

Passenger-Only Ferry Cost Analysis

Prepared for

State of Washington Joint Transportation Committee
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ACRONYMS

ESHB	Engrossed Substitute House Bill
ESSB	Engrossed Substitute Senate Bill
FY	fiscal year
JTC	Joint Transportation Committee
JTFF	Joint Legislative Task Force on Ferry Funding
KT	Kitsap Transit
POF	passenger-only ferry
PVF	passenger-vehicle ferry
WSF	Washington State Ferries

1. INTRODUCTION

1.1 BACKGROUND AND STUDY PURPOSE

The Joint Transportation Committee (JTC) of the Washington State Legislature formed a Passenger-Only Ferry Task Force as part of Engrossed Substitute Senate Bill (ESSB) 6091 in 2005 to review alternative proposals for providing passenger only ferry (POF) service in Puget Sound. Other relevant provisions in ESSB 6091 included:

- Funding for continued service between Vashon and Seattle through June 30, 2007.
- Funding for the proposed Washington State Ferries (WSF) triangle POF service between Vashon, Southworth, and Seattle was appropriated but may not be spent without further authorization from the Legislature.
- Existing permit applications by private operators to provide Southworth-Seattle service were frozen with no additional applications allowed. No action on the existing permits may be taken by the Washington Utilities and Transportation Commission until the Legislature makes a decision about state participation in the 2006 Second Regular Session.

In December 2005, Parametrix was retained to review information presented to the POF Task Force and to assess, analyze, and compare three alternative POF service delivery options in the Vashon-Southworth-Seattle corridors. Information on the alternative POF proposals, described in Section 2 below, has been provided by WSF and Kitsap Transit (KT). The review included a comparison of the service and operating plans, capital and operating costs, ridership, and an assessment of diversion from WSF passenger-vehicle routes. This report summarizes the results of the alternative POF service delivery options proposed by WSF and Kitsap Transit and being considered by the POF Task Force.

1.2 HISTORICAL CONTEXT

WSF has operated POF service from Vashon to Downtown Seattle since 1990. Service was provided 16 hours/day, 7 days/week, until the year 2000, when Initiative 695 eliminated certain transportation revenue dedicated to the state ferry system, and the legislature subsequently reduced POF budgets and service to weekdays only. In 2000, a Joint Legislative Task Force on Ferry Funding (JTFF) recommended that WSF should no longer consider POF service to new communities such as Southworth, although Seattle-Vashon POF service should continue on a weekday-only schedule. The JTFF also recommended that the State Legislature remove barriers to allow privately-operated POF service to be implemented.

In 2003, the State Legislature funded the Vashon-Seattle POF service through 2005, and authorized ESHB 1853 Public Transit Benefit Areas to develop plans having a boundary on the Puget Sound to provide POF services. Following passage of ESHB 1853, Kitsap County leaders formed the Marine Transportation Association of Kitsap to provide a forum for Kitsap based POF system. In 2002-2003, Kitsap Transit developed a POF service plan leading to a public vote to approve a sales tax increase to implement the service. However, the measure was not approved by Kitsap County voters.

Kitsap Transit then entered into Joint Development Agreements with private ferry operators to provide POF service. Kitsap Ferry Company LLC currently provides POF service between Seattle and Bremerton. Aqua Express started service between Kingston and Seattle in January 2005 but suspended service in September 2005. Kitsap Transit has also had discussions with private operators regarding a new Seattle-South Kitsap service. The private POF service

described in Option 2 below between Southworth and Seattle is one possible alternative for providing service to South Kitsap County.

1.3 ACKNOWLEDGEMENTS

We acknowledge the cooperation and information provided by Washington State Ferries and Kitsap Transit to develop this report. The *Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System*, Washington State Department of Transportation, January 2005, and Kitsap Transit's Passenger-Only Ferry Plan B were used as sources of background information for this report. Cost information for the Kitsap Transit private ferry service was provided by Mike Bennett of Mosquito Fleet, one of several private passenger ferry operators in the Puget Sound region who has expressed interest in providing the service from Vashon and Southworth to Seattle.

2. PASSENGER-ONLY FERRY OPTIONS

The three POF service delivery options evaluated in this report are described below. Table 1 summarizes and compares the relevant attributes of each option.

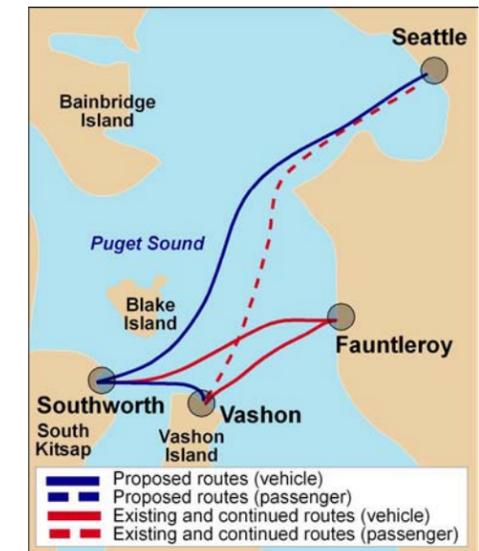
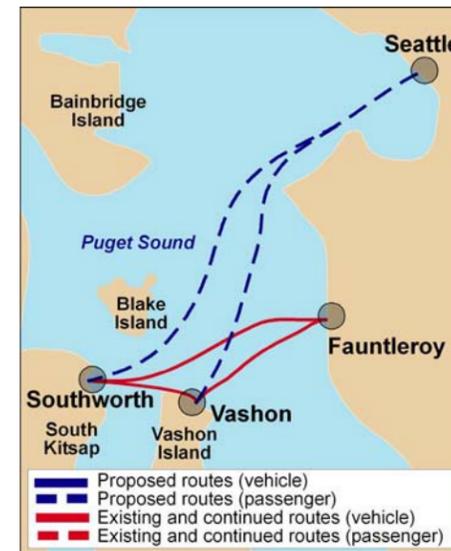
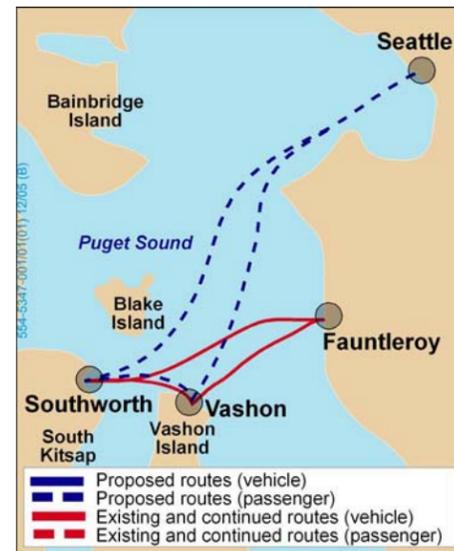
Option 1 – This option assumes a triangular POF service route connecting Vashon, Southworth, and downtown Seattle, operated by WSF. The triangular POF service route assumes three round trips, in both the AM and PM peak period, five days per week. The service would operate from Downtown Seattle to Vashon to Southworth, and then back to Downtown Seattle during both the AM and PM peak periods. This operation provides Southworth the faster direct trip to Downtown Seattle in the AM peak period and Vashon the faster direct trip from Downtown Seattle in the PM peak period.

Option 2 – This option provides two separate direct POF service connections between Vashon and downtown Seattle and between Southworth and Downtown Seattle. The service between Southworth and Seattle is assumed to be operated by Kitsap Transit. The service between Seattle and Vashon is assumed to be operated by either the Kitsap Transit or WSF. A total of three round trips during both the AM and PM peak periods would be provided on both of these routes.

Option 3 – This option assumes continued operation of the existing direct Vashon-Seattle POF, together with the transfer of one passenger-vehicle ferry (PVF) now operating in the Southworth, Vashon, and Fauntleroy corridor. The PVF would provide a direct connection between Southworth and Downtown Seattle. The transfer of the PVF (assumed to be the 130-vehicle capacity Issaquah) to this Southworth and Downtown Seattle connection would occur Monday through Friday only and remain on the existing Vashon-Southworth-Fauntleroy route and schedule on weekends. A small 40-vehicle PVF (Hiyu) would also be added to shuttle pedestrian and vehicle traffic between Southworth and Vashon, operating on a 16-hour schedule, 5 days per week.

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Table 1. Summary of Passenger Ferry Options



Route	SEATTLE/ VASHON	SEATTLE/ SOUTHWORTH	VASHON/ SOUTHWORTH	SEATTLE/ VASHON	SEATTLE/ VASHON (option)	SEATTLE/ SOUTHWORTH	VASHON/ SOUTHWORTH	SEATTLE/ VASHON	SEATTLE/ SOUTHWORTH	VASHON/ SOUTHWORTH
Vessel	 Chinook or Snohomish			 St. Nicholas	 Kalama or Skagit	 Rachel Marie	 Issaquah, Tillikum, or Klahowya	 Kalama or Skagit	 Issaquah	 Hiyu
Public or Private	WSF			KT (Private)	WSF	KT (Private)	WSF	WSF	WSF	WSF
Type	POF			POF	POF	POF	PVF	POF	PVF	PVF
Vessel Capacity	350			150	250 (seats 190)	200	1200	250 (seats 190)	1200	200
Route Distance (miles)	9.0	9.0	3.0	9.0	9.0	9.0	3.0	9.0	9.0	3.0
Hours of Operation	M-F (5-hours in AM and PM)	M-F (5-hours in AM and PM)	M-F (5-hours in AM and PM)	M-F (5-hours in AM and PM)	M-F (4 hours in AM and PM)	M-F (4-hours in AM and PM)	Same as Existing 7 days (21-hours)	M-F (5-hours in AM and PM)	M-F (16 hours)	M-F (16 hours)
Trip Time (minutes)	38 AM 23 PM	25 AM 40 PM	15 AM & PM	22	30	22	10	30	38	10
No. of Roundtrips per day	6	6	6	6	6	6	20-23		8-10	
Fare (Round Trip)	\$ 7.36	\$ 7.36	\$ 7.36	\$ 7.36	\$ 7.36	\$ 7.36	\$4.00	\$6.36	\$6.10	\$4.00
Fuel Consumption (gal/hr)	157	157	157	68	81	75		81		15

3. RIDERSHIP

Ridership estimates for the POF service options described in Section 2 were obtained from WSF and Kitsap Transit. For Options 1 and 3, ridership estimates were based on information contained in the *Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System* report. These estimates were modified to reflect a third AM and PM peak period trip assumed in Option 1 and 3 compared to two AM and PM peak period trips assumed in the report. For Option 2, the initial ridership estimates for the private ferry operation were also based on WSF's estimates, but were verified to ensure that the smaller 150 and 200-passenger vessels proposed for Vashon and Southworth, respectively, had sufficient capacity to accommodate this number of riders.

3.1 OPTION 1

Table 2 summarizes relevant information reviewed to double check WSF ridership estimates for Option 1. Current annual ridership on this route during fiscal year (FY) 2005 was 188,578, with approximately 46 percent of the riders transferring from Southworth. WSF has estimated the annual farebox revenue at \$1,447,000. There are four variables in this estimate compared to the existing service that could increase or decrease ridership:

- A third trip during each of the peak periods was added to Option 1 compared to the existing service with two trips in both the AM and PM peak period. This third trip would fall outside of the typical three-hour peak commute window, but would still generate additional riders and increase overall daily and annual ridership. According to WSF, this third trip was assumed to increase daily ridership by 10 percent the first year and 25 percent the second year.
- The faster travel time with the triangle service compared to the existing service, especially to Southworth, would also potentially increase the number of current riders. Southworth riders currently transfer from the PVF at Vashon and have a 50 minute trip compared to 23 minutes in the AM peak period and 38 minutes in the PM peak period. This is a significant travel time improvement for Southworth riders that would increase ridership.
- The current 250-passenger vessels on the Vashon-Seattle route can limit ridership on some trips. The increase to the 350-passenger vessels would accommodate more riders per trip on a vessel with more comfortable seats.
- A fare increase of \$1.00 per round trip was assumed, a 16 percent fare increase, which would tend to decrease overall daily and annual ridership. Based on information in the *Seattle-Vashon Passenger-Only Ferry Service – Revenue Maximizing Scenarios*, Parsons Brinckerhoff, June 5, 2003, it appears that this fare increase would result in a ridership decrease of 9-12 percent based on information in this report.

As a point of comparison, ridership on the Vashon-Seattle POF during one of the highest years in FY 1999 was 321,237 for service that operated 7-days/week, 16-hours/day. Therefore the estimated annual ridership of 393,206 for the triangle service represents a 22 percent increase over FY 1999. The triangle service concept is a significant improvement over existing service to Southworth that currently requires a transfer at Vashon. There appears to be substantial latent or untapped demand especially at Southworth that would be the primary reason to expect some ridership increase; however, the magnitude of the increase may be high.

The end result of WSF’s assumed ridership estimate is approximately 174 percent higher than current estimated ridership for FY 2005, as shown in Table 2. With the combined effect of the four factors mentioned above (three increasing and one decreasing ridership) and comparison to historical ridership on this route, **we conclude that WSF’s ridership and farebox revenue estimates for Option 1 are reasonable, but could be overstated during the first year of operation by as much as 10-20 percent.**

Table 2. Ridership Forecasts for Option 1

	Seattle-Vashon	Seattle-Southworth	Total
2003 PM Peak Period Ridership	223	190	413
% of Total	54%	46%	100%
Existing Annual Ridership (16-hour service from July 2004 – June 2005)	101,823	86,755	188,578
Adjusted Existing Annual Ridership (4+4 scheduled operation)	77,589	66,107	143,696
Assumed Average Fare (One-Way)	\$3.68	\$3.68	\$3.68
Assumed Annual Riders	157,282	235,924	393,206
Annual Revenue	\$578,800	\$868,200	\$1,447,000
% Growth Assumed	103%	257%	174%

3.2 OPTION 2

For Option 2, Kitsap Transit ridership estimates were based on WSF estimates for Options 1 and 3 but were verified to ensure that the smaller 150 and 200-passenger vessels proposed with this service had sufficient capacity to accommodate this number of riders (99 riders per trip, or 66 percent of capacity for Vashon and 149 riders per trip, or 75 percent of capacity for Southworth).

As shown previously in Table 1, Option 2 results in a 15 minute faster travel time in the AM peak period for Vashon riders, and a 15 minute faster travel time in the PM peak period for Southworth riders compared to the WSF triangle operation in Option 1. In addition, the total round-trip cycle time for the direct service is 60 minutes, compared to 75-80 minutes for the WSF triangle service in Option 1. This means that all three peak period trips would fall within the peak 3-hour commute time frame. These service factors have the potential to increase ridership over Option 1 by as much as 10-20 percent, although revenue estimates for this Option 2 conservatively assumed similar ridership levels as Option 1. **Therefore, we conclude that the Kitsap Transit/Private Operator estimates for Option 2 are reasonable. Because of the service advantages mentioned above, there is a greater potential for the ridership estimates to be achieved with this option compared to Option 1.**

Table 3. Ridership Forecasts for Option 2

	Seattle-Vashon (KT)	Seattle-Southworth (KT)	Total (KT)	Seattle-Vashon (WSF)
Assumed Average Fare	3.68	3.68	3.68	3.68
Assumed Annual Riders	156,816	236,016	392,832	156,816
Annual Fare Revenue	\$577,083	\$868,539	\$1,445,622	\$577,083
Annual Total Revenue	\$733,899	\$1,104,555	\$1,838,454	\$577,083

¹ Total Revenue for Kitsap Transit includes additional revenue from food, beverage, and concession sales at an average of \$1.00 per rider.

3.3 OPTION 3

For Option 3, ridership estimates were based on information contained in the *Ten-Year Passenger Strategy for Washington’s Multimodal Ferry Transportation System* report. These estimates were modified to reflect a third AM and PM peak period trip assumed in Option 3 compared to two AM and PM peak period trips assumed in the report. Annual ridership is slightly lower than ridership from Vashon in Option 2 or 3, but still represents an increase over current ridership from Vashon due to the added third trip during each peak period.

Table 4. Ridership Forecasts for Option 3

	Seattle-Vashon POF	Seattle-Southworth
Assumed Average Fare	\$3.18	\$3.00/\$2.10 ¹
Assumed Annual Riders	289,780	215,242/231,964 ²
Annual Revenue	\$921,500	\$1,132,851 ³

¹ Vehicle/passenger fare increase based on higher Central Sound rates.

² Assumed annual vehicle/passenger ridership based on WSF annual revenue estimate.

³ Annual revenue reflects fare increase from higher Central Sound fare.

3.4 RIDERSHIP CHANGES FROM NEW SERVICE

The addition of a new passenger ferry service route in close proximity to existing routes generally results in a diversion of ridership. The magnitude of diverted ridership cannot be estimated precisely as the change in ridership on the existing routes before and after implementation since ridership may be influenced by other factors such as fare increases or other background condition changes. Therefore, the degree of diversion is more appropriately represented by the difference between the change in ridership on affected routes (routes with similar traveler origins and/or destinations) versus the change in ridership on unaffected routes (routes with different traveler origins and/or destinations). Additionally, the magnitude of diversion can be expected to be relatively low if the new level of service (e.g., origin-destination, headways, and travel time) is not comparable to the existing route. Similarly, a relatively high proportion of diverted ridership would be expected if the new route level of service is comparable or is an improvement to the existing route level of service.

To estimate the effects of adding a Southworth-Seattle POF route on the Southworth-Vashon-Seattle on ridership, two recent examples of new passenger-ferry service were evaluated: Bremerton-Seattle and Kingston-Seattle POF services.

Prior to 2005, ferry commuters in Kingston with destinations in the Seattle area could take the Kingston-Edmonds PVF route and drive to Seattle, or drive to Bainbridge Island and use the Bainbridge Island-Seattle PVF. In January 2005, a private passenger ferry operated by Aqua Express was started between Kingston and Seattle. The estimated number of riders diverted from the Kingston-Edmonds and Bainbridge Island-Seattle routes is summarized in Table 5, below.

As shown in Table 5, the change in ridership before and after implementation of POF service was -10.0 percent for the Kingston-Edmonds route and -7.0 percent for the Bainbridge-Seattle route for a combined change in ridership of -7.71 percent. Comparing the combined change in ridership of affected routes (-7.71 percent) to the change in ridership of unaffected routes (-5.84 percent) results in an estimated diversion of 1.87 percent on these routes. This results in an estimated annual ridership decrease on WSF routes of 19,000 or approximately 75 riders on weekdays when the POF is in service. Assuming an average one-way passenger fare of \$2.75, this ridership decrease results in a revenue loss of approximately \$50,000.

Table 5. POF Effects on Kingston-Edmonds and Bainbridge Island-Seattle Ridership

Service	Ridership Before POF Service ¹	Ridership After POF Service ¹	% Change
Systemwide	2,213,184	2,064,898	-6.70%
Kingston-Edmonds	240,644	216,578	-10.00%
Bainbridge-Seattle	775,567	721,277	-7.00%
Kingston-Edmonds and Bainbridge-Seattle total	1,016,210	937,855	-7.71%
All other routes unaffected by addition of POF route	1,196,974	1,127,043	-5.84%
Diversion		19,000	1.87%

Source: WSF, January 18 2005 - September 30, 2005

¹ Commuter fare ridership

In 2004, a similar example of ridership diversion resulted when Kitsap Ferry Co. started a POF service route between Bremerton and Seattle to supplement the existing PVF service. The effects of this POF service addition are illustrated in Table 6, below. This results in an estimated annual ridership decrease on WSF routes of 45,200 or approximately 180 riders on weekdays when the POF is in service. Assuming an average one-way passenger fare of \$2.75, this ridership decrease results in a revenue loss of approximately \$125,000.

Table 6. POF Effects on Bremerton-Seattle Ridership

Service	Ridership Before POF Service ¹	Ridership After POF Service ¹	% Change
Systemwide	1,052,702	969,529	-7.9%
Bremerton-Seattle	311,847	255,403	-18.1%
All other routes unaffected by addition of POF route	740,855	714,126	-3.6%
Diversion		45,200	-14.5%

Source: WSF, October 2004 - June 2005

¹ Commuter fare ridership

Following the same methodology, the amount of diverted ridership is calculated by comparing the change in ridership on the affected route (-18.1 percent) versus the change in ridership of unaffected routes (-3.6 percent), which results in a diversion of approximately 14.5 percent.

As described above, the magnitude of diverted ridership is influenced by several factors including origin-destination, travel time, and headways. Introduction of the Kingston-Seattle POF likely resulted in a relatively small amount of diversion due to the change in destination; i.e., a substantial portion of the Kingston-Edmonds ridership did not have a destination in the Seattle area or had a destination in the Seattle area that is not as accessible using transit or non-motorized services and facilities.

According to WSF, the majority of Southworth-Vashon riders have a final destination to Seattle. For these commuters, the addition of a Southworth-Seattle POF service would eliminate the transfer in Vashon, reduce travel time, and increase flexibility (current Vashon-Seattle service has only two AM departures with a 1.25 hour headway). Given the similarities between the Southworth-Seattle POF and the Bremerton-Seattle POF (i.e., similar levels of service between existing and proposed routes), the amount of diverted ridership would more likely parallel the Bremerton-Seattle diversion as opposed to Kingston-Seattle. However, it should be assumed that a portion of these existing riders have destinations closer to Fauntleroy and would continue using the Southworth-Vashon-Fauntleroy route.

Based on information from these two example routes, the passenger diversion amount for Options 1 and 2 would likely be similar to Bremerton-Seattle (14.5 percent reduction), but could be smaller. An assumed 10 percent diversion from the existing WSF Southworth-Fauntleroy route could result in a loss of approximately 40,000 annual passengers. This would result in an estimated annual revenue loss of up to \$200,000 for Options 1 and 2.

4. COST AND FAREBOX RECOVERY ESTIMATES

This section summarizes operating and capital cost estimates prepared for each of the service options. Where possible, operating costs were based on the same base assumptions. For example, fuel costs for all options were assumed to be \$1.69/gallon. Table 7 summarizes the operating, maintenance, and capital costs for Options 1, 2, and 3. All operating cost information was based information received from WSF and KT. Meetings were held with both WSF and KT staff to review information in the cost and revenue estimates in addition to follow-up telephone and e-mail communication to clarify the information. These operating cost estimates were reviewed and compared to information from other passenger ferry services. Comments on the level of risk and uncertainty in some of the estimates are provided in Section 5.

4.1 OPERATING AND MAINTENANCE COSTS

Operating and maintenance cost assumptions and differences among the three options are summarized below.

- Hourly rates for the crew ranges from \$12 to \$22 an hour for Kitsap Transit operated vessels. WSF hourly rates for crews range from \$18 to \$38 an hour. Crew size also varies from 3 to 4 for the Kitsap Transit 150-200 passenger vessels to 5 plus a shoreside staff chief under WSF operations. This results in significantly higher labor costs under WSF operation. Overall labor costs for Kitsap Transit operations for Option 2 could be up to 67 to 78 percent higher if union wages similar to WSF operations are assumed.
- WSF would operate the Kalama or Skagit for the Seattle to Vashon route which has an assumed fuel burn rate of 81 gallons per hour. Kitsap Transit would use the Rachel Marie or St. Nicholas vessels that have assumed an average fuel burn rate of 68-75 gallons per hour. The Kitsap Transit vessels are also assumed to operate 8 hours/day compared to WSF's 10 hours/day for the triangle in Option 1. The total cycle time to make three round trips for the direct KT service can be made in four hours instead of five for WSF's triangle service.
- Maintenance and repairs can be based on cost per operating hour. WSF assumes the maintenance cost rate at approximately \$81.50 per operating hour; Kitsap Transit assumes \$30 per operating hour. This difference is primarily related to labor cost differences and higher costs for the larger WSF vessels.
- The other category of expense includes moorage/dockage fees, food and beverage, and various other supplies. The greatest expense in this category for Kitsap Transit is moorage/dockage fees and food, beverage, and merchandise costs. The food, beverage, and merchandise also generate revenue for the Kitsap Transit service as noted in Table 3.

4.2 CAPITAL COSTS

Capital costs assumptions and differences among the three options are summarized below. All capital cost information was based information received from WSF and KT.

- Capital costs for Option 1 include improvements at the Southworth and Vashon terminals to accommodate the Chinook or Snohomish. The Vashon terminal dock would need to be lengthened to accommodate the Chinook or Snohomish at a cost of \$800,000. The Southworth terminal currently only serves PVFs and would need to be modified for the Chinook or Snohomish at a cost of \$1,000,000. The capital costs also include the rebuild or modification of engines on both vessels at a cost of \$1,200,000.

- The office and administration costs (which includes administration and office staff, marketing costs, rent and utilities, and more) for the Kitsap Transit service are included in the labor and other cost categories. Administrative office labor costs do not appear to be included in WSF's labor cost estimates.
- Vessel lease costs are included in the Kitsap Transit service operating costs, but not for WSF since the proposed vessels are owned by WSF. An amortized annual cost could be included in WSF operating costs to account for the capital cost of vessels.
- Capital costs for Options 2 and 3 with WSF operating the Vashon-Seattle service include \$7,000,000 for replacement of the Skagit and Kalama which are both nearing the end of their service life.
- Capital costs for Option 2 with Kitsap Transit operating the Southworth-Seattle service also assumes \$1,000,000 for improvements to the Southworth terminal.
- Capital costs for improvements at Colman Dock to accommodate an additional PVF from Southworth were not included. Some improvements to reconfigure the vehicle holding areas would likely be needed. Off-site mitigation costs to accommodate the traffic increase in Downtown Seattle could also be required. WSF is currently leading a Colman Dock Master Plan effort that will identify future improvements, including possible improvements to the vehicle holding lanes that could accommodate the Southworth-Seattle PVF service.

Table 7. Annual Cost Revenue and Farebox Recovery Estimates for Options 1, 2, and 3 (Dollars)

	WSF OPTION 1	OPTION 2						OPTION 3			
		WSF, KT Operated			KT Operated			Seattle- Vashon	Seattle- Southworth	Southworth- Vashon	Total
		Seattle- Vashon	Seattle- Southworth	Total	Seattle- Vashon	Seattle- Southworth	Total				
		WSF	KT		KT	KT		Skagit	Issaquah	Hiyu	
Hours of Operation per Day	10	10	8	—	8	8	—	10	16	16	—
Labor	1,019,500	771,600	421,684 ¹	1,193,284	266,583 ¹	322,324 ¹	588,907	964,500	Same as Existing	1,151,284	2,115,784
Fuel	682,500	281,600	267,696	549,296	240,926	267,696	508,622	352,000	Same as Existing	144,420	496,420
Maintenance	209,500	209,500	57,024	266,524	57,024	57,024	114,048	209,500	Same as Existing	292,000	501,500
Other	179,500	179,500	323,047 ²	502,547	248,047 ²	303,127 ²	551,174	179,500	Same as Existing	276,640	456,140
Vessel lease	Not included	Not Included	300,000	300,000	240,000	300,000	540,000	Not Included	Not Included	Not Included	Not Included
Total Annual Operating and Maintenance	2,091,000	1,442,200	1,369,451	2,811,651	1,052,580	1,250,171	2,302,751	1,705,500		1,864,344	3,569,844
Annual Revenue	1,447,000	577,083	1,104,555³	1,681,638	733,899³	1,104,555³	1,838,454	921,500	Same as Existing	1,132,851	2,054,351
Annual Subsidy Amount	644,000	865,117	264,896	1,130,013	318,681	145,616	464,297	784,000	Same as Existing	731,493	1,515,493
Farebox Recovery	69%	40%	81%	60%	70%	88%	80%	54%	Same as Existing	61%	58%
Office and administration	Not Included	Not Included	Included in Labor	Included in Labor	Included in Labor	Included in Labor	Included in Labor	Not Included	Not Included	Not Included	Not included
Capital Costs (one time costs for terminal improvements and new vessels)	3,000,000	7,000,000 ⁴	1,000,000	8,000,000	0	1,000,000	1,000,000	7,000,000 ⁴	Not Included	Not Included	7,000,000

¹ Labor costs assume a 3-person crew for Seattle-Vashon and a 4-person crew for Seattle-Southworth. Direct salary costs for crew is assumed to be \$22/\$17/\$12 per hour for Seattle-Vashon and \$22/\$17/\$12 per hour for Seattle-Southworth. Employee benefit costs are assumed to be 38% of direct salary. Overall labor costs for Kitsap Transit operations for Option 2 could be up to 78% higher if union wages similar to WSF operations are assumed.

² Expense costs for food, beverage, and concession items are included in the Other category.

³ Annual Revenue for KT operated service includes \$1.00 per rider average for food, beverage, and concession sales. This totals \$156,816 for Seattle-Vashon and \$236,016 for Seattle-Southworth.

⁴ Capital cost is for vessel replacement. This cost could be converted to an annual cost to be directly compared to Kitsap Transit's assumed vessel lease cost.

5. FINDINGS AND IMPLEMENTATION RISK

The ridership and cost information from both WSF and Kitsap Transit appear to present reasonable estimates to base future decisions on POF service changes from Vashon and Southworth to Seattle. With any planning-level estimates, there is a certain amount of risk and uncertainty in some of the estimates that should be considered before a final decision is made. This section presents some of the more significant areas of uncertainty in each of the options.

5.1 OPTION 1

Option 1 provides a significant improvement over current POF service from Southworth and an estimated farebox recovery amount that is also significantly improved over today. One of the most important advantages of this option is that service to Southworth would be significantly more reliable than today when passengers must rely on a somewhat unreliable transfer to the PVF at Vashon. Service to Vashon would be similar with this option with travel time to Seattle in the morning slightly longer and travel time in the afternoon/evening slightly shorter than current service. This option also benefits from having a service provider with a long reliable history of serving this route and its unique characteristics.

Based on our limited review of information on Option 1, the most significant area of risk is the ridership estimates that are more than double today's ridership. Over time, this may be achieved, but it may take several years to grow to the assumed level of nearly 400,000 riders/year. The big question here is how much ridership from South Kitsap through Southworth will grow with the improved service. Vashon Island is a more captive and stable market with limited growth potential, but Southworth could represent a significant opportunity for growth over time.

The risk of not achieving the ridership estimates is compounded by the uncertainty of fuel prices in future years. With the rapid escalation in fuel costs this year, the assumed \$1.69/gallon cost may be low by the time this service could be operational in 1-2 years. The fuel cost risk is higher for Option 1 compared to Option 2 because the proposed 350-passenger vessels have higher fuel consumption rates than the smaller 150- and 200-passenger vessels. The combination of lower than estimated ridership and higher fuel costs could result in significantly higher subsidy levels required in early years of operation.

Finally, the flexibility to expand this service to provide midday, evening, and weekend trips is limited by the large size of the proposed vessel. The financial subsidy required to provide these off-peak trips with lower ridership potential would likely be difficult to justify in today's highly constrained funding environment. Initiating service using smaller vessels to more effectively serve the off-peak trips may not be possible under current WSF operating constraints related to crew size and staff position requirements. This limits the growth potential of Option 1 to serve non-commuter trips on the Vashon-Southworth-Seattle route.

5.2 OPTION 2

This option has the potential to achieve significantly lower financial subsidy amounts/higher farebox recovery levels than either Option 1 or 3. Option 2 also provides a significant improvement over today's service, but also provides an even better service level to both Vashon and Southworth than Option 1. Overall trip times are faster with direct service from both Vashon and Southworth to Seattle, and the shorter overall round-trip cycle time for each vessel results in a better service schedule within the AM and PM peak period.

One of the clear outcomes of examining this option is the operational efficiency and cost savings resulting from Kitsap Transit operating both routes, instead of just the Southworth-Seattle service. The overall subsidy level is considerably lower due to the efficiency gains from avoiding duplicative administrative and other direct costs. On the other hand, Option 2 with Kitsap Transit operating both routes would have the largest negative impact on current ridership and revenue on the existing WSF Fauntleroy-Vashon-Southworth PVF service.

Risks with this alternative include the potentially low fuel cost assumption of \$1.69/gallon, although this risk is not as great as Option 1 because service would operate eight hours per day instead of 10 with Option 1 and the average fuel consumption per hour on the two smaller vessels is lower than the single 350-passenger vessel. Ridership estimates could also be high since they were based on WSF's estimates for Option 1; however, the service benefits of Option 2 compared to Option 1 would give this option a better chance at meeting the ridership estimates. In addition, some of the operating cost assumptions for the privately-operated service may have a slightly higher level of risk since WSF has exclusively operated this service for many years. Two specific areas that should be closely examined are the maintenance costs which are nearly three times lower than WSF's costs, and the vessel moorage and dock costs since a definite location has not yet been secured at this planning/feasibility stage. Overall labor costs could also be low if union wages and crew size requirements similar to WSF operations are used instead of private operator wage rates and crew sizes.

The potential for future growth appears to be higher with Option 2 due to the greater flexibility for a private company to operate smaller vessels to more efficiently serve off-peak demand time periods. With added off-peak service, peak commuter service would also grow over time as riders would be offered more choices to meet their individual time schedules.

5.3 OPTION 3

This option is more difficult to compare directly to either Option 1 or Option 2 because it only modifies the long-standing Fauntleroy-Vashon-Southworth Triangle PVF route by providing a direct PVF connection from Southworth to Vashon. On the surface, this option could be a viable long-term solution to serving South Kitsap County with a direct route to Seattle; however, there are some significant policy-level questions that would need to be thoroughly evaluated before taking the next step towards implementing this option. With a narrow view on service demand and costs only, this new PVF route could have the potential to become one of the most productive and cost-effective routes in WSF's system. The cost and ridership information indicate a reasonably good farebox recovery rate due to the higher central sound fares that would be charged on this route.

The largest risk with this alternative would be its ability to be implemented. A detailed review of consistency with the Kitsap County and Seattle Comprehensive Plans was not conducted as part of this review; however, this would be an important first step in any further review of this alternative. Because of the long-standing plans to implement POF service from Southworth, there would undoubtedly be significant concern over a direct PVF on this route. Landside impacts at both Southworth and Seattle would need to be evaluated in detail to determine effective ways to accommodate the increased traffic, parking demand, and land use changes that could be caused by this service. On the other hand the Fauntleroy and West Seattle neighborhoods would benefit from the reduction of traffic, parking and vehicle queues at the Fauntleroy ferry terminal.