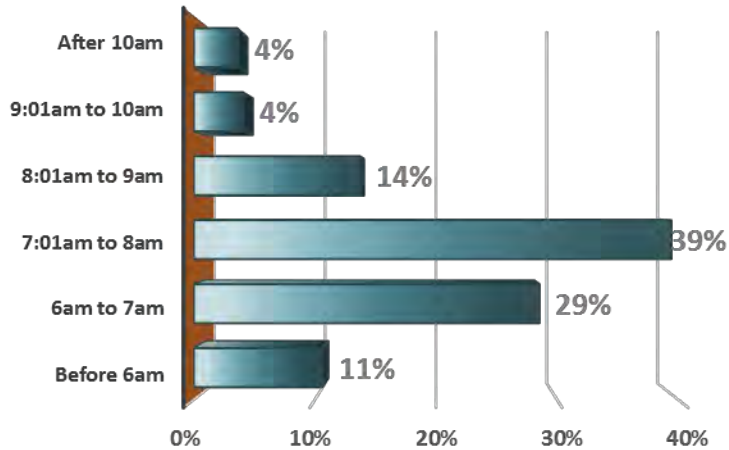


➤ **Arriving and departing**

Most respondents prefer to arrive at the terminal between 7a.m. and 8 a.m. (39%), and most prefer to depart the terminal between 5 p.m. and 6 p.m. Most respondents prefer a service expansion to weekday evenings.

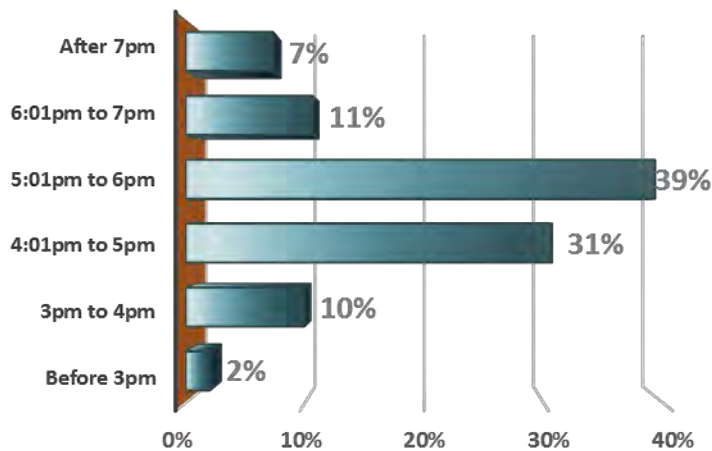
What time do you prefer the ferry to arrive at the terminal near your work in the MORNING?

BASE: ALL SURVEY RESPONDENTS (N=837)



What is the ideal time for the ferry to depart the terminal near your work in the EVENING?

BASE: ALL SURVEY RESPONDENTS (N=834)

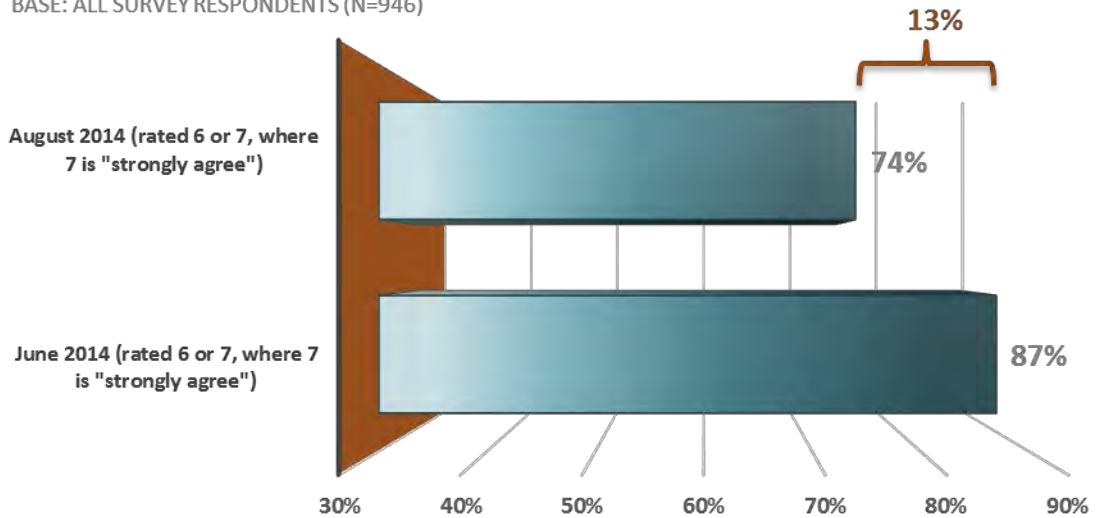


➤ **Support for POF**

Many respondents (74%) continue to strongly agree (rated a “6” or “7”) with the statement that a 35-minute or less, one-way passenger-only ferry trip to Seattle is important, however this is a 13% decline in agreement from the June survey.

Agreement: An approximately 35-minute or less, one-way passenger-only ferry trip to downtown Seattle is important

BASE: ALL SURVEY RESPONDENTS (N=946)

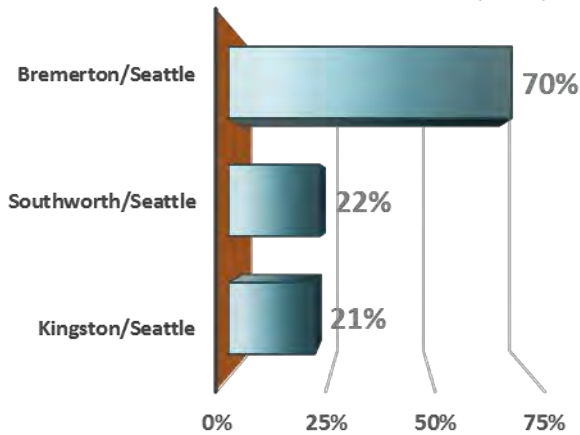


➤ **Likelihood to ride and pay for POF**

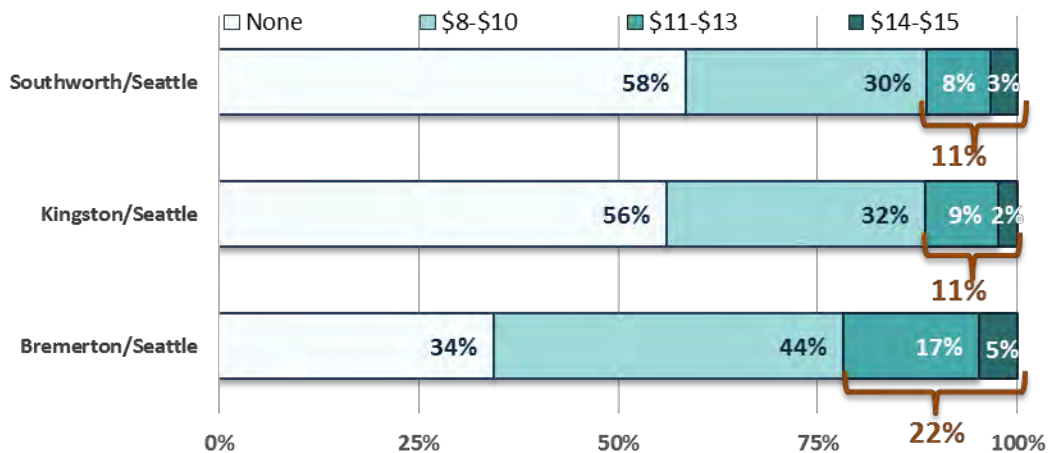
Of those willing to ride POF one to five or more times a week (n=544), most of them (70%) will ride the Bremerton/Seattle POF route. Overall respondents most would prefer to pay between \$8-10. However respondents riding the Bremerton/Seattle route indicate the highest willingness to pay between \$11-15 for POF fares (22%). It should be noted that with the wide range of discounts available to riders it is difficult to draw solid conclusions about the actual fare a rider might expect to pay. However, based on the ranges asked in the survey (without discounts) respondents are more willing to pay fares between \$11-13 rather than \$14-15.

Would ride POF 1 to 5 or more times a week
(Multiple Response)

BASE: RESPONDENTS WILLING TO RIDE 1 TO 5 TIMES (N=544)



How much you would be willing to pay ROUND-TRIP for each passenge?

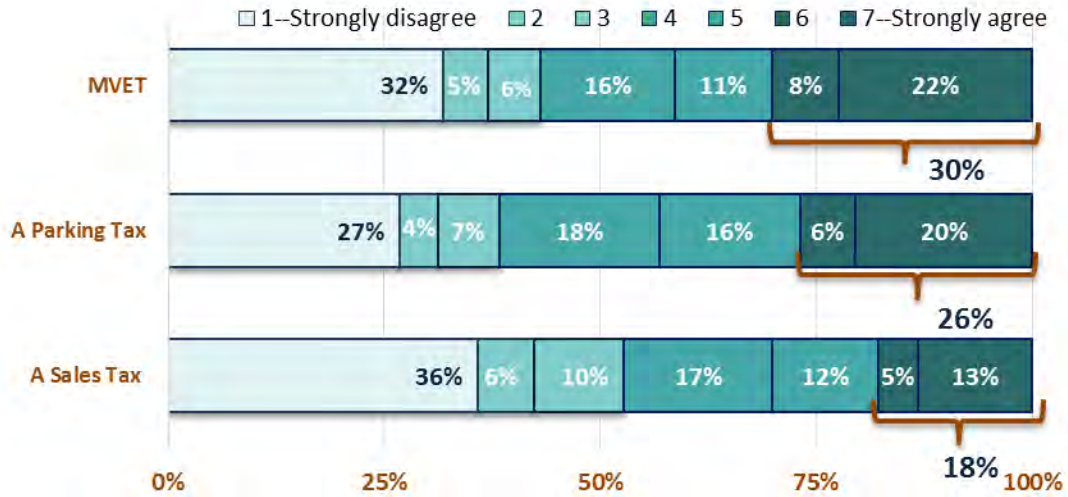


➤ **Support for options to pay for POF**

Overall most respondents are more likely to support a motor vehicle excise tax (MVET) as a way to pay for POF service (30% rated 6 or 7, where 7 is “strongly agree”). More than half the respondents (58%) consider a 0.2 to 0.4 of a percent increase in sales tax a reasonable way to pay for POF to and from Seattle. This popularity amongst the survey responders in the MVET tax is certainly not the norm. Historically, this tax is very unpopular with the public. Some believe this is because of the large sum paid at once during vehicle registration.

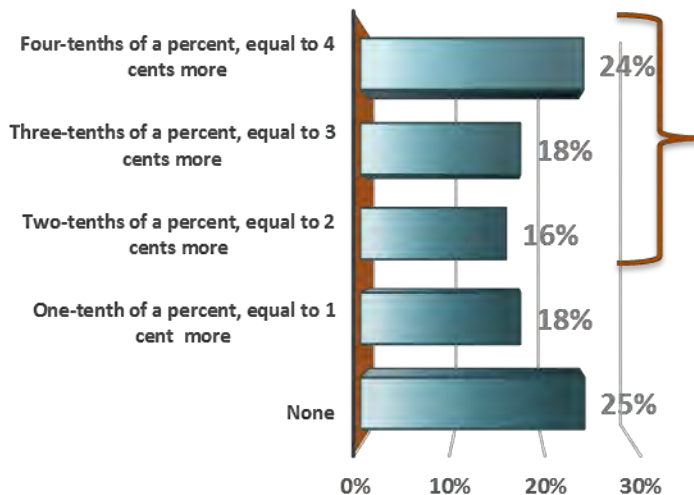
Agreement these tax options are a reasonable way to provide some local tax support for POF to Seattle

BASE: ALL SURVEY RESPONDENTS (N=896)



How much of sales tax increase is reasonable for POF to Seattle?

BASE: ALL SURVEY RESPONDENTS (N=896)



V. Conclusions

The community feedback provided from June-September 2014 informed the final passenger-only ferry business plan and long-range strategy for passenger-only ferry service. Information as it relates to fare collection, likelihood to pay fares, typical commute periods and funding options for service were all carefully considered and incorporated into the analysis and conclusions of the report as it relates to schedule, fare and local funding needed to support the service. In late September, the business plan and long-range strategy was presented to the Kitsap Board of Commissioners.

The public can learn more and stay informed about future POF planning by visiting the Kitsap Transit planning webpage: <http://www.kitsaptransit.com/passenger-only-ferry-business-plan>



Passenger-Only Ferry Business Plan and Long-Range Strategy: Public Involvement Summary Report

Appendix

November 2014

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Fact Sheets

June 2014



Connecting communities with fast, reliable passenger-only ferry service

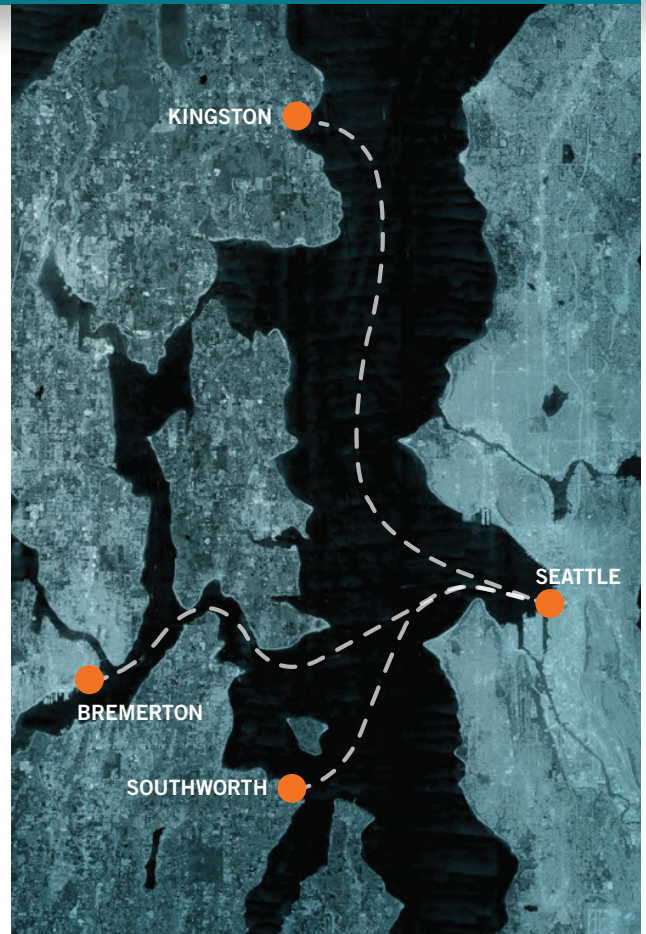
Project overview

Kitsap Transit is developing a proposed business plan and long-range strategy for fast and reliable passenger-only ferry (POF) service connecting communities in Kitsap and King County. We want to better understand community priorities and interest in POF service. This feedback will help guide the business plan, including recommendations for routes, service priorities, and fare programs. Take the survey before June 25!

Kitsap Transit began pursuing options for environmentally responsible passenger-only ferry service in 2003 when Washington State Ferries discontinued the popular Bremerton-Seattle passenger ferry due to funding cuts and concern about beach impacts caused by vessel wakes. In 2012, Kitsap Transit's low-wake research study demonstrated that a low-wake ferry can be operated in Rich Passage without a negative effect on the beaches. The POF business plan and long range strategy will be presented to the Kitsap Transit Board of Commissioners this fall.

Route alternatives

The business plan will evaluate three connections to downtown Seattle; from Bremerton, Kingston, and Southworth.



*Kitsap Transit has identified three route alternatives connecting Kitsap to the Seattle metropolitan area. We want to hear which route you prefer - take our online survey **before June 25!***

Why passenger-only ferry service

- **Cuts commute time nearly in half** - High speed, low wake vessels could improve quality of life for many Kitsap residents by providing a reliable transit connection that takes nearly half as much time as current commute to work options.
- **Connects Kitsap and King County** - Sustainable ferry service between Kitsap and King County supplements the existing transit network.
- **Environmentally responsible transportation option** - Kitsap Transit's recent Wake Study found success operating a high-speed, low-wake passenger ferry vessel through Rich Passage.
- **Supports economic vitality** - Ferry service provides a vital economic link between communities of Kitsap County and the Seattle metropolitan area. POF service can support the creation of local jobs by providing a reliable, speedy transportation option and can attract economic investment in Kitsap County.
- **Provides capacity to manage increased ridership demand** - Washington State Ferries (WSF) ridership grew 1.5 percent last year, with a 3.1 percent increase in walk-on passengers. Approximately 5 million total riders traveled from Bremerton, Kingston, and Southworth in 2013. This accounts for over 30 percent of WSF's total ridership. Kitsap Transit bus ridership increased 3 percent last year and carries approximately four million riders.

We want to hear from you now!

Take our online survey

On June 9, Kitsap Transit launched an online survey to gauge community interest in POF service between Kitsap and King County to gather input on route alternatives.

The survey will be **available online until June 25.**

Survey link: www.surveymonkey.com/s/Passenger-onlyFerry

Please call **1-800-501-7433** to complete the survey over the phone or in alternate languages.



Stay involved:

For more information and project updates, visit our website or sign up for our e-newsletter.

Visit

www.kitsaptransit.com/passenger-only-ferry-business-plan

Contact:

Email: POFinfo@kitsaptransit.com

Phone: 1-800-501-7433

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August 2014



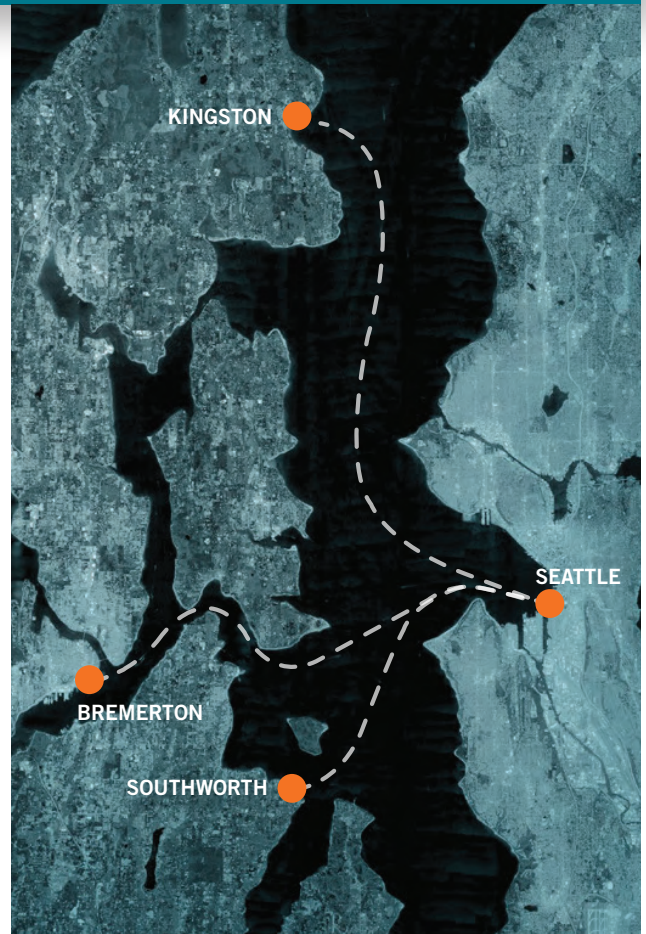
Connecting communities with fast, reliable passenger-only ferry service

Project overview

Kitsap Transit is developing a proposed business plan and long-range strategy for fast and reliable passenger-only ferry (POF) service connecting communities in Kitsap and King County. As part of this process, we are conducting two online surveys to better understand community priorities and interest in POF service.

The first survey concluded in June 2014 and we received nearly 1,300 responses. Almost two-thirds of respondents indicated that they ride the ferries one to five or more days a week, and many respondents agreed that a 35-minute passenger-only ferry service is important for access to jobs. The second survey is focused on funding, routes, and service schedules for the proposed POF service. Take the survey before September 8!

Kitsap Transit began pursuing options for environmentally responsible passenger-only ferry service in 2003 when Washington State Ferries discontinued the popular Bremerton-Seattle passenger ferry due to funding cuts and concern about beach impacts caused by vessel wakes. In 2012, Kitsap Transit's low-wake research study demonstrated that a low-wake ferry can be operated in Rich Passage without a negative effect on the beaches. The POF business plan and long range strategy will be presented to the Kitsap Transit Board of Commissioners this fall.



*Kitsap Transit identified three route alternatives connecting Kitsap communities to downtown Seattle. We are currently evaluating funding scenarios for POF service. We want to hear from you – take our online survey before **September 8**.*

Why passenger-only ferry service?

- **Cuts commute time nearly in half** - High speed, low wake vessels could improve quality of life for many Kitsap residents by providing a reliable transit connection that takes nearly half as much time as current commute to work options.
- **Connects Kitsap and King County** - Sustainable ferry service between Kitsap and King County supplements the existing transit network.
- **Environmentally responsible transportation option** - Kitsap Transit's recent Wake Study found success operating a high-speed, low-wake passenger ferry vessel through Rich Passage.
- **Supports economic vitality** - Ferry service provides a vital economic link between communities of Kitsap County and the Seattle metropolitan area. POF service can support the creation of local jobs by providing a reliable, speedy transportation option and can attract economic investment in Kitsap County.
- **Provides capacity to manage increased ridership demand** - Washington State Ferries (WSF) ridership grew 1.5 percent last year, with a 3.1 percent increase in walk-on passengers. Approximately 5 million total riders traveled from Bremerton, Kingston, and Southworth in 2013. This accounts for over 30 percent of WSF's total ridership. Kitsap Transit bus ridership increased 3 percent last year and carries approximately 4 million riders.

We want to hear from you now!

Take our online survey

Starting August 27, we will conduct the second online survey focused on funding, routes, and service schedules. Feedback from this survey will help guide the business plan, including recommendations for routes, service priorities and fare programs. The second survey will be live from **Wednesday Aug. 27 to Monday, Sept. 8, 2014:**

www.surveymonkey.com/s/update_KitsapFerry

Please call **1-800-501-7433** to complete the survey over the phone or in alternate languages.



Stay involved:

For more information and project updates, visit our website or sign up for our e-newsletter.

Visit

www.kitsaptransit.com/passenger-only-ferry-business-plan

Contact:

Email: POFinfo@kitsaptransit.com

Phone: 1-800-501-7433

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Passenger-Only Ferry Service Project Summary Report

October 2014




Kitsap Transit identified three route alternatives connecting Kitsap Communities to downtown Seattle, which include: Bremerton, Kingston and Southworth.

There have been numerous past studies that document potential benefits of passenger-only service to Kitsap County residents. This project is built upon those studies and includes potential ridership demand for the proposed routes, terminal improvements, vessel requirements, a proposed financial plan, and a phasing strategy and implementation plan to bring all of the elements together to guide the Kitsap Transit Board of Commissioners.

New funding sources will be required because current Kitsap Transit revenues are not sufficient for cross sound passenger ferry service. New grant funding will address some portion of terminal improvements and vessel acquisition. However a local revenue source will be necessary to supplement capital costs not covered by grants and to subsidize operating costs in excess of farebox revenues.

Why passenger-only ferry service?

Cuts commute time nearly in half - High-speed, low-wake vessels could improve quality of life for many Kitsap residents by providing a reliable transit connection that takes nearly half the time as current commute to work options.

Connects Kitsap and King County - Supplements the existing transit network.

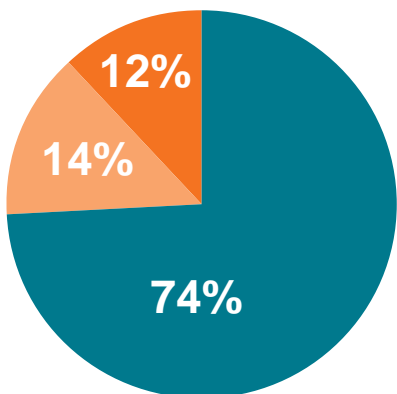
Environmentally responsible transportation option - Kitsap Transit's recent Wake Study found success operating a high-speed, low-wake passenger ferry vessel through Rich Passage.

Supports economic vitality - Ferry service provides a vital economic link between communities of Kitsap County and the Seattle metropolitan area. POF service can support the creation of local jobs and attract economic investment in Kitsap County.

Provides capacity to manage increased ridership demand - Washington State Ferries (WSF) ridership grew 1.5 percent last year, with a 3.1 percent increase in walk-on passengers. This accounts for over 30 percent of WSF's total ridership. Kitsap Transit bus ridership increased 3 percent last year.

What has the community told us about proposed POF service?

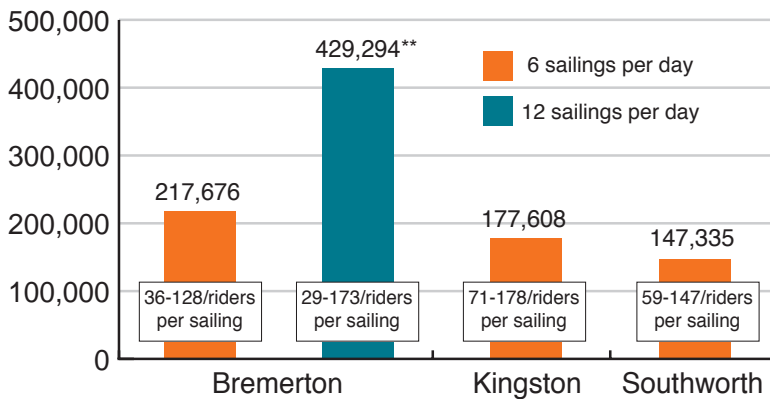
The majority of survey respondents indicated that providing 35 minute or less POF service to downtown Seattle is important.



Do you agree that a 35 minute or less POF trip to downtown Seattle is important?

- Strongly Agree
- Somewhat Agree
- Agree Less

Projected Ridership Demand*



* Based on 2014 population and demographic information.
 **12 round trips a day only evaluated for Bremerton.

What is the projected ridership demand?

The annual ridership demand is based on 6 commute period round trips each weekday. The ridership analysis shows sufficient ridership to support the service.

How will the service be managed?

Kitsap Transit will contract with King County Marine Division for operation of the passenger ferry service. Kitsap Transit will provide the vessels and terminal facilities and will set key operating policies such as fare and service schedules.

How much will it cost?

The initial investment in vessels and terminals will be approximately \$44 million between 2015 and 2023. An annual subsidy will also be required to cover operating costs in excess of farebox revenues.

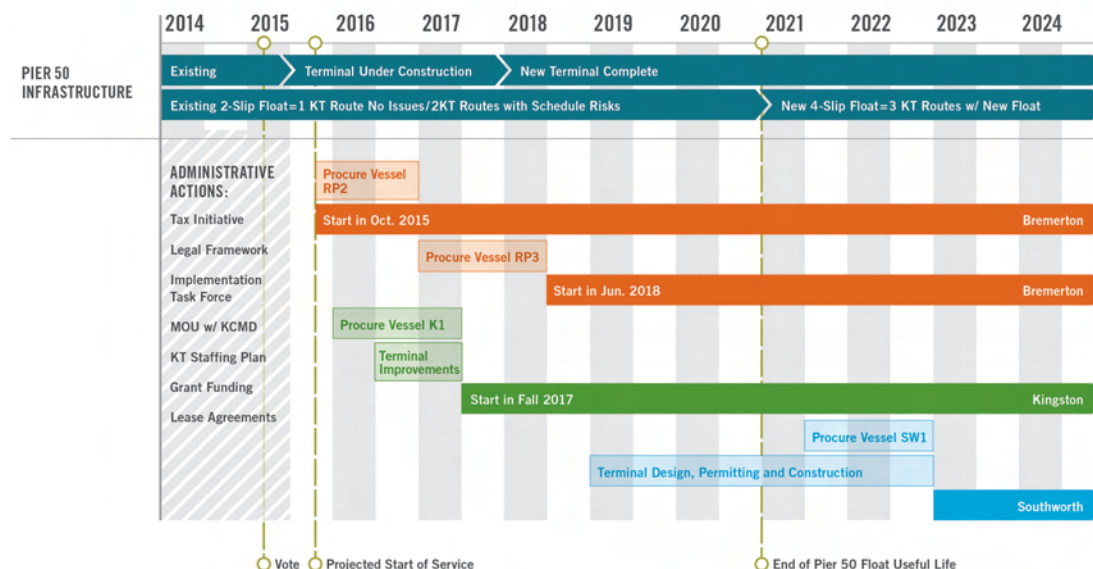
Year	Annual Subsidy	Farebox Recovery	Service Level
2016	\$1.9M	29%	One vessel serving Bremerton
2018	\$4.9M	33%	One vessel serving Kingston, two vessels serving Bremerton
2023	\$6.7M	33%	One vessel serving Southworth, One vessel serving Kingston, two vessels serving Bremerton

What economic benefits will the service bring?

Drawing from experience with other new land-based transit services across the US, Kitsap County should realize economic benefits to both users and the community at large.

	Annual Benefits		One-Time Benefits
	User Benefits in Travel Time Savings	Wider Economic Benefits	Total Real Estate Value Created Within ½ Mile
Bremerton/Seattle	\$3.2M	\$811,000	\$3.8M
Kingston /Seattle	\$2.2M	\$540,000	\$3.6M
Southworth/Seattle	\$2.1M	\$513,000	\$2.1M
Total County	\$7.5M	\$1.9M	\$9.5M

How do we phase implementation?*



Contact:

For more information and project updates, visit our website.

Visit

www.kitsaptransit.com/passenger-only-ferry-business-plan

Contact:

Email: POFinfo@kitsaptransit.com

Phone: 1-800-501-7433

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Poster

Interested in **passenger-only ferry service** between Kitsap County and Seattle?



We want to hear from you now!

Help Kitsap Transit better understand community interest in passenger-only ferry service from Kitsap County to Seattle.

The proposed business plan evaluates three connections to downtown Seattle; from Bremerton, Kingston, and Southworth. Environmentally sensitive, high speed service could **cut commute times in half**.



Take our survey

www.surveymonkey.com/s/Passenger-onlyFerry

Survey available until June 25.

Please call **1-800-501-7433** to complete the survey over the phone or in alternate languages.

Plan updates and more information will be available online: www.kitsaptransit.com/passenger-only-ferry-business-plan

Web Ads



**Kitsap
Transit**

Interested in passenger-only ferry service between
Kitsap County and Seattle?

[Take our survey](#)



**Kitsap
Transit**

How should we fund, select routes and set schedules for passenger-only ferry service between Kitsap County and Seattle?
Tell us by September 8th.

[Take our survey](#)



Press Releases

60 Washington Ave. Ste. 200
Bremerton, WA 98337
Phone: 360.479.6962
Fax: 360.377.7086

www.kitsaptransit.org



• News Release • News Release • News Release •

FOR FURTHER INFORMATION, CONTACT:

Contact Name: John Clauson
Phone Number : 360.478.6223

FOR RELEASE:

June 9, 2014

Kitsap residents can help shape the future of
passenger-only ferry service. Community survey
now live!

BREMERTON – Today, Kitsap Transit launched an online [community survey](#) to help guide development of its proposed business plan and long-range strategy for fast and reliable passenger-only ferry service between Kitsap County and downtown Seattle.

“Passenger-only ferry service could cut commute times for Kitsap residents in half,” said John Clauson, Kitsap Transit Executive Director. “It’s important we hear from residents in order to plan effective service that meets community needs. What we learn from the survey will help to inform the business plan, including recommendations for routes, service priorities, and fare programs.”

Kitsap Transit will evaluate three connections to Seattle from Bremerton, Kingston, and Southworth.

Kitsap Transit began pursuing options for environmentally responsible passenger-only ferry service in 2003 when Washington State Ferries discontinued the popular Bremerton-Seattle passenger ferry due to funding cuts and concern about beach impacts caused by vessel wakes. In 2012, Kitsap Transit’s low-wake research study demonstrated that a low-wake ferry can be operated in Rich Passage without a negative effect on the beaches.

The final business plan and recommendations will be presented to the Kitsap Transit Board of Commissioners this fall.

The [survey](#) will be available online until June 25. Please call 1-800-501-7433 to complete the survey over the phone or in alternate languages. Plan updates and more information will be posted to www.kitsaptransit.com/passenger-only-ferry-business-plan.

###

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www.kitsaptransit.org



• News Release • News Release • News Release •

FOR FURTHER INFORMATION, CONTACT:

Contact Name: John Clauson
Phone Number: 360.478.6223

FOR RELEASE:

August 28, 2014

Kitsap residents invited to weigh in on funding, routes, and schedules for future passenger-only ferry service. Community survey now live!

BREMERTON – Today, Kitsap Transit launched the second of two online community surveys to help guide development of its business plan and long-range strategy for passenger-only ferry service between Kitsap County and downtown Seattle.

Results from the June survey show two-thirds of the 1,300 survey respondents ride the ferries one to five or more days a week, and many agreed that a 35-minute trip on a passenger-only ferry service is important for access to jobs.

“After looking at terminal and vessel infrastructure needs, our next step is to look at the best way to fund and prioritize routes and schedules for passenger-only ferry service,” said John Clauson, Kitsap Transit Executive Director. “We had a great response to the first survey and are looking forward to more input from the community this round.”

Kitsap Transit began pursuing options for environmentally responsible passenger-only ferry service in 2003 when Washington State Ferries discontinued the popular Bremerton-Seattle passenger ferry due to funding cuts and concern about beach impacts caused by vessel wakes. In 2012, Kitsap Transit’s low-wake research study demonstrated that a low-wake ferry can be operated in Rich Passage without a negative effect on the beaches.

Kitsap Transit will evaluate three connections to Seattle from Bremerton, Kingston, and Southworth. The final business plan and recommendations will be presented to the Kitsap Transit Board of Commissioners this fall.

The survey will be available online at https://www.surveymonkey.com/s/update_KitsapFerry until September 8. Please call 1-800-501-7433 to complete the survey over the phone or in alternate languages. Plan updates and more information will be posted to www.kitsaptransit.com/passenger-only-ferry-business-plan.

###

Tabling Event Summary

EDMONDS/KINGSTON FERRY

- The 6:20 Edmonds/Kingston and 7:05 Kingston/Edmonds runs went well. The Kingston/Edmonds run a higher ridership, and more people were interested in passenger only ferry service.

of participants

8 visitors

3 took the survey

2 people said they had already taken the survey

Comment summary:

- Supported the POF because it will keep cars off the road near terminals (ex. traffic on Edmonds Way) and would cut down commute time. They would also be willing to pay more because the total cost of ferry fare and parking fees is too expensive.
- One participant would only ride the POF if the ride times were aligned with his commute, and flexible. He didn't want to be running for the ferry, especially if transit was late, etc.
- One participant was critical of a new POF, because a POF has been docked at Kingston for two years. He said they had shut down the program recently, and that a new ferry would be a waste of funds.
- One participant wanted me to tell Kitsap Transit management that he really appreciates Route 91 driver Nacho. His positive attitude and willingness to let the participant stay on the bus till the transit center (closer to his house) has made his commute easier since route 62 was eliminated.

FAUNTLEROY/SOUTHWORTH FERRY

- 7:05 to Southworth – most riders were students going to school, stopping off at the Vashon Island stop. From Vashon to Southworth, very few people were on the ferry at that point.
- 7:55 to Fauntleroy: All notes in comments summary relate to the Southworth to Fauntleroy run.

of participants

15 visitors

12 took the survey

At least 3 who took the survey on the ferry an additional flyer so that their friend/spouse could take the survey online as well.

Comment summary:

- From Southworth to Seattle ride, once the Captain made the announcement that I was on board providing information, I was literally bombarded by a line of people wanting to take the survey and grab informational flyers. I'm glad I brought print offs since they only had a few minutes before getting off the Vashon stop.
- All people who came up to me were very receptive to the idea of a POF service.
- Some had questions about what the cost would be, but didn't really seem to care how much more expensive it would be and seemed to be willing to pay a higher price.

SEATTLE/BAINBRIDGE FERRY

- More riders traveled on the 7:55 Bainbridge/Seattle run than the earlier 7:05 Seattle/Bainbridge that were interested in the POF. A number had already taken the survey and some were interested if a Bainbridge/Seattle POF was also considered.

of participants

23 visitors

5 left a written comment

6 had already taken the survey

Comment Summary:

- Wanted to be sure bikes would be permitted on the POF.
- Since Bainbridge/Seattle is not being considered as a POF connection, a number of visitors wanted to have that route proposed as well, particularly during rush hour.
- Specifically mentioned game-day service (from Bainbridge to Downtown and Bremerton to Downtown). Cited that the ferries do not hold the boat to wait for game-goers, so he felt frustrated that he either leaves games early or has to wait for the next boat.
- Thought a route connecting Bremerton/Bainbridge would be great for commuters, who currently drive nearly an hour for their commute (or a bridge connection to Illahee).
- Wanted to know the exact parameters for what constituted sufficient interest to establish a route. Wanted to know specifically about funding sources, asking if the program would take funds from bus service (which they said needs expanded all-day service anyways).
- Would be great for Kingston community and would maybe get more tourists to visit events like the farmers' market.
- Although none of the visitors would have switched to a Bremerton run, 9 thought that the Bremerton/Seattle connection would be great for development and jobs.
- Expressed concerns that Kitsap Transit couldn't make a program successful when WSF handled the other boats "Why isn't WSF doing this?"
- Many wanted to know about a timeline for implementation. There was a general sense of support for the idea, but mitigated by what many viewed as failed past attempts "oh, they're trying *this* again."

Written Comments

1. "Use the foot ferries on game days off of Bainbridge + Bremerton."
2. "I wouldn't need the proposed routes, but I would love for this for commuting from Bainbridge if it cut the commute time."
3. "What about a Bainbridge route? I'd like to see more midday bus service on BI or AT LEAST two-way during rush hour."
4. "Passenger only from Bainbridge to Seattle (even high season etc.). Regular service ferry from Bainbridge/Bremerton, as driving around 40-45 minutes right now and all of the mileage being used on cars."
5. "We should have a fast traffic foot ferry service between Bainbridge and Seattle. Also, how about a fast ferry between Bainbridge and Bremerton? I have to drive 30 mins to Cross Agate pass to get there now. A ferry could cross that water in less than 5 min."

SEATTLE/BREMERTON FERRY

- Ferry riders were very interested and supportive of the route between Bremerton and Downtown, but there was also linger pessimism about if the program could succeed. Most interested visitors had ridden the Rich Passage 1 during its trial but seemed to think the service was stopped because the program was unsuccessful, not because the vessel wake study was completed. Due to this, many of their questions asked about what constituted enough support to get the route established and secure from being discontinued *again* after decades of agency and private attempts to get the service going.
- Commuters did seem eager for a quicker trip with more frequent/quicker service and seemed more informed about the history of the POF service than other communities (and wanted to stay informed by signing up for the listserv).

of participants

34 visitors

7 written comments

5 had already taken the survey (one even said he had taken it twice because he wanted the service so badly)

Comment Summaries

- Frustration from survey that you can't rank the priority of the suggested routes .
- 1 visitor very exuberantly exclaimed that restoring the quick trip "would be the best!"
- Shipyard workers said that the quick service early in the morning (arriving before their 6 am shifts) and before 4 pm in the afternoon would be great to substitute/fill in for the larger ferries and give them more flexibility in their commute.
- Visitor expressed that implementing a POF has been bogged down for years and has wasted time and money.
- Active in the outcome of the wake study for the Rich Passage I and had wanted KT to test a hovercraft and not a hydrofoil to reduce the shoreline damage and was still not convinced the vessel wouldn't cause significant degradation.
- Expressed frustration over having the process for implementing POF service having many stops and starts – and could recall issues even decades ago.
- Wanted to know the parameters for gauging sufficient interest and wanted to be sure that, in the instance that similar levels of interest on multiple routes occurred, that multiple routes could be implemented (and that Bremerton would be one of them). If there were limited funds, which route would be for sure implemented.
- Comments on once the Seattle waterfront and POF terminal was upgraded with a permanent shelter that more people would use it. She said that being exposed to the elements has driven potential riders away.
- Wanted a solid timeline for implementation.

Written Comments

1. "It would be incredible if there was an early route from Seattle to Bremerton. Working for Puget Sound Naval Shipyard, there are many positions that need to be there earlier than 0700 (for me 0600 on a lot of days) and there would be great interest in adding this route so we don't have to drive around."
2. "Definetly want a ferry service for commutes from Seattle to Bremerton for peak hours. Would like morning service starting at 5:45 am and 3:30 pm to Seattle."
3. "Would love a commuter passenger only ferry Seattle>Bremerton. Lv Sea approx. 6am, lv Bremerton approx. 415 pm."
4. "I would ride the ferry to go to work 5 days a week if it arrived at Bremerton @7:00 and left Bremerton to go to Seattle @ 4:20ish."
5. "Yes—you guys got the boat...use it son. Brem/Sea run"
6. "I'm still not sure that people will use this service. Mainly because the difference that time on the run will make & still the damage that could still happen from wake"
7. "I would for sure ride a passenger only ferry between Bremerton + Seattle"

YMCA SILVERDALE

- Visitors that expressed interest would have been users of the Bremerton/Seattle connection. Most people who declined information were individuals that did not need to travel to Seattle and resided and worked on the peninsula.

of participants

18 visitors

1 written comment

Comment Summary:

- Teen/college-aged visitors said the Bremerton run would be useful for getting to school/entertainment in Seattle.

- A visitor in military uniform said that he wanted the service but was frustrated that it already hasn't been implemented successfully.
- A 35-minute commute from Bremerton to Seattle would be "SWEET!"
- A visitor liked the idea of making sure to link the bus routes and the POF sailings so people didn't have to park near the terminals.
- A visitor liked the idea, but was worried about security (specifically that shoplifters could jump on the ferry for a quick getaway). She also wanted to be sure that the vessels would have enough lifejackets and "wet suits."

Written Comments:

1. "I am very interested in the Bremerton>Seattle foot ferry. Making the trip in 35 minutes is huge!! I feel this service from downtown Bremerton, which seems to be growing, would be very popular. High Seattle rent prices make Bremerton look good!"

KINGSTON LIBRARY

- The only 2 people who came to the library and expresses interest in the passenger only ferry were a couple in their 20s. The lady took a handout for herself and for her father, who she said would be interested in taking the survey.
- All other people who entered the library were young kids returning/picking up books.

of participants

2 visitors

0 took the survey

0 people said they had already taken the survey

Comment Summary:

N/A

PORT ORCHARD LIBRARY

- Only 1 women took the survey there. She was a mom looking for employment since moving to Port Orchard.
- 3 men stopped by just to talk about the POF, and asked questions such as what the cost would be and when would it be implemented?
- One man was excited about this ferry potentially coming back since he used to take the POF that was around in the 90s, but that one stopped due to the wake causing shore erosion on Bainbridge Island.
- Another one mentioned that getting longer hours on the Sunday ferry would be really helpful as well.
- 1 of the men went on to tell me that the transit currently is horrible.

of participants

4 visitors

1 took the survey

0 people said they had already taken the survey

Comment Summary:

N/A

June Survey

Kitsap Passenger-Only Survey

Kitsap Transit is developing a proposed business plan and long-range strategy for passenger-only ferry service between Kitsap County and downtown Seattle. Environmentally sensitive, high speed passenger ferry service could cut commute times in half, improving the quality of life for many Kitsap residents and supporting a strong economic base in Kitsap County.

We want to better understand community priorities and interest in passenger-only ferry service. This feedback will help guide the business plan, including recommendations for routes, service priorities, and fare programs.

Please complete this quick online survey by June 25, 2014. Your answers are completely confidential and are important to help plan for future passenger-only service.

Thank you!

Kitsap Passenger-Only Survey

1. Please rate the following on a scale of 1 to 7 (where 1=strongly disagree and 7=strongly agree) how strongly you agree or disagree with the following statements:

Agreement

A 35-minute or less, one-way passenger-only ferry trip to downtown Seattle is important

Passenger-only ferry service between Kitsap County and King County is important for access to jobs

Passenger-only ferry service between Kitsap County and King County is important for access to higher education facilities

Passenger-only ferry service between Kitsap County and King County is important for access to recreation/entertainment/shopping activities.

Passenger-only ferry service is important for creating jobs in Kitsap County

Kitsap Passenger-Only Survey

2. What are the top TWO factors that influence your transportation choices most (select only two)?

- The fare/cost
- Parking availability
- Flexibility of schedule
- Overall travel time
- Comfort of the ride
- Connections to other travel options/services
- Amenities (restrooms, food, wi-fi, etc)
- Bike amenities
- Other (please specify)

3. How frequently do you ride the following ferry routes

	Frequency
Bremerton/Seattle	<input type="text"/>
Bainbridge/Seattle	<input type="text"/>
Kingston/Edmonds	<input type="text"/>
Southworth/Vashon/Fauntleroy	<input type="text"/>
Southworth/Vashon/Downtown Seattle	<input type="text"/>

Kitsap Passenger-Only Survey

4. How do you arrive at the ferry terminal most often? Do you:

5. How do you most often pay for your ferry fare?

6. Is this fare provided with a subsidy from your employer or school?

7. How often do you ride the ferry for the following purposes?

	Frequency
Travel to work	<input type="text"/>
Travel to school	<input type="text"/>
Recreation	<input type="text"/>
Shopping	<input type="text"/>
Medical or other appointment	<input type="text"/>
Other	<input type="text"/>

8. What are the top TWO amenities that are the most important to you when riding on the ferry? (Choose only two)

- Wi-fi
- Tables
- Comfortable seating
- Electrical outlets
- Air conditioning
- Food/beverages
- Bike racks
- Other (please specify)

Kitsap Passenger-Only Survey

9. What the top TWO amenities that are the most important to you at the ferry terminal? (Choose only two)

- Restaurants
- Wi-fi
- Air conditioning
- Tables/seating
- Clean restrooms
- Feeling of security
- Parking
- Transit connections
- Other (please specify)

Kitsap Passenger-Only Survey

10. How likely are you to ride passenger-only ferry service for the following routes if they were to become available?

Likelihood

Bremerton/Seattle

Southworth/Seattle

Kingston/Seattle

11. How frequently would you ride the following ferry routes if they were passenger-only service?

Frequency

Bremerton/Seattle

Southworth/Seattle

Kingston/Seattle

12. Knowing that passenger-only ferry service can provide a reliable 35 minute or less one-way ferry service to downtown Seattle, how much MORE are you willing to pay in ADDITION to the current fare you already pay for one-way passenger-only service to and from downtown Seattle?

Kitsap Passenger-Only Survey

The last questions are demographic questions, which are important for validating that the survey responses are representative of those that ride ferries in Puget Sound. Again, your responses remain anonymous.

13. What County do you live in?

14. What County do you work or attend school in?

15. Which of the following describes your employment status?

16. What is your gender?

17. What is your age?

18. Are you from a Hispanic, Latino, or Spanish-speaking background?

19. What race would you classify yourself as?

20. Which of the following best describes your household income, before taxes, for 2013?

June Survey Results



PASSENGER-ONLY FERRY SERVICE ONLINE SURVEY EXECUTIVE SUMMARY

PRR, Inc.

July 2014



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Executive summary

What was the purpose of the survey?

Over the past two decades, Kitsap Transit, Washington State Ferries, and other local jurisdictions have made multiple attempts to provide sustainable passenger ferry service between Kitsap County and King County. Kitsap Transit began pursuing strategies for a sustainable Passenger-Only Ferry (POF) service in 2003 when Washington State Ferries discontinued the popular Bremerton-Seattle passenger ferry. Kitsap Transit recently completed a research study and found it was possible to successfully operate a high-speed, low-wake passenger ferry through Rich Passage.

In April 2014, Kitsap Transit began developing a business plan and long-range strategy that will provide a comprehensive blueprint for implementing passenger ferry service. As part of this business plan, a public involvement strategy was implemented to gauge public support for POF service and gather input on project alternatives. This strategy included stakeholder interviews, tabling events, press releases, online ads, a fact sheet, and an online survey. The purpose of the online survey was to understand:

- Interest in POF service
- Frequency of current ferry use
- Trip purposes
- Cross-sound travel patterns and modes
- Vessel and terminal amenities
- Fare levels and payment methods
- Factors that influence trip choice

How was the survey conducted?

In collaboration with KPFF and Kitsap Transit, PRR developed the online survey questions. The final online survey was launched on June 9, 2014 and was available until Jun 25, 2014. The survey was also available by phone through Kitsap Transit customer service.

The online survey was advertised on the Kitsap Transit website, through press releases to local media, online ads in the local newspapers and blogs, posters distributed to ferries and community gathering places, and via rider alert emails to 2,900 Kitsap travelers. It should be noted that this is an *non-random* sampling strategy because respondents choose to respond to the survey advertisements and emails, and were not randomly selected to participate. As a result, the sample is skewed by respondents who ride the Bremerton to Seattle ferry routes.

The survey was completed by 1,257 respondents. Using the approximate daily number of ferry riders as the population of interest, the margin of error is +/- 2.7%. The results are presented in the following report and it should be noted that the totals in some charts add up to somewhat less or somewhat more than 100% due to rounding, and in some cases where respondents were allowed to have multiple responses. Note that significant correlations that are stronger than .10 are also presented (probability <=.05).



Executive summary (continued)

Key findings

- Many respondents (68%-87%) strongly agree with statements about the benefits of passenger-only ferry service, particularly that a 35-minute or less trip is important, and that POF service is important for access to jobs.
- Almost two thirds of respondents (62%) ride the ferries 1 to 5 or more days a week, and *of those*, most of them ride the Bremerton/Seattle route (66%), whereas only a few (9%) ride the Kingston/Edmonds route. These respondents that ride 1 to 5 or more days a week, do so mainly to get to work (83%).
- When looking at the ridership of *all* respondents, just over two-fifths (41%) ride the Bremerton/Seattle route and about half of that (21%) only ride non-Bremerton/Seattle routes (e.g. Southworth, Vashon, and Kingston) 1 to 5 or more days a week.
- For all respondents, and those that ride the ferry 1 to 5 or more days a week for work, overall travel time, flexibility of schedule, and the fare/cost were the most important factors that influenced their transportation choices.
- About half (48%) of the respondents reported they most often walked on the ferry, and just under a quarter (23%) drove a car on the ferry. Respondents were more likely to drive a car on the ferry if they ride non-Bremerton routes more frequently.
- When it comes to amenities on the ferry, comfortable seating (70%) and Wi-Fi (32%) were the most important, whereas clean restrooms (50%) and a feeling of security (36%) were the most important amenities at the terminal.
- Most of the respondents (38%) pay ferry fares with cash, a monthly pass (28%), and employer subsidy (27%). As expected, respondents that ride the ferry less frequently (39% of total sample) were more likely to pay fares with cash and those that ride more frequently were more likely to pay with a monthly pass, ORCA card, or multi-ride ticket.
- Overall most respondents were likely (81%) to ride a Bremerton to Seattle POF, and about half that amount were likely ride the Southworth to Seattle POF.
- Of those that were willing to ride a POF 1 to 5 or more times a week (62%), most of them (76%) will ride the Bremerton/Seattle route. And even though few (9%) were willing to ride a POF 1 to 5 or more times a week on the Kingston to Seattle route, that is in line with the amount of respondents (9%) that are currently riding the Kingston to Edmonds route at the same frequency. This lower willingness to ride the Kingston to Seattle POF is likely because the respondents of the survey were mostly Bremerton to Seattle riders.
- Just over two-thirds (37%) were willing to pay \$1-\$1.99 in additional fare for one-way passenger-only service, and even more (79%) were willing to pay \$1 to over \$3 additional. Respondents willing to pay more than \$3 in additional ferry fares (19%) were more likely to ride non-Bremerton routes 1 to 5 times a week, and have higher incomes.

Respondent demographics

- 87% live in Kitsap County and 9% live in King County
- 77% work full-time, 8% work part-time, and 2% are full or part-time students
- 46% work in King County and 47% work in Kitsap County
- Age:
 - 30% under age 34
 - 46% age 35-54
 - 24% over age 55
- Income:
 - 17% income under \$50k
 - 45% income \$50-100K
 - 38% income over \$100K
- Race/Ethnicity
 - 1.4% Black/African American
 - 87.3% White/Caucasian
 - 1.2% American Indian or Alaska Native
 - 2.3% Asian
 - 1.1% Native Hawaiian or other Pacific Islander
 - 2.0% Hispanic/Latino
 - 4.6% Other

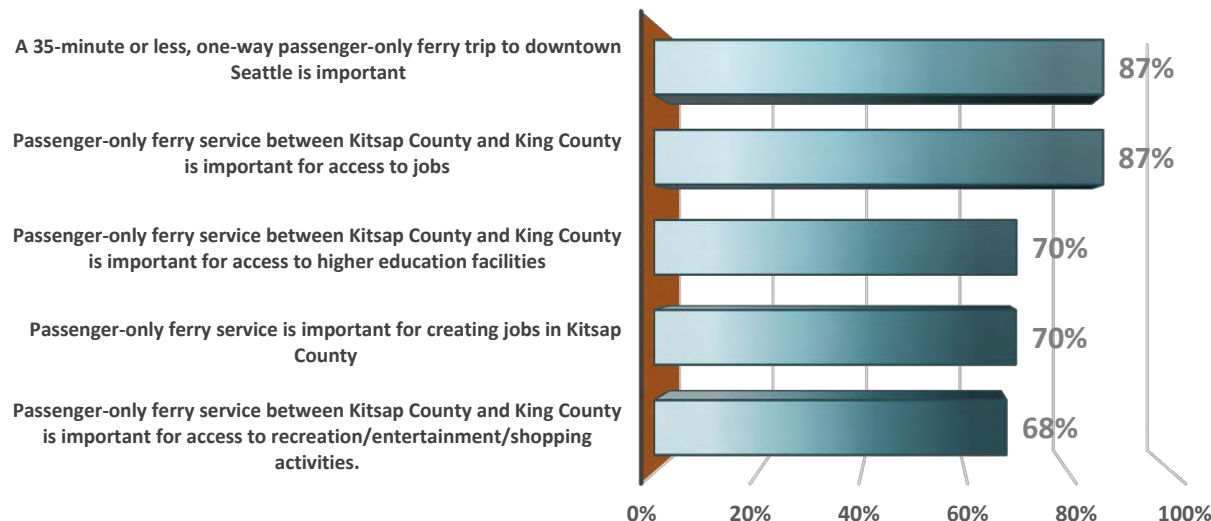
Support for passenger-only ferries

Respondents were asked to rate their agreement on a scale of 1 to 7, (where 1 is strongly disagree and 7 is strongly agree) regarding the benefits of passenger-only ferries.

- Many respondents (68%-87%) *strongly agreed* (rated a “6” or “7”) with statements regarding the benefits of passenger-only ferry service, particularly:
 - 35-minute or less service to Seattle (87%)
 - For access to jobs (87%)

Percent rated "6" or "7" on a scale of 1 to 7, where 7 is strongly agree

BASE: ALL SURVEY RESPONDENTS (N=1246-1253)



Respondents were more likely to strongly agree to these statements if:

- They ride the ferry at least 1 to 5 or more times a week
- If they ride the Bremerton/Seattle route 1 to 5 or more times a week

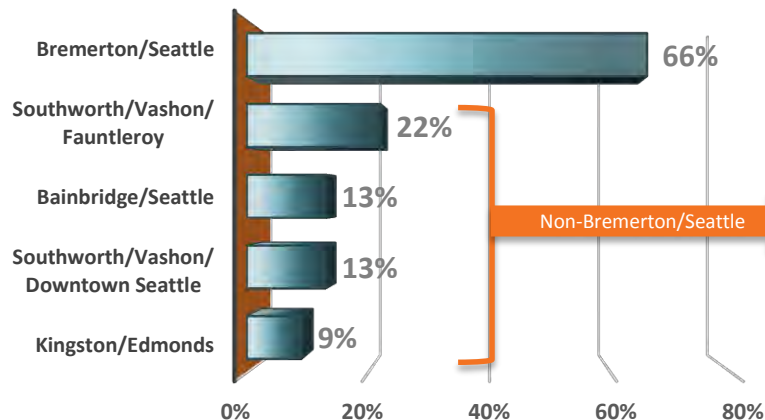
Ferry routes and trip frequency

Respondents were asked to indicate the frequency they currently ride certain ferry routes (using a scale of never to 5 or more times a week).

- Of the respondents that ride the ferry 1 to 5 or more days a week (62%, n=770), most of them ride the Bremerton/Seattle route (66%), whereas only a few (9%) reported they ride the Kingston/Edmonds route.
- When looking at the ridership of all respondents (N=1257), just over two-fifths (41%) ride the Bremerton/Seattle route 1 to 5 or more days a week with about a third of them (35%) **only riding** the Bremerton/Seattle route and 6% riding a combination of the Bremerton/Seattle and other routes.
- About a fifth of respondents (21%) **only ride non-Bremerton/Seattle** routes 1 to 5 or more days a week, and about two-fifths (39%) ride the ferry (any route) **less** than once a week/month.

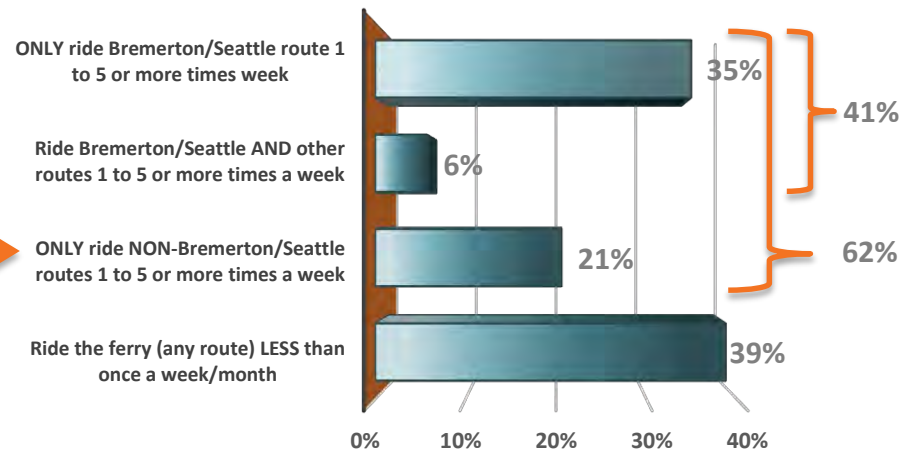
Respondent that ride the ferry 1 to 5 times a week by route (Multiple Response Allowed)

BASE: ONLY RESPONDENTS THAT RIDE 1 TO 5 TIMES A WEEK (N=770)



Overall ferry ridership of ALL respondents

BASE: ALL SURVEY RESPONDENTS (N=1257)



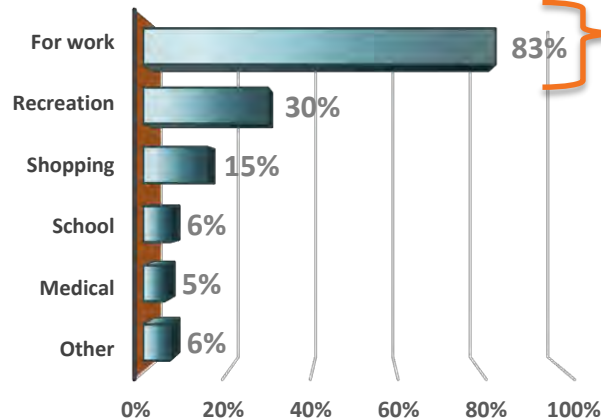
Trip purpose and factors that influence transportation choice

Respondents were asked the top two factors that influence their transportation choices the most, and they were asked how often they ride the ferry for particular purposes.

- Of the respondents that ride the ferry 1 to 5 or more days a week (n=742), most of them (83%) ride the ferry for travel to work, as well as for recreation (30%), and shopping (15%).
- For all respondents travel time (62%), flexibility of schedule (57%), and the fare or cost (45%) were the factors that influenced their transportation choices the most, and these were the same tops factors for respondents who ride the ferry 1 to 5 or more days a week to get to work.

Ride the ferry 1 to 5 or more days a week for the following purposes:

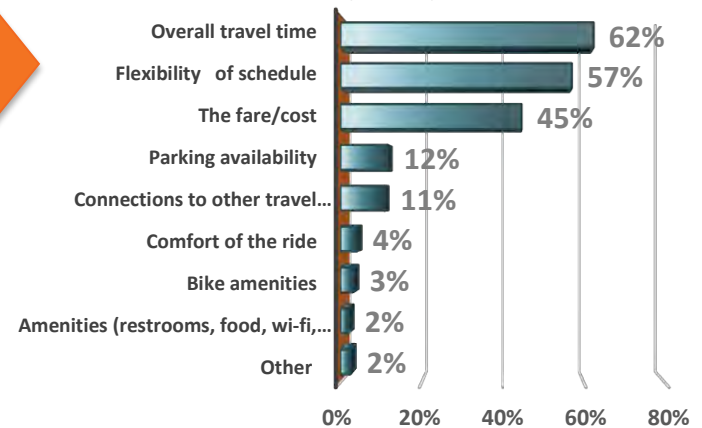
BASE: THOSE RESPONDENTS WHO RIDE 1 TO 5 OR MORE DAYS WEEK (N=742)



Same top factors for those that ride 1 to 5 or more days for work.

What are the top TWO factors that influence your transportation choices? (Multiple responses allowed)

BASE: ALL SURVEY RESPONDENTS (N=1243)



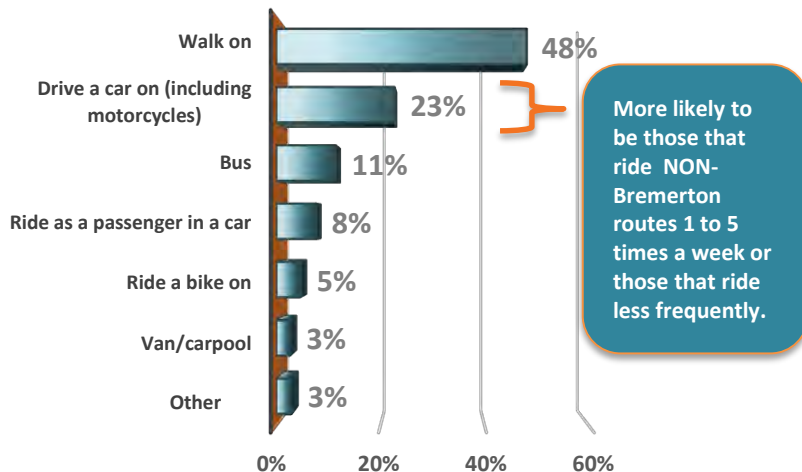
Terminal arrival and fares

Respondents were asked how they arrive at the ferry terminal most often, and they were also asked how they most often pay for their ferry fare.

- About half (48%) of the respondents reported they walked on the ferry, and just under a quarter (23%) drove a car on the ferry.
- Most of the respondents (38%) pay with cash, as well as a monthly pass (28%).
- Just over a quarter (27%) are provided an employer subsidy to pay for fares.

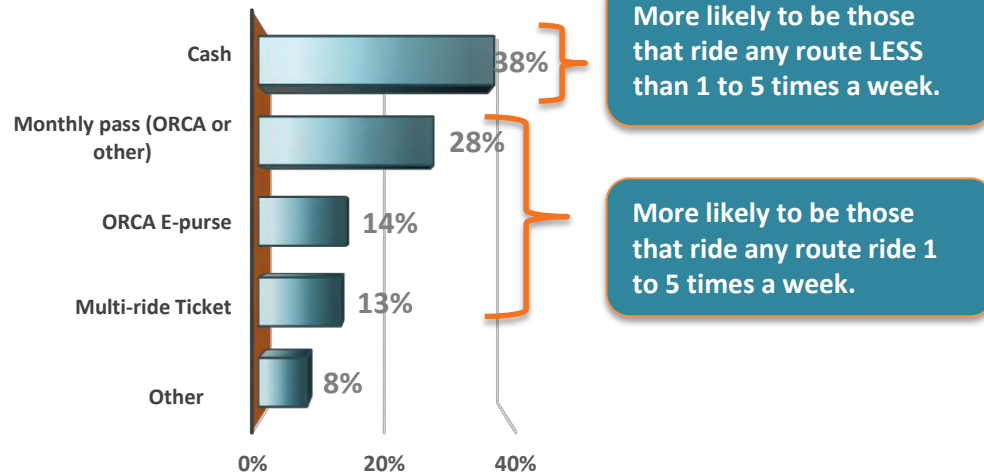
How do you arrive at the ferry terminal most often?

BASE: ALL SURVEY RESPONDENTS (N=1232)



How do you most often pay for your ferry fare?

BASE: ALL SURVEY RESPONDENTS (N=1233)



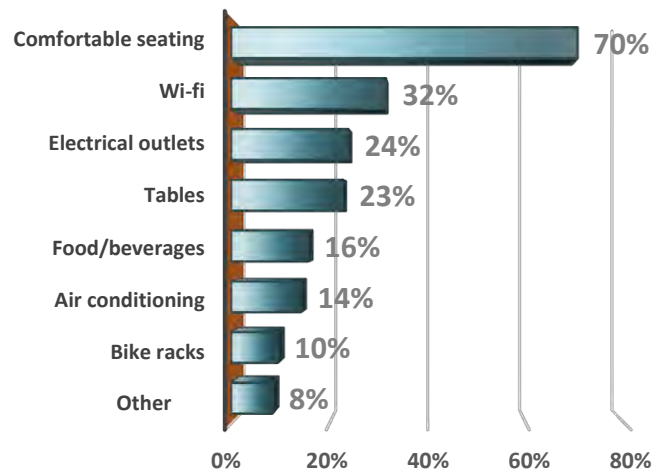
What amenities are important?

Respondents were asked to identify the top two most important amenities when they ride on the ferry and when they are at the ferry terminal.

- For all respondents comfortable seating (70%) and Wi-Fi (32%) were the most important amenities on the ferry.
- Also for all respondents clean restrooms (50%) and a feeling of security (36%) were important at the terminal.

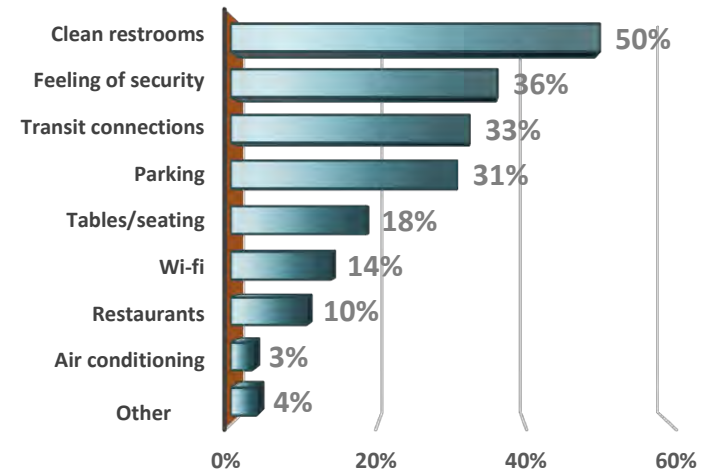
What are the top TWO amenities that are the most important to you when riding on the ferry? (Multiple response allowed)

BASE: ALL SURVEY RESPONDENTS (N=1205)



What the top TWO amenities that are the most important to you at the ferry terminal? (Multiple response allowed)

BASE: ALL SURVEY RESPONDENTS (N=1208)



Likelihood to ride and pay for passenger-only ferry

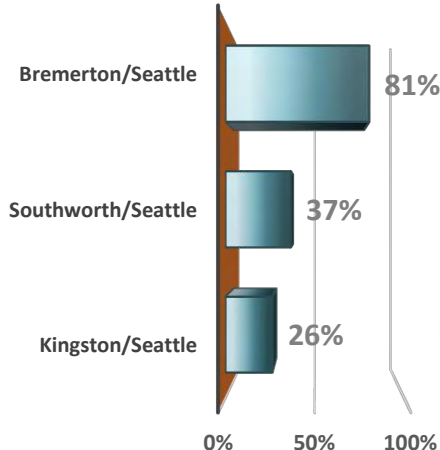
Lastly, respondents were asked to indicate their likelihood to ride a passenger-only ferry if available for specific routes, how often they would ride those routes, and how much in additional fares they would be willing to pay.

- Overall most respondents indicated they were likely (81% *very likely* or *likely*) to at some time ride a Bremerton to Seattle passenger-only route.
- Of those willing to ride a POF 1 to 5 or more times a week (62%, n=784), most of them (76%) will ride the Bremerton/Seattle POF route.
- Just over two-thirds (37%) were willing to pay \$1-\$1.99 in additional fare for one-way passenger-only service, and even more (79%) were willing to pay \$1 to over \$3 additional.

Likelihood to Ride POF

Very Likely and Likely

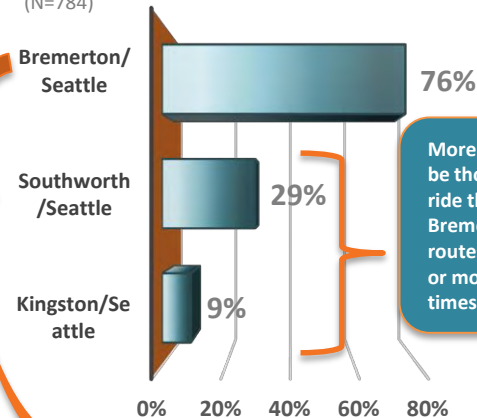
BASE: ALL SURVEY RESPONDENTS (N=1209)



Ride POF 1-5 or more times a week

Would ride POF 1 to 5 or more times a week (Multiple Response)

BASE: RESPONDENTS WILLING TO RIDE 1 TO 5 TIMES (N=784)

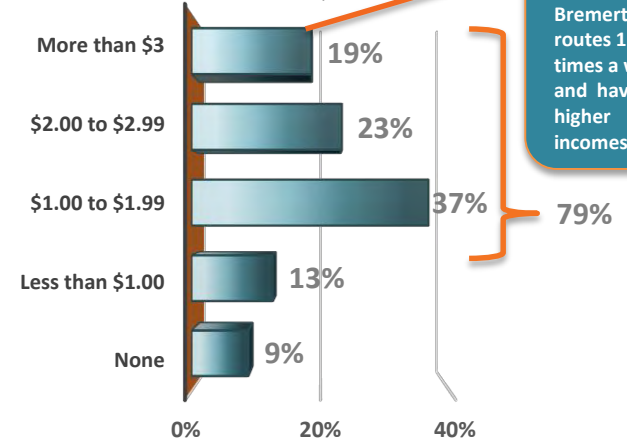


More likely to be those that ride the NON-Bremerton routes 1 to 5 or more times a week.

Additional Fares would PAY for POF

ADDITIONAL fare for ONE-WAY trip

BASE: ALL SURVEY RESPONDENTS (N=1167)



More likely to be those that ride NON-Bremerton routes 1 to 5 times a week, and have higher incomes.

- More likely to be those that ride Bremerton routes 1 to 5 or more times a week, younger, walk on the ferry, have a subsidy, and use a monthly pass.
- More likely to have higher incomes, a subsidy, drive a car on the ferry, and use a monthly pass.





August-September Survey

Kitsap Transit is developing a proposed business plan and long-range strategy for passenger-only ferry service between Kitsap County and downtown Seattle. Environmentally sensitive, high speed passenger ferry service could cut commute times in half, improving the quality of life for many Kitsap residents and supporting a strong economic base in Kitsap County.

We want to better understand community priorities and interest in passenger-only ferry service. This feedback will help guide the business plan, including recommendations for routes, service priorities, and fare programs.

Please complete this quick online survey by September 8, 2014. Your answers are completely confidential and are important to help plan for future passenger-only service.

Thank you!

1. Please rate how strongly you agree or disagree with the following statement on a scale of 1 to 7 (where 1=strongly disagree and 7=strongly agree):

Amount of agreement/disagreement

An approximately 35-minute or less, one-way passenger-only ferry trip to downtown Seattle is important

2. How frequently would you ride the following ferry routes if they were passenger-only service?

Frequency

Bremerton/Seattle

Southworth/Seattle

Kingston/Seattle

3. Do you currently ride a ferry route between Kitsap County and Seattle at least once a month?

No

Yes

4. How frequently do you ride the following ferry routes

Frequency

Bremerton/Seattle	<input type="text"/>
Bainbridge/Seattle	<input type="text"/>
Kingston/Edmonds	<input type="text"/>
Southworth/Vashon/Fauntleroy	<input type="text"/>
Southworth/Vashon/Downtown Seattle	<input type="text"/>

5. How do you MOST often get to the ferry terminal for your originating and return trips (check all that apply)?

	Originating Trip	Return Trip
Kitsap Transit Bus	<input type="checkbox"/>	<input type="checkbox"/>
King County Metro Bus	<input type="checkbox"/>	<input type="checkbox"/>
Washington State Ferries	<input type="checkbox"/>	<input type="checkbox"/>
Souder Train	<input type="checkbox"/>	<input type="checkbox"/>
Personal Vehicle	<input type="checkbox"/>	<input type="checkbox"/>
Bike/motorcycle	<input type="checkbox"/>	<input type="checkbox"/>
Walk	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>

6. Which type of ferry ticket do you use MOST frequently?

7. Is this fare provided with a subsidy from your employer or school?

8. In previous surveys the majority of respondents indicated they would pay up to \$3 each way in addition to their current fare, for faster, passenger-only ferry service. Please identify below how much you would be willing to pay ROUND-TRIP for each passenger-only service route.

	Bremerton/Seattle	Kingston/Seattle	Southworth/Seattle
Amount willing to pay	<input type="text"/>	<input type="text"/>	<input type="text"/>

9. Fares won't pay for everything. How much do you agree with using the following tax options as a reasonable way to provide some local tax support for passenger-only ferries to connect Kitsap County with downtown Seattle. Please use a scale of 1-7 (where 1=strongly disagree and 7=strongly agree).

Amount of agreement/disagreement

A Parking Tax	<input type="text"/>
A Sales Tax	<input type="text"/>
Motor Vehicle Excise Tax (MVET)	<input type="text"/>

10. The current sales tax in Kitsap County is 8.7%, or 87 cents on a \$10 purchase. If an increase in the sales tax was the only option, how much of a sales tax increase do you think is reasonable to pay for passenger-only ferry service that provides an approximately 30 minute or less trip to downtown Seattle?

11. What time do you prefer the ferry to arrive at the terminal near your work in the MORNING?

12. What is the ideal time time for the ferry to depart the terminal near your work in the EVENING?

13. The initial passenger ferry service schedule will likely be Monday through Friday during the morning and evening commute period. Please rank your preference for the following service expansion options. Check '1' for your most preferred option, '2' for your next most preferred option, and so on until all four options are ranked.

	1	2	3	4
Weekday Midday	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekday Evenings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekend Days	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Weekend Evenings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

The last questions are demographic questions, which are important for validating that the survey responses are representative of those that ride ferries in the Puget Sound. Again, your responses remain anonymous.

14. What is your home zip code?

15. What is the zip code where you work?

16. What County do you live in?

17. What is your age?

18. Which of the following best describes your household income, before taxes, for 2013?



August-September Survey Results



PASSENGER-ONLY FERRY SERVICE ONLINE SURVEY (AUGUST 2014) EXECUTIVE SUMMARY

PRR, Inc.

October 2014



Executive summary

What was the purpose of the survey?

In April 2014, Kitsap Transit began developing a business plan and long-range strategy that will provide a comprehensive blueprint for implementing passenger ferry service. As part of this business plan, a public involvement strategy was implemented to gauge public support for POF service and gather input on project alternatives. This strategy included stakeholder interviews, tabling events, press releases, online ads, a fact sheet, and two online surveys. The purpose of the first online survey was to understand:

- Interest in POF service
- Frequency of current ferry use
- Trip purposes
- Cross-sound travel patterns and modes
- Vessel and terminal amenities
- Fare levels and payment methods
- Factors that influence trip choice

The purpose of this second online survey was designed to specifically understand willingness to pay fares, willingness to fund POV in addition to fares, and overall service preferences.

How was the survey conducted?

In collaboration with KPFF and Kitsap Transit, PRR developed the online survey questions for both surveys. The second survey launched on August 27, 2014 and was available until September 8, 2014. The surveys were also available by phone through Kitsap Transit customer service.

The first online survey was advertised on the Kitsap Transit website, through press releases to local media, online ads in the local newspapers and blogs, posters distributed to ferries and community gathering places, and via rider alert emails to 2,900 Kitsap travelers. The second survey was advertised similarly, except that it expanded the rider alerts emails to more Kitsap County travelers. It should be noted that this is an *non-random* sampling strategy because respondents choose to respond to the survey advertisements and emails, and were not randomly selected to participate.

The second online survey was completed by 947 respondents. The results are presented in the following report and it should be noted that the totals in some charts add up to somewhat less or somewhat more than 100% due to rounding, and in some cases where respondents were allowed to have multiple responses.



Key Findings

- Overall there was not a lot of *strong support* (18-30%) for subsidy tax options (sales, parking, or MVET tax), but of those that gave a subsidy option support, MVET was the most popular.
- In contrast, more than half (58%) are willing to pay a 0.2 to 0.4 of a percent increase in sales tax to pay for POF.
- Schedule/arrival and departure times revolve around morning and evening commutes.
- Most respondents prefer a service expansion to *weekday evenings*.
- Overall respondents are more willing to pay fares between \$11-13 rather than \$14-15, but most would prefer to pay \$8-\$10.

Respondent Demographics Survey #2

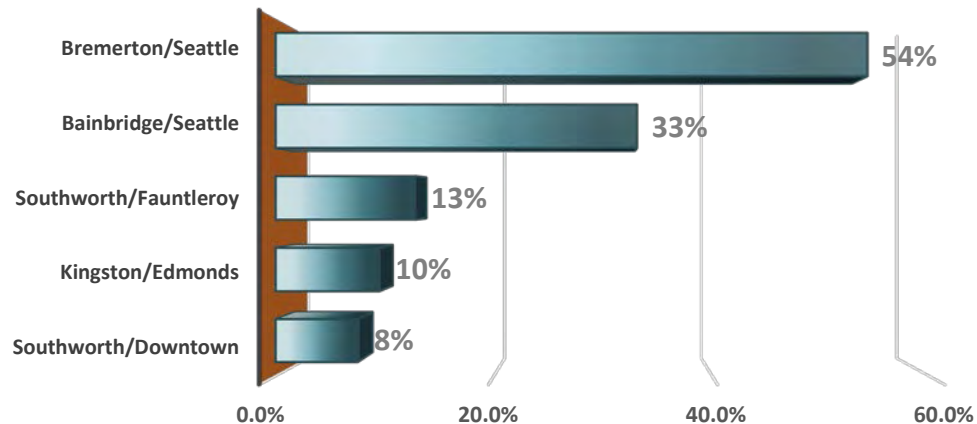
- 91% live in Kitsap County
- Age:
 - 15% under age 34
 - 47% age 35-54
 - 38% over age 55
- Income:
 - 16% income under \$50k
 - 45% income \$50-100K
 - 40% income over \$100K
- 74 Home zip codes reported, with most at:
 - 9% at 98110
 - 12% at 98310
 - 7% at 98311
 - 10% at 98312
 - 10% at 98366
 - 8% at 98370
- 100 Work zip codes reported, with most at:
 - 13% at 98101
 - 11% at 98104
 - 5% at 98337
 - 4% at 98310

Ferry routes and trip frequency

- Of the respondents that ride the ferry 1 to 5 or more days a week (n=610), most of them ride the Bremerton/Seattle route (54%), whereas only a few (8-10%) reported they ride the Kingston/Edmonds and Southworth/Downtown route.
- Most of the respondents (86%) ride the ferry between Kitsap County and Seattle at least once a month.

Respondent that ride the ferry 1 to 5 times a week by route (Multiple Response Allowed)

BASE: ONLY RESPONDENTS THAT RIDE 1 TO 5 TIMES A WEEK (N=610)

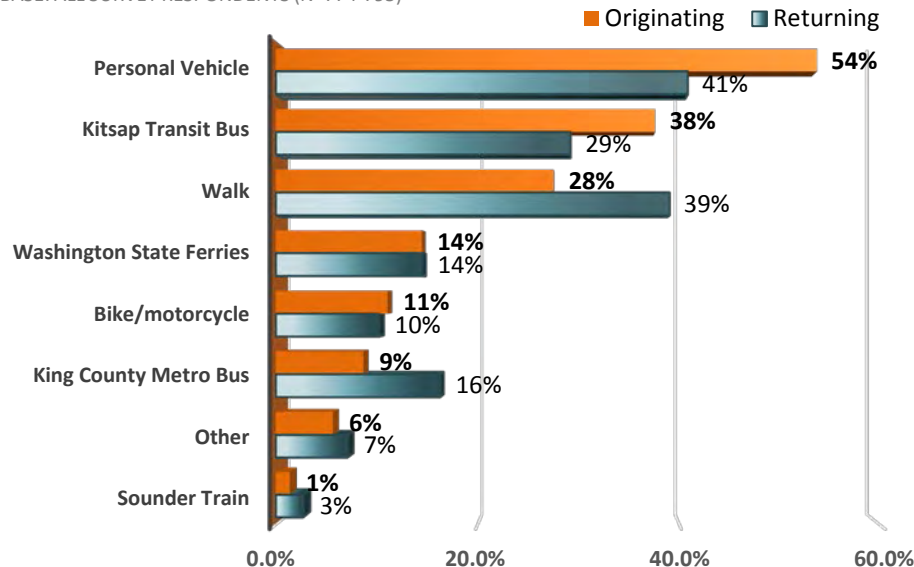


Getting to terminals and paying for fares

- Most of the respondents take a personal vehicle to arrive and depart from the ferry terminal (54% arrive, 41% depart).
- Most of the respondents (44%) pay single fares (cash or ORCA E-Purse), as well as a monthly pass (38%).
- Just over a quarter (32%) are provided an employer subsidy to pay for fares.

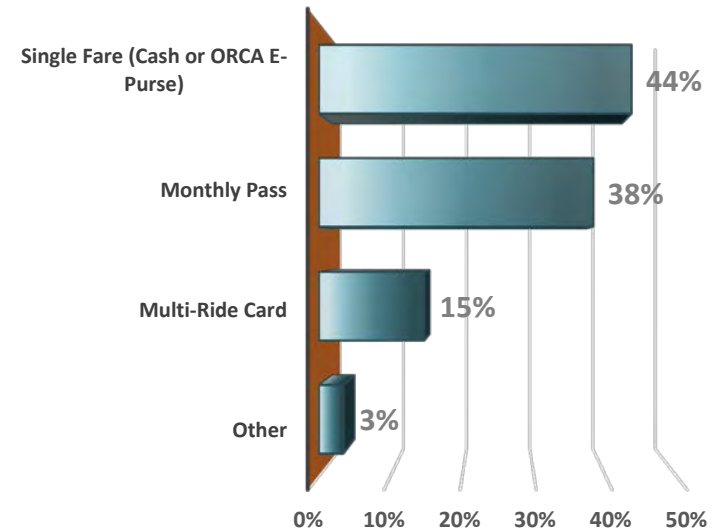
How do you MOST often get to the ferry terminal for your originating and return trips (check all that apply)?

BASE: ALL SURVEY RESPONDENTS (N=774-795)



Which type of ferry ticket do you use MOST frequently?

BASE: ALL SURVEY RESPONDENTS (N=947)



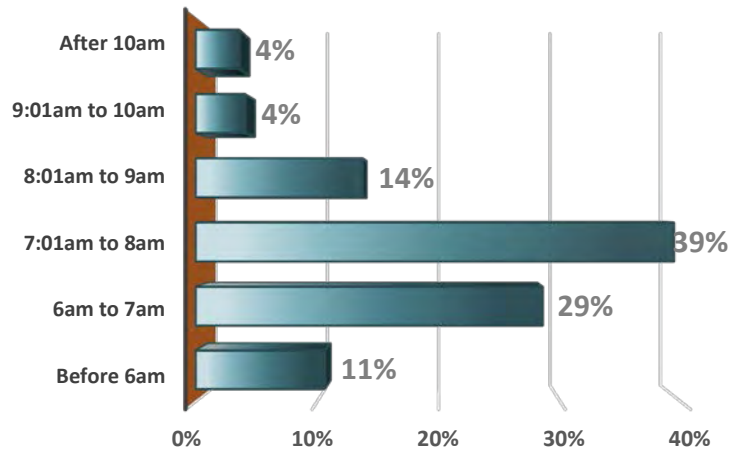
Arriving and Departing

- Most respondents prefer to *arrive* at the terminal between 7am and 8am (39%), and most prefer to *depart* the terminal between 5pm and 6pm (39%).
- Most respondents prefer a service expansion to *weekday evenings*

Preferred Arrival Times

What time do you prefer the ferry to arrive at the terminal near your work in the MORNING?

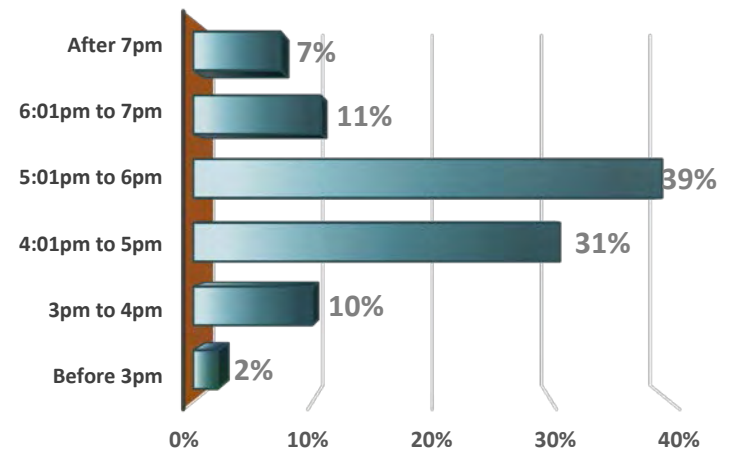
BASE: ALL SURVEY RESPONDENTS (N=837)



Preferred Departure Times

What is the ideal time for the ferry to depart the terminal near your work in the EVENING?

BASE: ALL SURVEY RESPONDENTS (N=834)

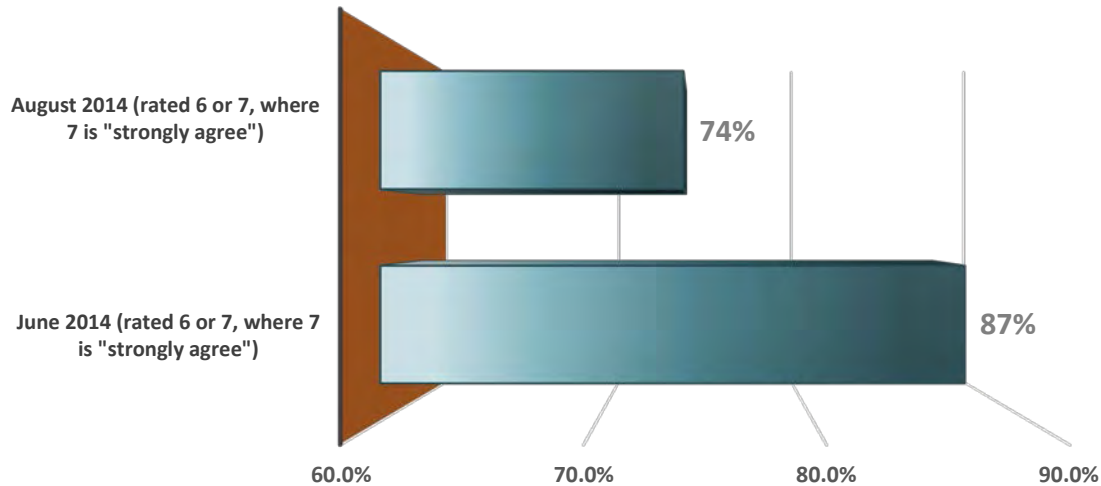


Support for Passenger-only Ferries

- Many respondents (74%) continue to *strongly agree* (rated a “6” or “7”) with the statement that a 35-minute or less, one-way passenger-only ferry trip to Seattle is important, however this is a 13% decline in agreement from the June survey.

Agreement: An approximately 35-minute or less, one-way passenger-only ferry trip to downtown Seattle is important

BASE: ALL SURVEY RESPONDENTS (N=946)



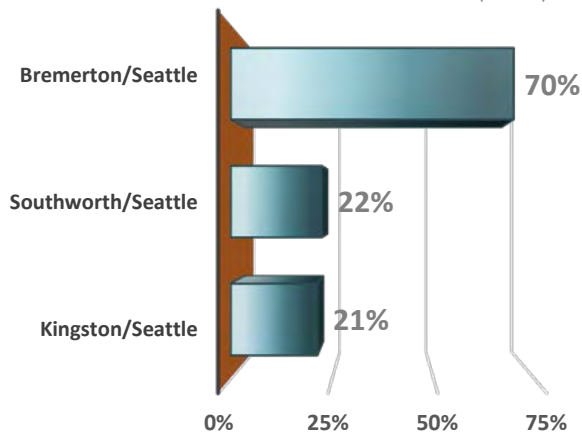
Likelihood to ride and pay for passenger-only ferry

- Of those willing to ride a POF 1 to 5 or more times a week (n=544), most of them (70%) will ride the Bremerton/Seattle POF route.
- Respondents riding the Bremerton/Seattle route indicate the highest willingness to pay between \$11-15 for POF fares (22%).
- Overall respondents are more willing to pay fares between \$11-13 rather than \$14-15, however most would prefer to pay between \$8 to \$10.

Likely to Ride POF 1-5 or more times a week

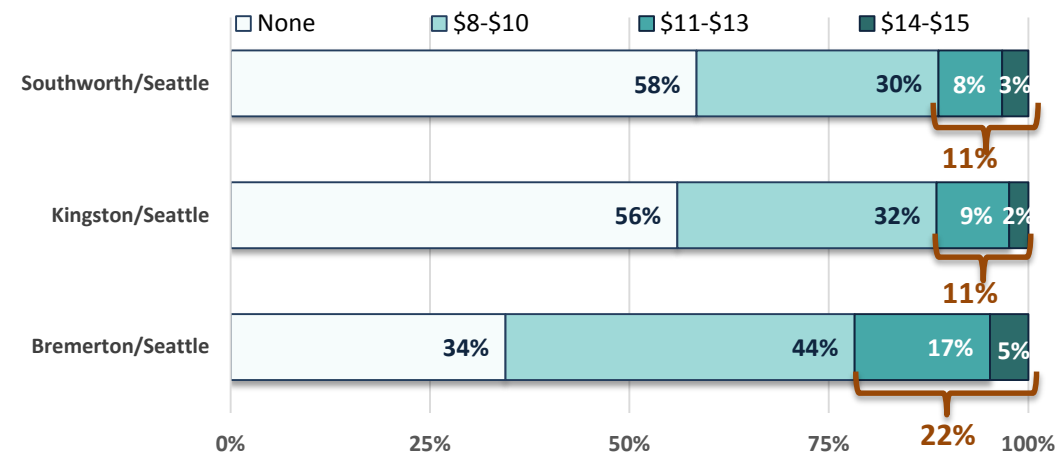
Would ride POF 1 to 5 or more times a week
(Multiple Response)

BASE: RESPONDENTS WILLING TO RIDE 1 TO 5 TIMES (N=544)



Additional Fares would PAY for POF

How much you would be willing to pay ROUND-TRIP for each passage?



- Younger respondents (under age 44) are more likely to pay the increase in fares, whereas as older respondents (over age 45) are more likely to NOT pay this increase in fares for POF service.
- Those that ride the ferry more frequently (1 to 5 times a week) are more willing to pay higher POF fares, particularly for the route they use most often.



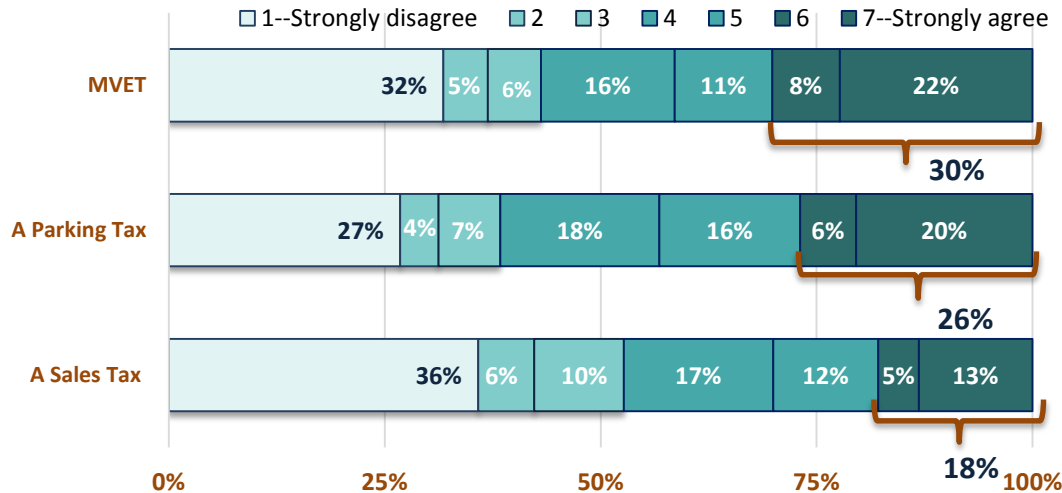
Support for options to pay for passenger-only ferry

- Overall most respondents are more likely to support a motor vehicle excise tax (MVET) as a way to pay for POF service (30% rated 6 or 7, where 7 is “strongly agree”).
- More than half the respondents (58%) are willing to pay a 0.2 to 0.4 of a percent increase in sales tax as a reasonable way to pay for POF to and from Seattle.

Support for Tax Options to pay for POF

Agreement these tax options are a reasonable way to provide some local tax support for POF to Seattle

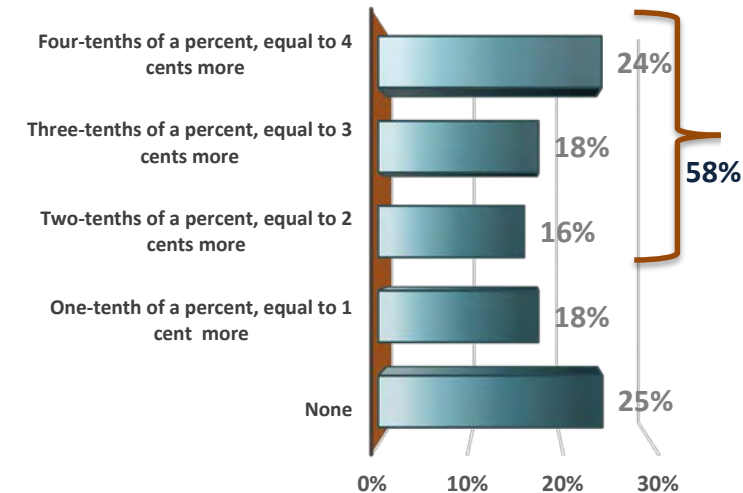
BASE: ALL SURVEY RESPONDENTS (N=896)



Additional Sales Tax Pay for POF

How much of sales tax increase is reasonable for POF to Seattle?

BASE: ALL SURVEY RESPONDENTS (N=896)



- Those with higher incomes (\$150k and more) are more likely to support all three tax options and are willing to pay a higher rate of sales tax for POF service.
- Younger respondents (under age 44) are more likely to support a parking tax and are willing to pay a higher rate of sales tax for POF service.
- Those that ride the Bremerton ferry frequently (1 to 5 times a week) are more likely to support and pay more a higher sales tax rate for POF service, whereas those that ride the Bainbridge ferry more frequently are less likely to support a sales tax.



Appendix I

Economic Impacts of Proposed Service

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Economic Impacts of
Proposed POF Services
for Kitsap Transit

Draft Report
September 2014

KPFF Consulting Engineers

Our ref: 22691101
Client ref: 114144





Economic Impacts of
Proposed POF Services
for Kitsap Transit

Draft Report
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Client ref: 114144

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Appendices

Appendix: Hedonic Methods

1 Introduction

Expanding a public transportation system can be expected to affect travel behavior and influence businesses that place importance on accessibility. The resultant ridership will reflect the fact that the service has increased accessibility over the existing base of transportation. These direct user benefits are not the only impacts, and we could expect that the accessibility benefits provided by a new or even an expanded transit service could have more far-reaching indirect impacts.

One effect that has been studied extensively is the impact of transit accessibility as reflected in higher real estate values near stations or major stops. For residential real estate, the simple fact that households living near transit stations can often enjoy faster and more convenient travel is a real benefit that has been found to increase home prices.

Another effect of transit accessibility is on productivity. Improving accessibility provides workers with a greater choice of potential employers, and employers can draw on a wider pool of potential workers. This can be expected to lead better meet the needs of both parties, and also allows for other labor market benefits such as increased worker specialization as well as various productivity benefits from agglomeration, the co-location of similar businesses.

These two major benefits can be described as real estate benefits and wider economic benefits, respectively. A third, and somewhat distinct, benefit of transit expansion is the potential for increased system redundancy. This can be a considerable benefit of increased service in emergencies, for example: New York City's ferry system has, in the last 14 years, played a crucial role during the attacks of September 11, 2001, as well as following the devastation of Hurricane Sandy.

In the current report we assess the potential economic impacts of three proposed passenger-only ferry (POF) services between Kitsap County and Seattle:

- **Bremerton to Seattle:** A proposed service will utilize a high speed vessel that produces little wake, enabling it to operate at high speeds without harming the coastline and complete the crossing in less than half the sailing time of current ferry service
- **Kingston to Seattle:** A proposed route to downtown Seattle will have a crossing time of 33 minutes
- **Southworth to Seattle:** A proposed route to downtown Seattle will have a crossing time of 23 minutes

What could be the economic benefits of these proposed POFs? As a first step in answering this question the current Report summarizes various findings from the fields of regional economics and transportation planning.

2 Literature Review

2.1 Real Estate Benefits

In addition to traditional user benefits such as travel time savings, public transportation can also bring real estate benefits to the communities it provides access to. As these benefits are localized in nature, they are predictably capitalized into real estate values. A number of studies have consistently shown evidence of this capitalization effect with respect to residential and commercial real estate values. While there is extensive research on the impact of the most prevalent modes of public transportation, such as fixed rail, on real estate outcomes, there are very few studies that have examined the impact of ferry services. A recent study by Steer Davies Gleave and Econsult Corporation (2013) estimated the real estate impact of the East River Ferry service in New York City. The study found:

- Residential property values within 1/8 mile of the closest ferry stop increased by 8.0%
- For all residential properties within one mile of a ferry stop, the ferry service increased total property values by \$0.5 billion
- Higher real estate values also coincided with an increase in new residential and commercial building space of over 600,000 square feet, a 4.9% increase of space within 1/4 mile. This includes:
 - An increase in the nearby supply of residential housing by 487,238 square feet, or over 7%; and
 - An increase in the supply of retail space within 1/4 mile by over 20,000 square feet, or 4.2%.

This recent work is apparently the only empirical analysis of real estate benefits attributable to passenger ferry service, and is therefore of particular relevance to the proposed POF services in Kitsap County. A considerable number of other studies exist, with the focus being other transit modes. These studies focusing on other public transportation modes can also provide guidance on the general approach and magnitude of impacts associated with ferries, due to commonalities across public transportation impact studies.

2.2 Case Studies Using Hedonic Methods

A large number of studies have used hedonic modeling to estimate the impacts of public transportation on real estate (see the Appendix). Hedonic models relate the price paid for a good (such as housing) to its explicit listing of characteristics. For real estate this would mean that a property's characteristics would be accounted for in explaining its price (location, square footage, number of rooms, etc.) The characteristics then explain the value of property as a whole, and this modeling approach enables the user to separate out the effects of housing characteristics from the impact of location. Voith (1991) studied the 678 census tracts in five counties in Pennsylvania and New Jersey with radial rail service to the CBD of Philadelphia in 1980. The study showed through hedonic analysis that suburban areas with good commuter rail access to the CBD have significantly greater fractions of their labor force working in the CBD, owning fewer cars and having higher house prices than similar neighborhoods and housing in census tracts without transit services. Specifically, the study found a house-value premium of over 6.4% (\$5,594, out of the 1980 median house value of \$87,455), implying the increase in suburban housing value associated with transit service was about \$1.45 billion. Voith (1993) then conducted another hedonic analysis and estimated house-price premiums associated with CBD accessibility in the case of

Montgomery County near the city of Philadelphia. He found premiums of 8.1% on the average housing sales price. A more recent study by Voith (2014) showed the single family property value premium for being close to a Region Rail station in Southeastern Pennsylvania rose up to 10% and with an aggregated value of \$6.0 billion.

Lewis-Workman and Brod (1997) analyzed and compared the transit impact within one mile from selected station areas in three transit systems around the U.S.: BART in the San Francisco Bay Area, MTA in New York City, and MAX light rail in Portland. In general, they concluded that transit access increased assessed property values as long as properties are within one mile but more than 2,000 feet from the major roadway and transit line. In particular, they observed that property values increase by approximately \$15.78 and \$23 for every foot closer to the transit stations in San Francisco and New York respectively. In Portland, the property values increase dropped to \$0.76 for every foot closer to light rail within the range of 2,500 to 5,280 feet to transit station. The premium for an average single family home was over \$23,000 (9%) in San Francisco and \$37,000 (13%) in New York, but is much lower in Portland. This is likely the result of lower performance service in Portland and the lower property values in the Portland region compared with San Francisco and New York City. This interpretation could be validated by a study in Buffalo, New York that the estimated property value increase in every foot closer to a light rail station was \$0.99 (Hess and Almeida, 2007). Therefore, a general conclusion is the price premium may well be much higher in a metro area with a strong housing market and a reliable transit system that effectively connects residents with jobs and other destinations.

In a detailed study of light, heavy, and commuter rail transit, and bus rapid transit (BRT) in Los Angeles County, Cervero and Duncan (2002a) separately analyzed the impact of those transit systems on single-family housing, multi-family housing, condominiums, and commercial property in 2000. They found that single family homes within a half-mile radius of the Blue Line, a light rail line run by Los Angeles Metro, commanded a 3.4% premium. Somewhat inconsistent results were found for another light rail line in Los Angeles, the Green Line, where the authors found a 1.8% reduction in real estate values for properties accessible to the service. Similar inconsistent impacts were also found for multi-family housing and condominiums. According to this study, the greatest discount occurred around the BRT lines, which authors theorized as due to other factors associated with BRT stops, such as being near a freeway.

Cervero and Duncan (2002b) replicated the L.A. study in San Diego County and found that residential properties within a 0.5 mile radius of the LRT stations commanded positive price premiums. Specifically, multi-family homes and condominiums near the LRT East Line commanded a 17.3% premium (equivalent to a value-added of \$104,827) and a 6.4% premium (equivalent to a value-added of \$11,917), respectively. However, the San Diego LRT was found to have very little positive impact on single-family homes, with only the South Line associated with a price premium of 0.6%.

Real estate premiums associated with commuter rail were significant, however: Single-family homes within a half mile of a non-downtown commuter rail station exhibited a price premium of around 17% compared to similar properties that were not accessible to the service, and condominiums within proximity to commuter rail stations were associated with an even higher, 46% premium.

Interestingly, price impacts did not apply to multi-family housing, as distinct from single-family or condominium-type dwellings. According to these findings, the impact from transit on housing value may vary based on both the types of transit (e.g., LRT and commuter rails) and the types of housing (single-

family housing, multi-family housing or condominiums, all distinct categories in the Cervero and Duncan analysis).

Cervero and Duncan (2002c) conducted another study to analyze the effect of LRT proximity to residential (including rental properties and condominiums) sale prices in Santa Clara County. Parcels within a 0.25-mile of the stations commanded a \$9 per square foot premium, which translated to a 45% premium on average.

Similar property value premiums were observed in London as well. Gibbons and Machin analyzed properties within a 3 km radius of the the Jubilee Line Extension and Docklands Light Railway during a study period from 1997 to 2001. Here housing price increased by 9.3% within 2 km of the train stations and a 1 km reduction in distance in the study area was associated with price premia of 1.5% to 8.9% on average (Gibbons and Machin, 2004).

Focusing on nonresidential values, Weinberger (2001) studied the relationship between commercial office rental and sales prices and proximity to LRT in Santa Clara County, CA. Using lease transaction data from 1984 to 2000, she showed that the highest premium for properties took place within 0.25 miles of the LRT stations. Beyond the 0.5-mile boundary (which is roughly an upper limit on a comfortable walking distance), she found no statistical relationship between the distance from transit stations and the prices associated with those properties.

Cervero and Duncan (2002d) conducted a similar study in Santa Clara and found that within a 0.25 mile radius of LRT station, commercial properties commanded an average price premium of about 23% and more than 120% for commercial land in business districts within a 0.25-mile of a commuter rail station. In Los Angeles, the premiums for commercial properties were 91% for parcels near downtown commuter rail stations and 72% for parcels near LRT stations (Cervero and Duncan, 2002a).

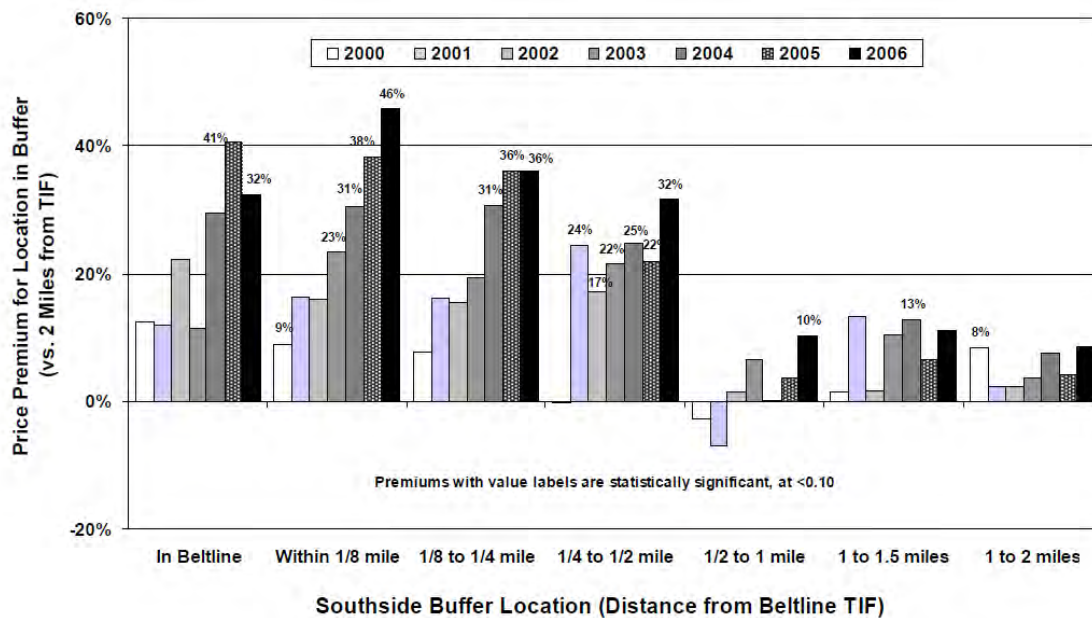
2.3 Case Studies Comparing “Before and After”

In addition to hedonic price models, there is another method to assess real estate price changes after public transportation service was added or expanded. This “before and after” methodology requires data over a long period of time but can be very informative for areas considering transit service expansion. Some before-and-after studies and their findings are summarized below.

Atlanta’s Beltline project involves the redevelopment of a 22-mile freight rail line into a light rail system encircling the city, linking a system of planned mixed-use projects and green spaces. Immergluck (2009) found that:

- Between 2002 and 2005, as project plans began to take shape and media attention increased, single-family homes within one-quarter mile of the planned loop sold at a 15% to 30% premium compared to similar properties located more than two miles away.
- The impact fell sharply after approximately a quarter mile.
- Price premiums extended one-half mile from the project before falling off.
- The impacts of the Beltline on nearby property values occurred primarily in lower-value and lower-income buffer areas, which are located primarily on the city’s Southside.

Figure 1: Southside price premium for being located near the Beltline, compared to being more than 2 miles, 2000-2006



Source: Immergluck, 2009

Goetz et. al. (2010) analyzed home sale price before and after the completion of the \$715 million Hiawatha Light Rail Line running between downtown Minneapolis and the Mall of America in Bloomington in 2004, finding that:

- Locations closer to the LRT stations are associated with higher property values, an effect that extends beyond a half-mile
- Significant value gradients extended outward from the stations, roughly \$115 per foot
- Development of the Hiawatha Light Rail Line has produced an average 4% (\$5,229) price premium per single family home and 10% (\$15,755) per multifamily property in the station areas
- The aggregate increase in property value for single family and multifamily properties that have sold between 2004 and 2007 were \$18.3 million and \$6.9 million respectively
- Applied to all homes in the station areas, the Hiawatha Line has produced an aggregate premium of \$47.1 million
- The property-value premiums were not observed on the east side of the Hiawatha Line due to a four-lane highway on the east side of the Hiawatha Line and a strip of industrial land use immediately adjacent to the highway on the east, which created a barrier between the residential properties on the east and the Hiawatha Line
- There is also a negative, nuisance effect (of a smaller magnitude) for properties that are very close to the LRT tracks
- 67 residential properties were constructed within 300 feet of the light rail tracks after funding for the Hiawatha project was announced in 1997
- Building permit along the neighborhood corridor accounted for 6% of aggregate residential value at the quarter mile scale, suggesting that station areas saw larger-scale building activity than the comparison area for the 2000-2007 period

As can be seen from previous research results, although it is widely agreed that proximity to public transportation does lead to higher home values in most cases, researchers found varying magnitudes of the impacts. A summary of the literature on public transportation impacts from Fogarty et. al. (2008) reports a range of impacts for single-family homes from 2% to 32%, and 2% to 18% for condominiums. Cervero et. Al. (2004) came with a range of average housing value premium from 6% to 45% across the U.S.¹ In addition, the meta-analysis of Debrezion et. al (2007) showed that the effects varied by type of railway station. Table 1 shows the average estimated impact from the sampled studies on real estate prices within a quarter mile of each station. The impacts range from a low of 1.7% for bus rapid transit (BRT) to a high of 18.7% for commuter rail transit (CRT).

Table 1: Average Price Impact of Transit Stations by Type

Station type	Average Impact
Light Rail Transit	7.1%
Heavy Rail Transit	2.1%
Commuter Rail Transit	18.7%
Bus Rapid Transit	1.7%

Source: Debrezion et al, 2007

2.4 Conclusions: Real Estate Benefits

In general, several conclusions can be drawn from the literature:

- The property value impacts of public transportation typically range from the single digit percentages to the mid-teens
- The most significant housing price premium takes place within 0.25 to 0.5-miles of a station
- The impact of transit on housing often falls off after half a mile from stations
- A discount might happen to properties that are too close to the station due to negative externalities from the station (noise, pollution, traffic etc.)
- The price premium may be much higher than average in a metro area with a strong housing market and a reliable transit system that effectively connects residents with jobs and other destinations
- The price premium or discount varies by type of transit, especially for those that might have other factors associated with them (e.g., alignment of rail/bus line might be very close to freeway)
- The most common empirical approach taken in the literature is the use of hedonic regression that measures the log of property sale prices as a function of building and neighborhood characteristics and a measure of transit access

It is of interest to note that a relationship has been observed in a number of real estate benefit studies and the actual user benefits (in particular travel time savings) that the transit services provide. In particular, relating the potential travel time savings per household to the housing premium generates the following formula:

¹ Studies over the past two decades show average housing value premiums associated with being near a station (usually expressed as being within 1/4 to 1/2 mile of a station) are 6.4% in Philadelphia, 6.7% in Boston, 10.6% in Portland, 17% in San Diego, 20% in Chicago, 24% in Dallas, and 45% in Santa Clara County.

$$\text{Real Estate Premium} = \frac{\text{Annual Travel Time Savings}}{\text{Discount Rate}}$$

The discount rate in empirical studies has been found to be in the range of 9% to 15% (Appelseed and Louis Berger Group (2005)). This suggests that knowledge of the potential travel time savings for a proposed transit service could be the basis for a “back of the envelope” estimate of real estate price increases within proximity to a station.

2.5 Wider Economic Benefits

Wider economic benefits (WEBs) refer to productivity effects of accessibility improvements. It is widely accepted that transit investments can bring about improved productivity as a result of easier interactions between firms, higher-density employment clusters, and more accessible labor forces. Such clustering activity may provide increased efficiency through reduced labor cost, improved communication, lower infrastructure costs, and increased interaction with similar businesses. Clustering provides an opportunity for more face-to-face contact and access to specialized labor, which result in higher productivity and economic growth. This effect is known as agglomeration. Until recently there was limited empirical research on the level of linkage and statistical relationships between accessibility and the resulting productivity improvements. There has been a growing body of research that has produced guidance material from the National Academy of Sciences as well as the UK Department for Transport (DfT) on how to evaluate and estimate WEBs.

The methods used to assess public transportation impacts on agglomeration economies concentrate on statistical analysis, using regression techniques. These techniques relate measures of the effective labor or customer market size to measures of business concentration, output level or productivity measures. The effective market size is often measured as the population living within a given travel time (e.g., 45 minutes) of a given business center location.

A variety of studies in the United Kingdom have determined measures of the agglomeration effects. The UK Department for Transport estimated wider economic benefits of Crossrail, the commuter rail in London, as shown in

Table 2. They listed the economic welfare benefits from conventional appraisal and the estimated wider economic benefits. The right-hand column also identifies the associated GDP effects.

Table 2: Summary of Crossrail's welfare and GDP impacts (Net Present Value, discounted over 60 years)

Benefits	Welfare (£m)	GDP (£m)
Business time savings	4,847	4,847
Commuting time savings	4,152	
Leisure time savings	3,833	
Total transport user benefits -- conventional appraisal	12,832	
Increase in labor force participation		872
Move to more productive jobs		10,772
Agglomeration benefits	3,094	3,094
Reduced Imperfect competition	485	485
Exchequer (or tax) consequences of increased GDP	3,580	
Additional to conventional appraisal	7,159	
Total (excluding financing, social and environmental costs and benefits)	19,991	20,069

The Crossrail results compare conventional user benefits (in this case, travel time savings) to other benefits identified in the research. These include agglomeration benefits due to a denser work environment and increased interactions between firms and workers. They also include labor market benefits from workers being able to access different employment opportunities better suited to their skill set (defined as moves to more productive jobs) as well as a reduction in monopoly power for certain firms due to increased access by buyers to other sellers (reduced imperfect competition). As shown in

Table 2 these benefits, at least in the case of the Crossrail analysis, are of similar magnitude to the standard direct time savings benefits that are the main component of cost-benefit analysis.

The National Academy of Sciences (NAS) research found there to be strong statistical associations between transit capacity and two measures of agglomeration: employment density and total population, as well as relationships between those measures and wages and GDP. Large metropolitan areas exhibited stronger associations. However, there is likely a significant time lag between the transportation investments and the benefits realized, and it is not recommended to compare these benefits directly with the values of travel time and/or cost savings. Additional case studies of transit improvements in the Dallas-Fort Worth, Salt Lake City and Los Angeles areas did not find significant evidence of agglomeration that could be attributed to those improvements.

Besides NAS's research, a wide range of local economic impact studies have estimated the regional economic impact of various alternative public transportation investment scenarios. These studies relied on regional economic models to estimate the impacts of public transportation enhancements on travel times and costs, workforce access and/or business market agglomeration. In doing so, they have demonstrated the substantial magnitude of impacts that public transportation investment can have on regional economies. Examples of these local studies and their findings include the following:

Chicago, IL

Regional Transportation Authority (RTA and Metra) (EDR Group, 2007)

- Estimation made under the scenario of investing to maintain system (\$1.68 billion cost) relative to disinvestment scenario
- 11,400 jobs, \$2.0 billion in net annual business output and household cost savings gain as of 2020
- If investing to expend system (\$2.40 billion cost) relative to disinvestment scenario
- 16,900 jobs, \$3.2 billion in net annual business output and household cost savings gain as of 2020

Atlanta, GA

Metropolitan Atlanta Rapid Transit Authority (MARTA) (University of Georgia, 2007)

- Estimation made under the scenario of MARTA continue operation (\$660 million/year) relative to cease operations
- 31,700 jobs will be created by 2021 (12,000 additional jobs since 2011)
- \$4.8 billion worth of Atlanta's total sales (\$2.8 billion increase since 2001)
- \$109 per Atlanta-area resident on real disposable personal income per year by 2021

Capitol Region, CT

Regional Transit Strategy (RTS) (University of Connecticut, 2001)

- Estimation made under the scenario of the High Capital development (\$400 million capital cost and \$16.45 million annual operating and maintenance cost) relative to no-build scenario
- Population will increase by an average of 1,100 each year
- 633 jobs will be created average per year
- \$415 million personal income increase over 25 years (\$36 million annually)
- \$333 million disposable income increase over 25 years (\$29 million annually)
- \$726 million gross state product increase over 25 years (\$69 million annually)
- \$23 million local tax revenue gain over 25 years (\$2.5 million annually)

Oakland, CA

Alameda-Contra Costa Transit District (AC Transit) (Crain, 1999)

- Estimation made under the scenario of reduction in service 1,000 weekday platform equivalent hours (\$4.8m) relative to continued service
- 7.4% of the riders lost \$2.2 million in job income as a result of the cuts, and 4.2% were continuing to lose income one year later, amounting to an additional \$8.5 million a year
- \$48.1 million total annual costs to the community from the service reductions

Los Angeles, CA

Los Angeles County Metropolitan Transportation Authority (LACMTA)

(Cambridge Systematics and EDR Group, 1999)

- Estimation made under the scenario of system investment with rail/bus improvements (\$24 billion capital cost and \$50 billion operating cost over 20 years) relative to no investment scenario
- 131,200-261,700 jobs will be created as of 20th year, 2020
- \$9-16 billion in personal income gain as of 2020

New York City, NY

Metropolitan Transportation Authority (MTA) (Cambridge Systematics and EDR Group, 1997)

- Estimation made under the scenario of a 50% reduction in spending for capital needs relative to system investment needed to maintain service
- 319,800 loss in jobs as of 20th year, 2016
- \$18.9 billion loss in business sales as of 20th year, 2016

Philadelphia, PA

Southeastern Pennsylvania Transportation Authority (SEPTA)

(Urban Institute and Cambridge Systematics, 1991)

- Estimation made under the scenario of immediate shutdown of rail transit relative to funding to continue operation
- 175,000 loss in employment as of 2010
- \$10.1 billion loss in annual personal income as of 2010
- \$16.3 billion loss in annual business sales as of 2010
- \$632 million loss in combined state and local revenues as of 2010

At a national level, a recent study by American Public Transportation Association (APTA, 2014) estimated the economic impact over the next 20 years under the scenario of investing an additional \$13 billion per year in public transportation, and increasing the ridership growth from 2.4 percent to 3.5 percent per year. The estimated long-term economic impacts on income and productivity nationwide are shown in Table 3.

Table 3: Estimate of Scenario Impacts on the Economy, 2030 (effect of investing \$13 billion per year)

Form of impact	Annual Magnitude of Change after 20 years (in 2012 \$)
Household: Disposable Income	+\$18.4 billion
<i>from cost savings to public transportation passengers</i>	<i>(+\$6.8 billion)</i>
<i>from savings in auto user operating cost</i>	<i>(+\$6.2 billion)</i>
<i>from savings in auto ownership costs</i>	<i>(+\$5.4 billion)</i>

Form of impact	Annual Magnitude of Change after 20 years (in 2012 \$)
Business: Productivity	+\$10.1 billion
<i>from labor market access enhancement</i>	<i>(+\$5.0 billion)</i>
<i>from auto/truck operating cost reduction</i>	<i>(+\$5.1 billion)</i>
Tax impacts	+\$4.4 billion
<i>from federal tax revenue</i>	<i>(+\$3.3 billion)</i>
<i>from state and local tax revenue</i>	<i>(+\$1.1 billion)</i>
Economic impact	
<i>Total household and business impact</i>	+\$28.5 billion
Equivalent job benefit	410,820

2.6 Conclusions: Wider Economic Benefits (WEBs)

Conclusions drawn from the literature include:

- Public transportation increases the accessibility of a region and generates various WEBs, mostly as a result of productivity improvements
- The typical study period is 20 years since there is significant time lag between the transportation investments and the benefits realized
- WEBs include employment gains, ranging from a few hundred to tens of thousands per year
- Findings also relate public transportation investments to local economic growth, primarily as a consequence of a more productive workforce

A conservative assumption derived from observed relationships suggests that WEBs could be on the order of magnitude of 25% to 50% of traditional user benefits. Such a simplified formula could be useful as estimating WEBs prior to a project coming on line is uncertain since research following project completions shows a wide range in estimates. User benefits, on the other hand, are rooted in relationships between transportation capacity, levels of service and travel time – relationships that are better understood than relationships between capacity and WEBs. Therefore a conservative relationship between user benefits and WEBs would arguably be helpful in assessing WEBs one could anticipate from a planned investment.

2.7 System Redundancy

Passenger ferry service such as the proposed POF offers potential for system redundancy. In particular, the proposed POF would supplement not only existing ferry services operated by Washington State Ferries but also other transit and even auto commutation. In its analysis for *Kitsap Transit Passenger-Only Ferry Business Plan and Long Range Strategy*, Steer Davies Gleave (2014) identified the various existing route options between Bremerton, Kingston, Southworth and Seattle. For all three proposed

routes it is clear that the POF service would add depth to the current transportation system and increase travel options in cases of emergencies.

The benefit of redundancy provided by passenger ferries has been shown to be of incalculable value in the case of New York City's transportation system: During the terrorist attacks of September 11, 2001, the Northeast blackout of August 14, 2003, or the emergency Hudson River landing of US Airways Flight 1549 on January 15, 2009, passenger ferries played an essential role in providing emergency assistance. More recently, following Hurricane Sandy and its devastation of parts of the transit system, passenger ferry services to Staten Island and parts of the Brooklyn waterfront provided temporary transit access for thousands of affected commuters.

The potential value of ferry service in terms of system redundancy or emergency preparedness is difficult to quantify as events such as those mentioned previously are rare and essentially impossible to predict with any accuracy. However, any increase in the density of the regional passenger ferry fleet and service network will provide a greater the potential ability to respond to emergency situations.

2.8 Transit System Benefits

Several recent passenger ferry studies have proposed another economic benefit of passenger ferry services, namely benefits to existing transit services (Halcrow (2010) and Steer Davies Gleave (2013)). In particular, passenger ferries may play a positive role as providing feeder service to existing transit services, reducing overall trip costs and increasing demand on the remainder of the transit network.

Alternatively, in addition to connecting new riders to other transit systems, ferries can also divert ridership from other transit lines. If the alternative transit lines, or the stations that serve them, are overcrowded, then ferries create a benefit by easing peak load on the alternative services.

In a recent study of passenger ferries in the New York City region, it was found that reducing crowding on the Port Authority Trans Hudson (PATH) service was the major external benefit attributable to cross-Hudson ferry services (Halcrow (2010)). More recently, analysis of New York City's East River Ferry Service revealed that the ferries had reduced crowding at several subway stations by a measurable amount.

Quantifying such transit system benefits in the case of the POF services is beyond the scope of the present analysis. One area where peak period crowding would be reduced is, of course, the Washington State Ferry service from Bremerton to Seattle. Whether the proposed services would generate significant peak load easing is of interest, however, and worthy of further investigation.

3 Estimate of User Benefits from the POF

While real estate impacts and WEBs are really indirect effects of a new service such as the POF, there is a direct impact to the users of the POF. User benefits include:

- Travel time savings to users who opt to take the POF
- Safety benefits to users who opt to take the POF
- Benefits of increased accessibility for users who opt to remain on an existing transit service or roadways

As outlined in a recent ridership analysis of the POF (Steer Davies Gleave (2014)²), the estimated ridership for the POF comes primarily from existing ferry or rail service, which suggests that there will not be a significant increase in safety from transferring users from autos to (safer) passenger ferries. Given this fact, the analysis of POF user benefits focuses primarily on travel time and accessibility benefits for POF users and those remaining on alternative modes or services.

3.1 Approach to Estimating User Benefits

User benefits are most frequently estimated in the context of a cost-benefit analysis (CBA) but are increasingly used as a measure of a transportation project's economic value. For travel time savings, one approach used is to measure the travel time gains from a transport project such as the POF, estimate the number of users, and attribute a value of time (VOT) to these time savings.

Another approach, and one which is increasingly used, is to rely on a mode choice model to estimate the *willingness to pay* of users for the new service³. This approach has several advantages: It ensures that user benefits are consistent with the assumptions contained in the ridership forecasts in terms of service characteristics and their attractiveness relative to competing modes. The other advantage is that calculating user benefits from the mode choice models is fairly easy, requiring little additional modeling work that completed for a ridership analysis.

The disadvantage of the approach is that there may not be a mode choice model available, as this presupposes a fairly sophisticated ridership analysis. In the case of the POF, however, a mode choice model was developed for the three proposed routes, and the models were used to develop estimates of user benefits.

The mode choice models are described in Steer Davies Gleave (2014). The basic premise of these models is that they predict a service's share based on its price and characteristics (fare, travel time, frequency, and access time) relative to the other options. For each option a *travel utility* experienced by users is

² Steer Davies Gleave, 2014. Economic Impacts of Proposed POF Services for Kitsap Transit. *Report Submitted to KPFF Consulting Engineers.*

³ For details, see Small, K A and H S Rosen, 1981. "Applied Welfare Economics with Discrete Choice Models". *Econometrica*, Vol. 49 No. 1, pp. 105-130.

calculated, and this travel utility can be easily converted into a monetary amount. This monetary value has been shown to be a very good estimate of the user benefits derived from the mode for users⁴.

3.2 Findings

3.2.1 User Benefits for Bremerton to Seattle

In Steer Davies Gleave (2014) ridership estimates for the proposed POF included service assumptions of 28 minutes sail time, \$11 round trip cost and, in one service scenario, 6 round trips per day. How the POF compares to the existing options (the existing Washington State Ferry and another transit option using a ferry from Southworth and auto or transit) is detailed in Table 4. Resulting ridership estimates for the POF under these service assumptions are detailed in Table 5.

Table 4: Bremerton – Seattle Alternative Routes Level of Services

Alternative Routes LOS	Proposed POF Service	Existing WSF Bremerton Ferry	Existing Southworth Ferry + Auto/Transit
Travel time	28 minute crossing	60 minute crossing	70 minute travel time (drive time + crossing)
Round trip cost	\$11	\$8	\$19.85
Frequency	6 round trips/day	15 round trips/day	24 round trips/day

Table 5: Bremerton – Seattle Ridership Estimates

Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)
6 Round trips/day	1.37M	212,544	\$1.2M

Applying the same mode choice model to calculate the change in user benefits for users (both those opting for the POF and not choosing it) yields **an annual estimate of \$3.2 million in user benefits**, with most of the utility change coming from the users opting for the service. This means that the 212,544 estimated annual trips generate \$15.30 in user benefits per trip⁵.

⁴ As shown in Small and Rosen (1981, op. cit.) the mode choice model calculates both the benefits to users opting for the service as well as the other users who opt not to use the service. The users not using the service also have a higher utility as their travel choices have increased, irrespective of whether or not they actually choose to avail themselves of the new service.

⁵ We would expect that the user benefits would be at least as great as the ticket price, as a user has to derive at least as much utility (in monetary terms) as the monetary cost of the service. At \$11 round trip cost, this means a \$5.50 trip fare is well below the \$15.27 estimate in user benefits.

3.2.2 User Benefits for Kingston to Seattle

The proposed Kingston to Seattle POF is detailed in

Table 6, including its various existing service alternatives, and the ridership estimates in Table 7.

Table 6: Kingston – Seattle Alternative Routes Level of Services

Alternative Routes LOS	Proposed POF Service	Existing WSF Vehicle Ferry King - Edmonds + Drive to Sea	Existing WSF Vehicle Ferry King - Edmonds + Transit to Sea	Drive + Existing WSF Vehicle Ferry Bainbridge - Sea
Travel time	32 minute crossing	60 minutes	80 minutes	35 minutes
Round trip cost	\$15	\$47.80	\$15	\$17.95
Frequency	6 round trips/day	15 round trips/day	4 round trips/day	21 round trips/day

Table 7: Kingston – Seattle Ridership Estimates (Method 2 – 2010 Data)

Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)
6 Departures/day	1.07M	167,325	\$1.3M

Applying the Kingston to Seattle mode choice model to calculate the change in user benefits for users yields **an annual estimate of \$2.2 million in user benefits**. This means that the 167,325 estimated annual trips generate over \$13 in user benefits per ferry trip.

3.2.3 User Benefits for Southworth to Seattle

The proposed Southworth to Seattle POF is detailed in Table 8, including its various existing service alternatives, and the ridership estimates in Table 9.

Table 8: Southworth – Seattle Alternative Routes Level of Services

Alternative Routes LOS	Proposed POF Service	Existing WSF Vehicle Ferry Southworth - Fautleroy + Drive to Sea	Existing WSF Vehicle Ferry Southworth - Fautleroy + Transit to Sea	Existing WSF vehicle Ferry Southworth - Fautleroy + Water Taxi to Sea	Drive + Existing WSF Vehicle Ferry Bremerton - Sea	Drive all the way to Seattle
Travel time	23 minutes	60 minutes	80 minutes	50 minutes	60 minutes	70-90 minutes
Round trip cost	\$11	\$55.40	\$11.25	\$11.00	\$17.95	\$30-35
Frequency	6 round trips/day	24 round trips/day	24 round trips/day	6 round trips/day	15 round trips/day	N/A

Table 9: Southworth – Seattle Ridership Estimates

Scenario	Total Market Demand 2013	Annual POF Ridership	Annual Revenue (\$2014)
6 Departures/day	0.67M	138,805	\$0.8M
12 Departure/day	0.67M	257,804	\$1.4M

Applying the Southworth to Seattle mode choice model to calculate the change in user benefits for users yields **an annual estimate of \$2.1 million in user benefits**. This means that the 167,325 estimated annual trips generate over \$14.8 in user benefits per ferry trip.

3.3 Potential Wider Economic Benefits and Real Estate Benefits

As discussed in this report, we can infer from the literature that there are some relationships between user benefits and both WEBs and real estate benefits. For the purpose of the present analysis, we apply these relationships to the user benefits calculated above, but suggest that these are estimates that must be considered very preliminary.

The relationships to user benefits assumed are the following:

- WEBs are equal to 25% of user benefits
- Real estate values in the aggregated Census Tracts immediately contiguous to the ferry landings could see a premium equal to annual user benefit / 0.15 (with the 0.15 equal to the most conservative values for the discount rate as identified in past studies. We assume that only properties within these Census Tracts will see an increase in property values.

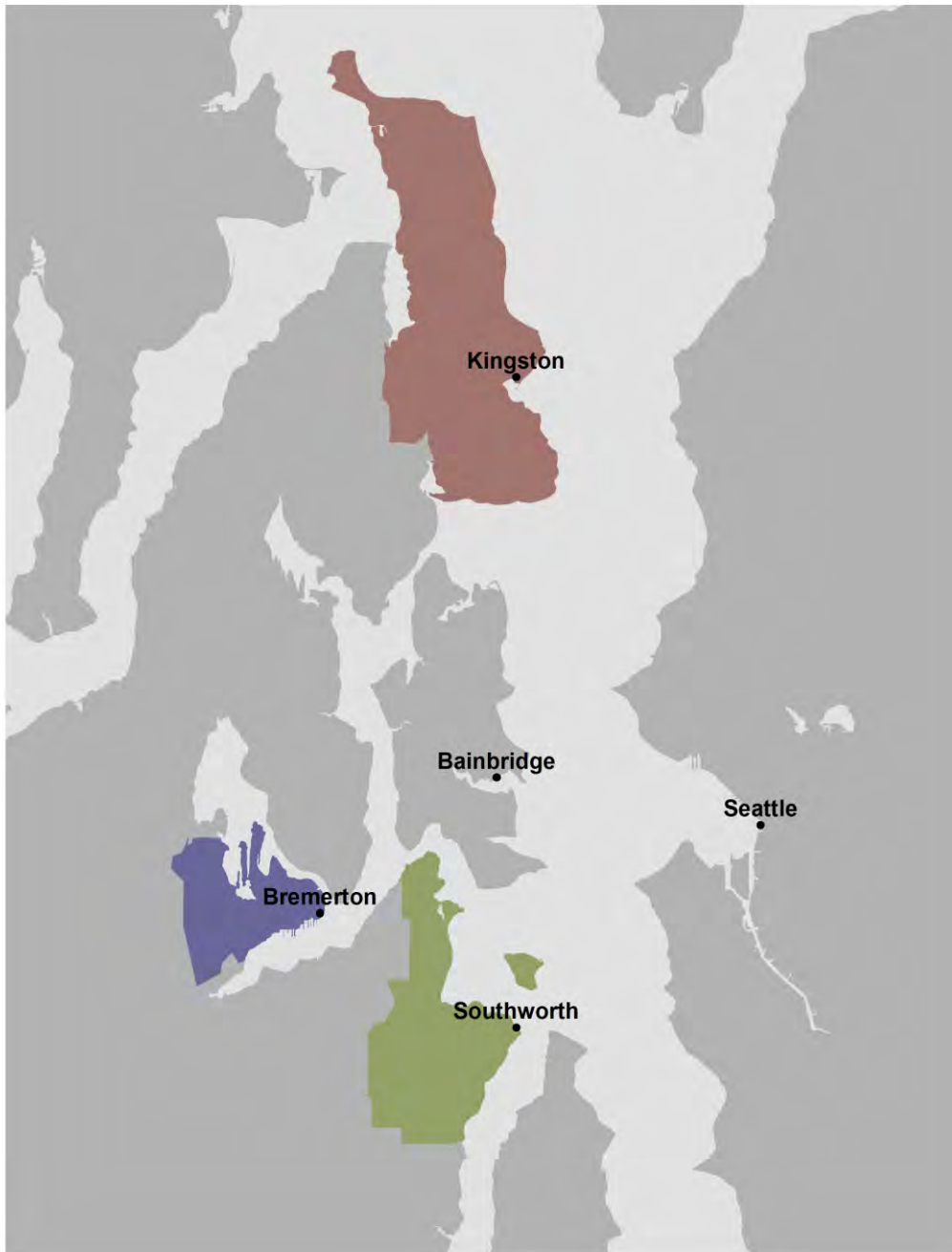
Taking these factors into account we can summarize estimates of economic impacts of the three POF routes in Table 10.

Table 10: Total Economic Impact Estimates for the Proposed POF Services

Benefit Category	Bremerton to Seattle	Kingston to Seattle	Southworth to Seattle
User Benefits / Year	\$3.2M	\$2.2M	\$2.1M
Wider Economic Benefits / Year	\$810,000	\$540,000	\$513,000
Total Real Estate Value Created	\$3.8M	\$3.6M	\$2.1M

The aggregated Census Tracts that were used to define the immediate catchment areas are outlined in Figure 3.1 below. These zones are sub-areas of the larger market areas used for ridership modeling as described in Steer Davies Gleave (2014)⁶.

Figure 3.1: Aggregate Census Tracts Used to Define Market Areas



⁶ The aggregated Census Tracts around Southworth were reduced by one-half to reflect concentrations of populations that were within a Tract but too distant to benefit from real estate impacts.

4 Conclusions

In the present analysis an extensive review of the relevant literature confirms that the proposed POF services could well generate considerable economic impacts. Estimates of user benefits alone reveal that these benefits are close to three times the magnitude of predicted ticket revenues, a finding in keeping with expectations.

A very simple estimate of WEBs and real estate values was also developed, relying on a relationship identified from the reviewed literature. These suggest additional benefits of the POF, with WEBs estimated at 25% of the value of user benefits, and real estate benefits a capitalization value reflecting a capitalization of user benefits into properties within proximate Census Tracts to POF pier locations.

WEBs and real estate benefits should be considered indicative, as the scope of the present study could not allow for more than a very rough approximation of what these benefits could be.

Appendix: Hedonic Methods

While there are variations in the specifics of the models used, the most common econometric approach in the literature is hedonic regression (Rosen, 1974). The hedonic price model is used to explore the impact of transit on real estate values; the model enables the user to separate out the effects of housing characteristics from the impact of location. This approach treats a certain property as a composite of characteristics to which value is attached. The value of characteristics explains the value of property as a whole. In order to estimate public transportation's impact on property value, the hedonic model puts property value as a general function f of:

$$p_h = f(S_i, N_i, L_i, E_i)$$

where S_i = the set of i structural characteristics

N_i = the set of i neighborhood/environment characteristics

L_i = the set of i location specific characteristics

E_i = the set of i economic characteristics

Square footage of a building and the number of bedrooms are common structural characteristics used in these studies, and the Census Tract or zip codes are common neighborhood variables. The economic characteristics are associated with macro-level housing market and could be considered as fixed during a short period of time.

In the hedonic model, the impact of public transportation is captured by including measures of transit access as independent variables falling in the category of location specific characteristics. A simple analytical approach would be to include this distance measure as an independent variable in the hedonic model to capture the value of being close to a ferry stop on house prices. The following equation illustrates this simple model:

$$\ln(p_i) = f(X_i) + \beta_1 \frac{1}{D_i} + \varepsilon_i$$

Where p_i is the price of housing unit i , X_i is a vector of property characteristics for unit i , ε_i is an error term, and D_i represents the distance between unit i and the closest transit station. In this formula, if the estimated coefficient β_1 has a positive coefficient in the regression, it would suggest that those housing units farther away from the transit stations have lower prices, all else equal, and therefore being near a transit station has a positive impact on prices. This implies that transit is a positive amenity, and β_1 indicates the marginal value of being closer to a transit station.

References

- Appleseed and the Louis Berger Group (2005). Assessing Development Opportunities in the AirTrain Station Area, Jamaica. *Prepared for New York City Economic Development Corporation.*
- Cambridge Systematics with Economic Development Research Group (1997). Lasting Benefits of Public Transit Investment. *Prepared for New York MTA.*
- Cambridge Systematics and Economic Development Research Group (1999). Public Transportation and the Nation's Economy. *Prepared for the American Public Transportation Association, Washington, DC.*
- Carstensen, Fred, et. al. (2001) The Impact of the Regional Transit Strategy on the Capitol Region of Connecticut- A Dynamic Impact Analysis. *Connecticut Center for Economic Analysis.*
- Cervero, R., & Duncan, M. (2002a). Land value impacts of rail transit services in Los Angeles County. *Report prepared for National Association of Realtors Urban Land Institute.*
- Cervero, R., & Duncan, M. (2002b). Land value impacts of rail transit services in San Diego County. *Report prepared for National Association of Realtors Urban Land Institute.*
- Cervero, R., & Duncan, M. (2002c). Benefits of proximity to rail on housing markets: Experiences in Santa Clara County. *Journal of Public Transportation, 5 (1).*
- Cervero, R., & Duncan, M. (2002d). Transit's value-added effects: light and commuter rail services and commercial land values. *Transportation Research Record: Journal of the Transportation Research Board, 1805(1), 8-15.*
- Cervero, R. (2004). *Transit-oriented development in the United States: experiences, challenges, and prospects* (Vol. 102). Transportation Research Board.
- Chicago Metropolis 2020, Economic Development Research Group, Fregonese Associates, and Smart Mobility, Inc. (2007). Time is Money: The Economic Benefits of Transit Investment. *Prepared for Chicago Metropolis 2020.*
- Crain & Associates, Ricardo Byrd, & Omniversed International (1999). Using Public Transportation to Reduce the Economic, Social, and Human Costs of Personal Immobility. *Transit Cooperative Research Program Report 49, Transportation Research Board, Washington, DC.*
- Debrezion, G., Pels, E., & Rietveld, P. (2007). The impact of railway stations on residential and commercial property value: a meta-analysis. *The Journal of Real Estate Finance and Economics, 35(2), 161-180.*
- Economic Development Research Group, Inc. (2014). Economic Impact of Public Transportation Investment: 2014 Update. *Prepared for the American Public Transportation Association (APTA)*
- Fogarty, N., Eaton, N., Belzer, D., & Ohland, G. (2008). Capturing the value of transit. *Center for Transit-Oriented Development, Nov. 2008.*
- Gibbons, S., & Machin, S. (2005). Valuing rail access using transport innovations. *Journal of Urban Economics, 57(1), 148-169.*
- Goetz, E. G., Ko, K., Hagar, A., Ton, H., & Matson, J. (2010). *The Hiawatha Line: impacts on land use and residential housing value* (No. CTS 10-04).

Graham, D. (2005). Transport, Wider Economic Benefits, and Impacts on GDP. *Discussion paper prepared for Department for Transport*.

Halcrow, Inc., 2010. *Study of Regional Private Passenger Ferry Services in the New York Metropolitan Area: Route and Service Analysis and Public Policy Goals*. Report Submitted to the Port Authority of New York and New Jersey.

Hess, D. B., & Almeida, T. M. (2007). Impact of proximity to light rail rapid transit on station-area property values in Buffalo, New York. *Urban Studies*, 44(5-6), 1041-1068.

Immergluck, D. (2009). Large redevelopment initiatives, housing values and gentrification: the case of the Atlanta Beltline. *Urban Studies*, 46(8), 1723-1745.

Lewis-Workman, S., & Brod, D. (1997). Measuring the neighborhood benefits of rail transit accessibility. *Transportation Research Record: Journal of the Transportation Research Board*, 1576(1), 147-153.

Rosen, S. (1974). Hedonic prices and implicit markets: product differentiation in pure competition. *The Journal of Political Economy*, 34-55.

Steer Davies Gleave (2013). Citywide ferry Study 2013 – Preliminary Report. *Prepared for New York City Economic Development Corporation*.

Steer Davies Gleave (2014). Kitsap Transit Passenger-Only Ferry Business Plan and Long Range Strategy: Service Opportunities and Route Analysis. *Prepared for KPFF Consulting Engineers*.

Tanner, Tom and Adam Jones (2007). The Economic Impact of the Metropolitan Atlanta Rapid Transit Authority: An Analysis of the Impact of MARTA Operations on and around the Service Delivery Region. *Carl Vinson Institute of Government, University of Georgia*.

Urban Institute and Cambridge Systematics (1991). Public Transportation Renewal as an Investment: The Economic Impacts of SEPTA on the Regional and State Economy. *Prepared for the Southeast Pennsylvania Transportation Authority, Philadelphia*.

Voith, R. (1991). Transportation, sorting and house values. *Real Estate Economics*, 19(2), 117-137.

Voith, R. (1993). Changing capitalization of CBD-oriented transportation systems: Evidence from Philadelphia, 1970–1988. *Journal of Urban Economics*, 33(3), 361-376.

Voith, R., Miles, D., Angelides, P.A. (2014). The impacts of regional rail service on suburban house prices in Southeastern Pennsylvania. Submitted to *Transportation Research Board*.

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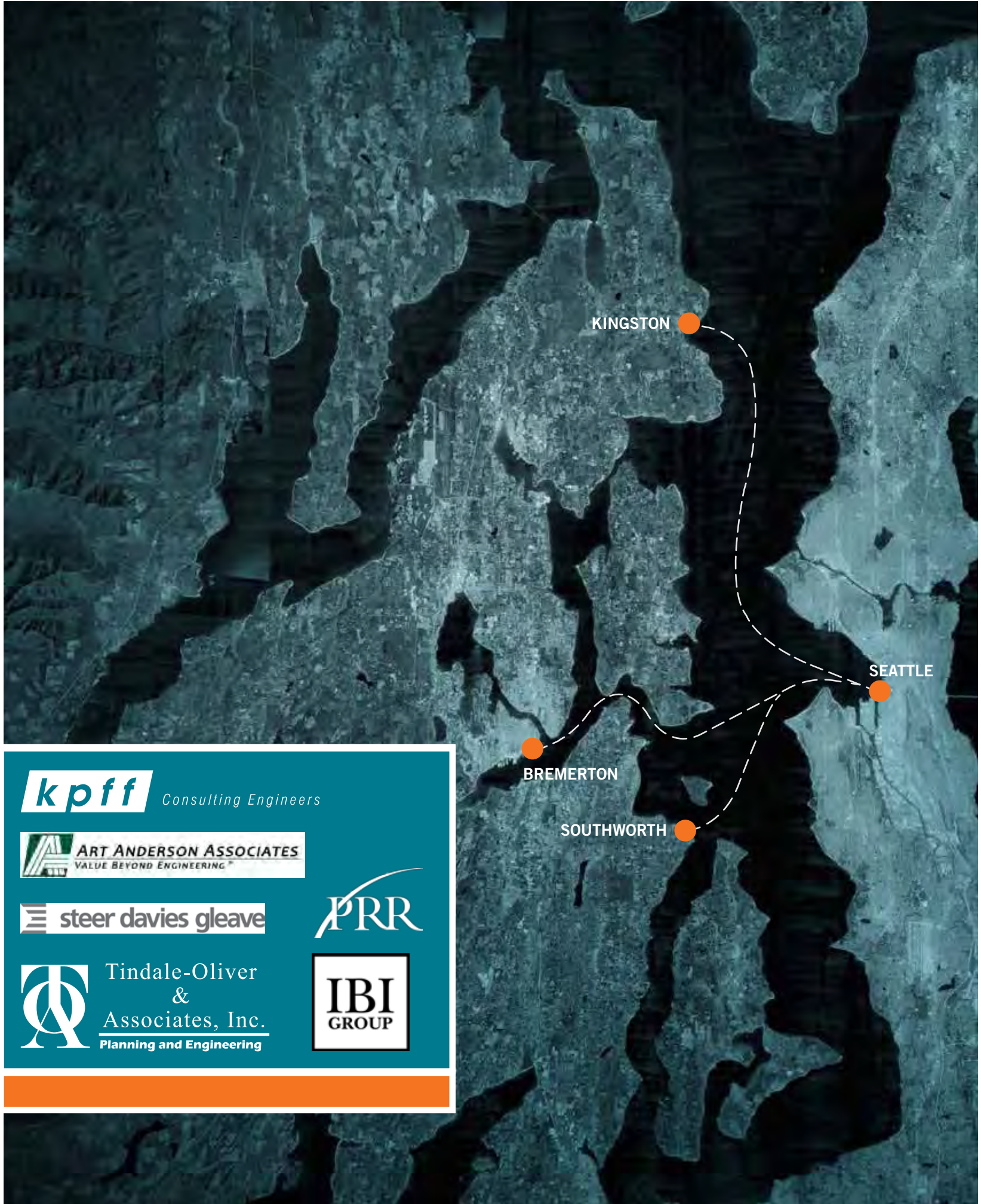
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