

DRAFT LONG-RANGE PLAN

The goal of this plan is to identify a package of service improvements, demand management strategies, LOS standards, and funding requirements that is responsive to the legislative direction included in ESHB 2358, and allows the ferry system to maximize the efficiency of existing assets while meeting the needs of local customers and communities.

There are multiple ways to build a plan, each of which includes a different set of tradeoffs with respect to who assumes system costs and how those costs are borne. For example, the ferry system could choose to do nothing other than maintain existing assets and services while allowing degradation in LOS. Conversely, the system could choose to maintain existing LOS standards while adding new services to meet growing demand, which comes at a high cost.

ESHB 2358 calls for the analysis of operational and pricing strategies to manage demand. The ferry system could focus on these strategies as a means of reducing vehicle demand so that LOS standards are maintained without the need for much additional service, which comes at a high price to the customer.

Given the current economic conditions and the scale of the funding needs that the state is facing in the highway program, in addition to the continuing ferry needs, it is unclear if the state can realistically keep up with the needs of the ferry system. It is therefore necessary to consider the implications of a future where the state takes a different role in funding the ferry system.

As a result of these challenges, the Draft Plan presents two possible visions for the future of the WSF system for consideration:

- Plan A. This option assumes that the state will continue in its current role as owner, operator, and principal funder of ferry services in the Puget Sound region. It maintains current service levels.
- Plan B. This option presents an alternative where the state takes responsibility for a core marine highway system, which is a smaller and a locally-funded entity or entities would take responsibility for a new marine transit system.

The balance of this section discusses these Plan options by presenting the key elements of the respective operating and capital programs and the overall funding implications for each.



14. PLAN A

The Plan A option starts with the assumption that WSF will continue to own and operate the current system and will build a program that meets the legislative intent of ESHB 2358, while considering the funding realities facing not only WSF, but the overall state transportation system.

14.1 Operating Program

The package of operating and pricing strategies will improve the overall effectiveness of ferry services and increase the utilization on many routes. In fact, the proposed reservation system will be such a fundamental change in how customers will make use of ferry services, that it is very difficult to estimate the actual ridership response. As a result of this, and the overall funding challenge facing WSF at this time, Plan A proposes no service expansions. There will be minor capacity improvements related to the vessel procurement program.

Proposed 2030 Service Details

The proposed 2030 vessel deployment plan is shown in Exhibit 20.

Exhibit 20
Summary of Proposed Fleet Deployment for Plan A

Proposed Fleet Deployment Plan: Plan A				
Route	# of Vessels	Fall, Winter, Spring	Shoulder	Summer
Bainbridge	2	2 Jumbo		
Bremerton	2	2 Large		1 Large 1 Jumbo
Clinton	2	1 Large 1 Medium		2 Large
Kingston	2	2 Jumbo		
Point Defiance	1	1 Small		
Port Townsend	1 or 2	1 Small	2 Small	
San Juans & Sidney	3 or 4	2 Large 1 Med. (Sidney ex. Winter)		3 Large 1 Med
Interisland	1	1 Sm. (winter)	1 Mid-Size	
F-V-S Triangle	3	3 Medium		
Total Deployed		17	18	19

Vessel class	Vehicle capacity
Jumbo	188-202
Large	144
Medium	124
Mid-Size	87-90
Small	34-64

Seattle-Bainbridge

- Two 202-car Jumbo Mark II vessels year round

Seattle-Bremerton

- With the completion of the third new 144-car vessel in 2017, this route's assignment is two 144-car vessels in the fall/winter/spring; one 144-car and one 188-car for the 14-week summer.

Mukilteo-Clinton

- Two 144-car vessels in summer, one 144-car and one 124-car in the fall/winter/spring. The first new 144 car vessel would be assigned to the route summers only starting in 2013. The second 144-car vessel would be assigned to the route year-round starting in 2015.

Edmonds-Kingston

- One 202-car Jumbo Mark II and one 188-car Jumbo Mark I year-round

Fauntleroy-Vashon-Southworth

- The current triangle service configuration would continue Vashon-Fauntleroy-Southworth.
- Three 124-car vessels would provide service on the route. One 124-car vessel currently serves the route with two 87-car Evergreen Class vessels. The Evergreen Class vessels would be retired in 2015 and 2017 and replaced on the route with 124-car vessels.

Point Defiance-Tahlequah

- This route would be served by a 64-car Island Home Class vessel on a 16 hour/day schedule, replacing the 48-car Rhododendron by 2012.

Port Townsend-Keystone

- Under this proposal, one 64-car Island Home Class vessel would be assigned to the route year round by mid-2010. A second 64-car Island Home vessel would be assigned to the route for eight hours/day in the shoulder and summer schedule periods starting in 2011.

San Juan Islands and International

Winter. Currently there is no Sidney service during the winter. Under this proposal, the San Juan Islands would be served by two 144-car vessels, one 124-car vessel, and a 64-car Island Home as the interisland boat. As with the existing winter schedule, the interisland vessel would not operate on weekends,

Potential Future Service Additions

Plan A adds modest amounts of vehicle carrying capacity to the WSF system by replacing some retiring vessels with ones that are slightly larger.

After transit enhancements, reservations, and pricing strategies are in place, WSF should re-examine their effectiveness in managing vehicle demand.

If traffic grows faster than anticipated and there is a need to add service to routes, potential improvements are:

- Adding a fourth small vessel to operate between Vashon and Southworth. This would allow the three large vessels on the Fauntleroy/Vashon/Southworth route to operate in more direct service to and from Fauntleroy, and increase the overall capacity of the route.
- Add service hours to one of the Anacortes/San Juan Islands vessels during the summer schedule to allow an additional mid afternoon sailing and a late evening sailing.
- Add service hours to one of the Port Townsend/Keystone vessels in the summer months.
- Add service hours to the Seattle/Bremerton route to close some of the gaps in the mid-day and late evening schedule.



and one of the 144-car vessels would be crewed nine hours per day Monday through Thursday.

Spring and Fall. Sidney service would be provided for one round trip per day with the 124-car vessel Chelan. Anacortes to San Juan Islands service would be provided by two 144-car vessels for 16 hours/day and with the 124-car vessel when it is not engaged in Sidney service. The 90-car Sealth would provide interisland service and is available to make one round trip to Anacortes on weekends to assist with peak weekend traffic. This vessel assignment would be implemented with the construction of the first 144-car vessel in 2013.

Summer. Two round trips to Sidney with the 124-car Chelan, three 144-car vessels would be assigned to the route from Anacortes to the San Juan Islands.

Interisland. The interisland vessel provides necessary connections between the four ferry-served San Juan Islands. By utilizing one vessel to provide interisland service, the other vessels on the route are able to be scheduled in more efficient ways to move traffic between the San Juan Islands and the Anacortes/Skagit County mainland. For instance, a mainland vessel can make up to five round trips in a 16-hour operating day if it does not have to operate on the interisland circuit; making interisland stops would reduce its overall throughput to three round trips in a 16-hour operating day.

As there is a considerable amount of truck traffic on the interisland route, and there are multiple destinations so traffic either has to turn around on the vessel or back on, it is important that the interisland vessel has a relatively unobstructed vehicle deck. For future projected winter service volumes, an Island Home class 64-car vessel should be adequate for the service. For the Spring, Summer, and Fall, however, the 90-car Sealth is proposed as an interisland vessel for several reasons:

- Unobstructed car deck for turning large interisland vehicles around instead of backing on
- Flexibility to use on Anacortes based route on weekends when interisland traffic is lower; potentially to address recreational travel sensitivity tests which indicate the possibility for higher growth rates during those time periods. This is more crucial during the shoulders and summer periods and would allow additional capacity without the addition of service hours or an additional vessel.
- Sealth would be maintained during 12-week winter schedule; also flexibility for it to relieve Island Home #3 on the Tahlequah route and the 124-car vessel on the San Juan domestic route.

- Island Home #2 from the Port Townsend route used as interisland vessel during the winter 12-week period.
- Island Home #2 would be maintained and relieves Island Home #1 during the late fall and early spring weeks.

14.2 Capital Program Needs

While the operating program is largely unchanged over the planning horizon, there are significant capital needs in both its vessel and terminal programs.

Vessel Program

WSF faces a significant fleet recapitalization requirement over the next 22 years. The fleet is among the oldest of any major ferry operator with an average vessel age of more than 34 years. The needs are significant over the next 22 years, as WSF will continue to invest in the ongoing preservation of its aging fleet as well as invest in a significant new vessel construction program to replace retiring vessels. The elements of the vessel program include:

1. Preservation
2. Improvements
3. Procurement of new vessels

Vessels Preservation. Vessel preservation needs are developed using the LCCM which identifies when assets are expected to be replaced, based on current condition ratings and an expected useful life. Plan A would:

- Fully fund the preservation needs for all assets related to the structural integrity of the vessels. This includes steel preservation, propulsion, major mechanical and electrical systems, and related communication systems. The total preservation need for these assets in the Plan A is \$504.7 million (\$'08).
- Fund preservation items that are not directly related to the structural integrity of the vessel based on actual condition ratings and strategically defer or re-scope to optimize funding needs. These preservation items include topside paint, passenger and crew spaces, and security, and total \$432.9 million (\$'08).
- To the extent possible, limit investments for vessels nearing retirement.

Vessel Procurement. The most significant capital funding need over the next 22 years is related to new vessel acquisitions to support the upcoming retirements of several aging vessels in the fleet. The proposed procurement program, summarized in Exhibit 21, includes the following elements:



- In the near term acquire three Island Home Class vessels estimated to cost a total of approximately \$226.5 million (\$'08).
- Invest approximately \$20 million in the Hyak to extend its life 20 years.
- A major vessel construction program would begin in 2012 to construct seven 144's to be delivered between 2013 and 2025. Total cost of this program is estimated to be \$991 million (\$'08).
- Throughout the 22-Year Plan the vessel procurement program will maintain a de-crewed vessel to serve as standby. The de-crewed vessel is maintained and preserved, such that it will be available for emergency backup service.

The plan proposes constructing three small 64-car vessels of the Island Home design (the contract to build the first one has been awarded) to serve routes with traffic needs and physical constraints that require a vessel of that size. These three vessels would serve the Port Townsend/Keystone route, the Point Defiance/Tahlequah route, and during the winter months, the San Juan Interisland route. As there is an immediate need to restore full service on the Port Townsend/Keystone route and retire the current vessel on the Point Defiance/Tahlequah route, these vessels should be constructed first.

Subsequent to that, it is proposed that seven larger, more universally applicable vessels be constructed to replace WSF's aging fleet. The 144-car size vessel is felt to be the most applicable on WSF routes and is the same size or larger than the vessels the new vessels would be replacing. They are also the most efficient in terms of operating costs per vehicle space, with an operating profile similar to the current Issaquah Class vessels, which are among the most efficient ships in the fleet.

This approach also provides some marginal increase in capacity on several routes in the system, and restores the system's capability of having a stand by vessel so that service can be maintained in the event of an unforeseen vessel breakdown.

The timing of construction is one new vessel approximately every two years, to allow slow and steady vessel construction opportunities for shipyards and the ability to take advantage of economies of scale in building multiples of the same vessel. This approach presents several benefits:

- A steady / constant shipbuilding rate - enables shipyards to invest in capital improvements to increase efficiency and productivity, thus lowering vessel construction costs. Doing so avoids the cost of developing a new construction capability within the Puget Sound shipbuilding sector multiple times.

- Doing so will also allow shipyards to enter into long term collective bargaining agreements with their employees further guaranteeing the development of the new construction skillset for the work force. This will enable reduced production costs through improved production efficiency.

Exhibit 21 Vessel Procurement

Year	Vessel	Notes
2010	Island Home #1	Replace a Steel Electric (Port Townsend)
2011	Island Home #2	Replace a Steel Electric (Port Townsend)
2011	Hyak reinvestment	Invest in the Hyak to extend life 20 years
2012	Island Home #3	Replace the Rhododendron (go to Point Defiance)
2013	144-car vessel #1	Replace the Evergreen State
2015	144-car vessel #2	Restore standby/reserve capacity; Hyak moved to standby
2017	144-car vessel #3	Replace the Tillikum
2019	144-car vessel #4	Replace the Klahowya
2021	144-car vessel #5	Replace the Elwha
2023	144-car vessel #6	Replace the Kaleetan
2025	144-car vessel #7	Replace the Yakima

This procurement schedule is different than the one that has been put forward previously and that had been the basis of the 2008 Legislative Financial Plan. The procurement program was developed in response to several changes in conditions, including:

1. Financial and funding challenges in the next biennial budget
2. Updated cost information from the recent Island Home and Steilacoom II bids
3. Preliminary findings and recommendations from the JTC Vessel Acquisition Sizing and Timing report

The revised program also better reflects the current and expected needs of the system, assuming a continuation of current services.

Vessel Improvements. Plan A includes approximately \$65 million over 22 years to address future vessel improvement needs. These include investments in the following three areas:

- Fuel conservation. There are approximately \$10 million in vessel investments designed to support the fuel conservation program in the 2009-11 biennium. No further investments are assumed.
- Regulatory-related improvements. This is a biennial allowance of \$2.5 million to address issues raised by regulatory compliance agencies, such as the Coast Guard or the EPA.



- Targeted improvements. This is an allowance of approximately \$2 million per biennium to address the kind of vessel investments which cannot be foreseen. An example of this type of investment is the fuel conservation investments in the 2009-11 Biennium.

Terminal Program

Terminal Preservation. The preservation projects for terminals focus on identifying the needs of continuing to operate the current service level and to maintain, preserve, and replace existing capital assets. As with vessels, terminal preservation needs are developed using a LCCM, which has been updated for current facility condition ratings and to reflect current costs of asset replacement.

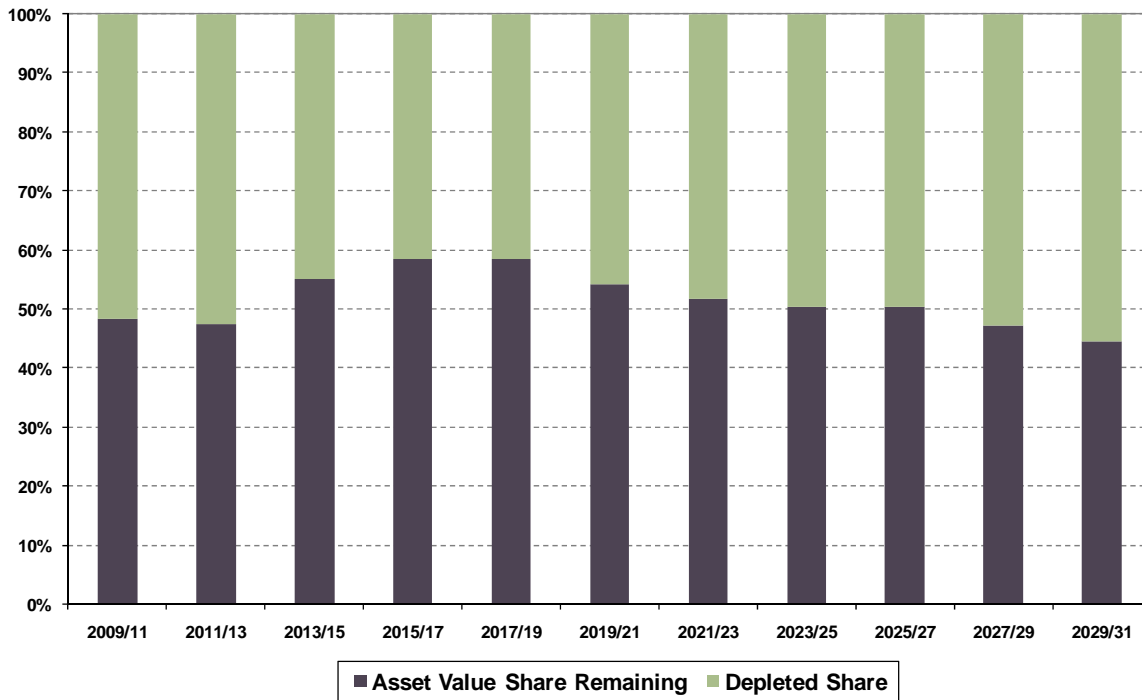
Exhibit 22 provides a brief summary of the key preservation activities at each facility:

Exhibit 22
Terminal Preservation Summary (\$ '08 millions)

Terminal	Slip Preservation	Trestle	Wingwalls & Dolphins	Buildings & OHL	Other	Total
Point Defiance	\$1.1	\$5.2	\$10.6	\$0.9	\$0.6	\$18.4
Tahlequah	\$1.1	\$6.2	\$5.1	\$0.4	\$1.2	\$14.0
Fauntleroy	\$1.9	\$48.9	\$7.1	\$1.7	\$2.2	\$61.7
Southworth	\$1.0	\$7.3	\$7.9	\$2.5	\$2.2	\$20.9
Vashon	\$2.3	\$40.5	\$18.5	\$5.2	\$1.0	\$67.4
Seattle	\$31.0	\$148.6	\$20.4	\$87.9	\$2.6	\$290.5
Bremerton	\$9.6	\$0.0	\$18.2	\$3.4	\$1.7	\$32.9
Bainbridge	\$4.1	\$0.0	\$14.1	\$13.6	\$2.1	\$33.9
Edmonds	\$0.0	\$8.0	\$1.5	\$0.0	\$2.2	\$11.7
Kingston	\$7.7	\$1.0	\$28.3	\$1.4	\$1.6	\$39.9
Clinton	\$2.0	\$0.0	\$13.0	\$2.4	\$2.8	\$20.2
Mukilteo	\$2.5	\$0.0	\$6.1	\$0.0	\$0.0	\$8.6
Keystone	\$9.9	\$0.0	\$8.5	\$0.0	\$1.9	\$20.4
Port Townsend	\$22.0	\$0.0	\$8.3	\$0.3	\$2.8	\$33.5
Anacortes	\$7.7	\$13.3	\$11.1	\$39.7	\$11.3	\$83.1
Friday Harbor	\$1.5	\$11.4	\$7.9	\$1.9	\$3.4	\$26.1
Orcas Island	\$4.6	\$6.3	\$7.3	\$1.0	\$2.8	\$22.1
Lopez Island	\$11.7	\$2.2	\$8.4	\$0.0	\$2.4	\$24.8
Shaw	\$1.3	\$3.2	\$3.8	\$0.1	\$0.5	\$8.9
Eagle Harbor	\$3.8	\$13.6	\$34.4	\$15.7	\$3.0	\$70.6
Total	\$126.9	\$315.7	\$240.6	\$178.2	\$48.1	\$909.6

As shown in Exhibit 23, the result of this level of preservation investment is that the average remaining value of the terminal asset base will fluctuate between approximately 40% and 59% throughout the planning horizon.

**Exhibit 23
Asset Value Remaining per Biennium (All Terminals)**



Terminal Improvements. The terminal improvement program proposes \$363 million in Plan A and reflects the following major elements, as shown in Exhibit 24:

- Addition of ferry-funded transit enhancements to improve transit connectivity and passenger comfort at WSF terminals.
- Addition of reservation system modifications to support the proposed reservation program.
- Improvements to maintain service and schedule reliability, such as adding overhead loading at some terminals and improving traffic circulation elsewhere to minimize terminal dwell time.
- Major terminal investments are proposed for three terminals; Anacortes, Mukilteo, and Edmonds.
- Other improvements including utility investments and drainage improvements.



**Exhibit 24
Summary of Proposed Terminal Improvement Costs
(\$'08 in Millions)**

	Transit-Related	Improve Dwell Time	Major Terminal	Reservation System			Total
				Transponder Lanes	ITS Equipment	Other	
Point Defiance	-	\$ 2.0	-	-	\$ 0.7	\$ 1.3	\$ 4.0
Tahlequah	-	\$ 2.4	-	-	\$ 0.7	\$ 1.2	\$ 4.4
Fauntleroy	-	\$ 36.4	-	\$ 1.6	\$ 0.8	\$ 0.7	\$ 39.4
Southworth	-	-	-	\$ 1.6	\$ 0.7	\$ 1.6	\$ 3.8
Vashon	-	-	-	-	\$ 0.6	\$ 7.0	\$ 7.6
Seattle	-	-	-	\$ 1.6	\$ 2.9	\$ 11.7	\$ 16.2
Bremerton	-	-	-	\$ 1.6	\$ 0.8	\$ 1.6	\$ 3.9
Bainbridge	\$ 22.4	-	-	\$ 1.6	\$ 0.9	\$ 16.2	\$ 41.1
Edmonds	-	-	\$ 26.1	\$ 1.6	\$ 1.2	\$ 1.2	\$ 30.0
Kingston	\$ 1.4	-	-	\$ 1.6	\$ 0.3	\$ 2.0	\$ 5.2
Clinton	\$ 9.3	\$ 20.7	-	\$ 1.6	\$ 1.3	\$ 3.1	\$ 36.0
Mukilteo	-	-	\$ 108.4	\$ 1.6	\$ 0.7	\$ 1.0	\$ 111.7
Keystone	-	\$ 2.2	-	-	\$ 0.6	\$ 1.2	\$ 4.0
Port Townsend	-	\$ 7.3	-	-	\$ 0.6	\$ 1.8	\$ 9.7
Anacortes	-	-	\$ 26.1	-	\$ 0.7	\$ 9.6	\$ 36.5
Friday Harbor	-	\$ 0.2	-	-	\$ 0.8	\$ 1.2	\$ 2.2
Orcas Island	-	-	-	-	\$ 0.8	\$ 0.9	\$ 1.7
Lopez Island	-	-	-	-	\$ 0.8	\$ 1.4	\$ 2.2
Shaw	-	-	-	-	-	\$ 0.8	\$ 0.8
Eagle Harbor	-	-	-	-	-	\$ 3.2	\$ 3.2
Total	\$ 33.1	\$ 71.1	\$ 160.6	\$ 14.0	\$ 15.9	\$ 68.7	\$ 363.4

The terminal improvements listed above represent a substantial capital investment in the ferry system. It is important to note that all of the projects listed above that are expected to cost more than \$5 million will be required to go through a formal pre-design process that will include a thorough cost-benefit analysis and identify the risks associated with the project before construction funding is appropriated.

The following is a brief summary of the major elements of the Terminal Improvement Program.

Transit-Related Improvements

Transit-related improvements include things like improved terminal access for pedestrians and transit vehicles (Exhibit 25 includes a complete list by terminal), which are necessary to accommodate increasing volumes of walk-on customers. These improvements are expected to cost \$33.1 million, with the majority of that cost incurred at the Bainbridge Island Terminal.

To the extent that these improvements can encourage mode shift, it reduces strain on the vehicle deck and forestalls the need to invest in additional vessels, which in addition to the significant capital expense, are also the largest source of fixed operating expense (maintenance and engine room labor).

Targeted transit enhancements that enable and encourage customers to shift modes away from single occupancy vehicles (SOV) are another key component of operating strategies. From existing resources, WSF intends to implement targeted improvements like designated Zipcar spaces at select terminals that don't require major capital investments.

Exhibit 25 includes a list of the specific proposed transit enhancements by terminal that would be funded through the ferry system's capital program. In addition to these investments, further enhancements, requiring coordination with WSDOT and local transit agencies, are necessary for full mode shift benefits. These could include: better coordinated schedules, the provision of real time information on transit departures and new/expanded transit services to better connect ferry customers with their destinations on both sides of the water.

**Exhibit 25
Proposed Transit Enhancements Funded by WSF**

Terminal	Transit Enhancement	Expected Capital Cost Borne by WSF
Bainbridge	Direct route from OHL to transit center	\$9,360,000
	Improve parking lot for pickup/dropoff	\$3,580,000
	Improve merge for exiting buses	\$5,360,000
	Improved intersection at Winslow Way for bikes and peds	\$4,060,000
Kingston	Relocate tollbooth for improved transit access	\$1,380,000
Clinton	Walkway for park n ride	\$9,310,000
		\$33,050,000

In addition to the transit enhancements WSF intends to fund, there are a number of enhancements WSF is requesting local transit agencies to undertake. Appendix F includes a complete listing by terminal of these projects.

Reservation System

A reservation system is the key adaptive management strategy included in this plan, moving vehicle queues away from the terminals and better distributing traffic. Its main terminal capital components include transponder lanes and ITS equipment at each of the



terminals. This equipment allows for fast processing of reservations and real time information available to customers.

The total capital costs of a reservation system are estimated to be \$42 million, with system costs accounting for \$12 million and terminal-related capital costs estimated at approximately \$30 million. The terminal costs include about \$16 million for ITS Equipment required at each of the terminals as well as \$14 million for transponder lanes, which assumes one lane per terminal for all terminals where the survey indicates there is a large base of repeat users. Terminals that would not have transponder lanes are those with a largely recreational ridership and/or very small numbers of riders, including: Anacortes, the San Juan Islands, Port Townsend, Keystone, Point Defiance and Tahlequah.

As discussed in Section 11 a reservation system helps to move customers with time flexibility out of the peak to better distribute demand and increase asset utilization without requiring investment in additional vessels. Because a reservation system effectively moves physical queues out of the terminal, it significantly reduces the need for costly terminal expansion and reduces queuing impacts for communities. The transponder lanes are a key component of the system because they allow people to move through the system quickly, avoiding the need for more operating staff, shortening the lead-time that must be allowed for arrivals, and providing more customer convenience.

Major Terminal Projects

Plan A includes three major terminal improvement projects. These are designed to address specific operational and facility challenges.

- Mukilteo. The Mukilteo terminal is proposed for relocation to the tank farm site just east of the current terminal. This proposal would address a number of issues that cannot be adequately addressed at the current site, including providing overhead loading, increasing holding, and removing the traffic conflicts at the existing site. The \$108 million cost will be partially offset by \$72 million of avoided preservation needs at the current facility, making the net cost of the new facility \$36 million.
- Edmonds. This Plan assumes that the Edmonds terminal will remain in its current location and that an allowance of \$26 million is included to provide multimodal connections.
- Anacortes. This proposal for Anacortes is to implement the current design for a replacement building and the associated terminal reconfiguration to improve circulation. The building replacement is necessary as a preservation matter, though the

new building will be larger and better suited to the longer wait-times that are typical at this facility, especially in the summer.

Improvements Targeting Dwell Time

This plan option proposes a number of improvements designed to maintain or improve dwell time in the terminal. These improvements would allow the ferry system to minimize terminal time and maximize throughput capacity during peak periods in order to maintain schedule reliability on routes. The type of improvements include things like overhead loading for passengers or other modifications that improve traffic flow and move customers through the terminals more quickly.

The most significant dwell time improvements are the overhead loading projects proposed for Clinton and Fauntleroy, which continue to load passengers over the auto transfer span and are among the busiest routes in the system. These improvements will also provide passenger comfort and safety benefits that will also support the transit enhancement and mode shift goals.

14.3 Funding Implications

The proposed package of services and investments will result in a significant unfunded gap of approximately \$3.5 billion, or approximately \$325 million per biennium. This is not a surprise given the reduction in dedicated tax funding for ferries. While the gap is not a surprise, the magnitude of the gap is noteworthy and reflects a significant recapitalization effort related to ageing assets, particularly with vessels. Another noteworthy point is that the funding shortfalls are almost exclusively in the capital program.

To address this need, there are only two sources of potential funding to fill the gap:

1. Reallocation or a higher share of current resources. As discussed previously, Ferries has been getting a share of general highway funds to backfill for the lost MVET since 2000. The capital funding outlook already assumes the 2008 Legislative Financial Plan level of continuing highway support, so this would likely mean higher shares of these funds or a new allocation of some other existing state, regional or local fund source.
2. New revenues. The other possible source is from new revenues, either at the state, regional or local level. This generally means new or higher taxes.

The question of where additional funding might come from is the subject of the WSTC's Ferry Funding Study, which has been a



parallel effort to the development of this plan. The WSTC is charged with identifying and recommending an approach to restoring the Ferries Division to a financially sustainable condition. The Commission will be basing its funding recommendations on the needs identified in this plan.

Operating Outlook. Providing the service level in Plan A is estimated to cost approximately \$6.5 billion over the 22-Year Long-Range Plan planning horizon. Total revenues are also estimated to be approximately \$6.5 billion, with \$5.6 billion coming from operations and the rest from dedicated tax support and a small amount from transfers from other highway funds.

Exhibit 26 Operating Funding Outlook (YOE\$ millions)

	Yr)	16-Year
Operating Revenue:		
Farebox Revenue	\$5,516	\$3,572
Miscellaneous Revenue (Concessions, etc)	\$122	\$80
Total Revenue from Operations	\$5,638	\$3,652
Operating Program:		
Vessel Costs	\$4,364	\$2,922
Terminal Costs	\$1,036	\$684
Management & Support Costs	\$1,066	\$704
Total operating program	\$6,466	\$4,310
<i>Operating revenue as % of Ferries Division cost</i>	87%	85%
Net operating income/(subsidy required)	(\$828)	(\$658)
Dedicated Ferry Taxes (Operating Account)	\$809	\$561
Administrative Transfers (Operating Account)	\$88	\$88
Estimated Subsidy Available	\$897	\$649
Net operating surplus/(deficit)	\$68	(\$9)
<i>Average per biennium</i>	\$6	(\$1)

- Ridership growth and fare increases result in an average farebox recovery rate of 87%.
- Base fare assumptions assume the revenue equivalent of the current legislative annual increases of 2.5%. Since passenger fares are proposed to grow at half the rate of vehicle fare, vehicle fares would need to grow an average of 2.8%, while passenger fares would grow at 1.4% per year to generate the same level of revenue.
- Fuel surcharges are set to cover the increased costs of fuel associated with variances in fuel costs beyond the long-term average cost of fuel (\$2.15/gallon). Based on the November 2008 forecast of fuel prices, the result the fuel surcharge is that

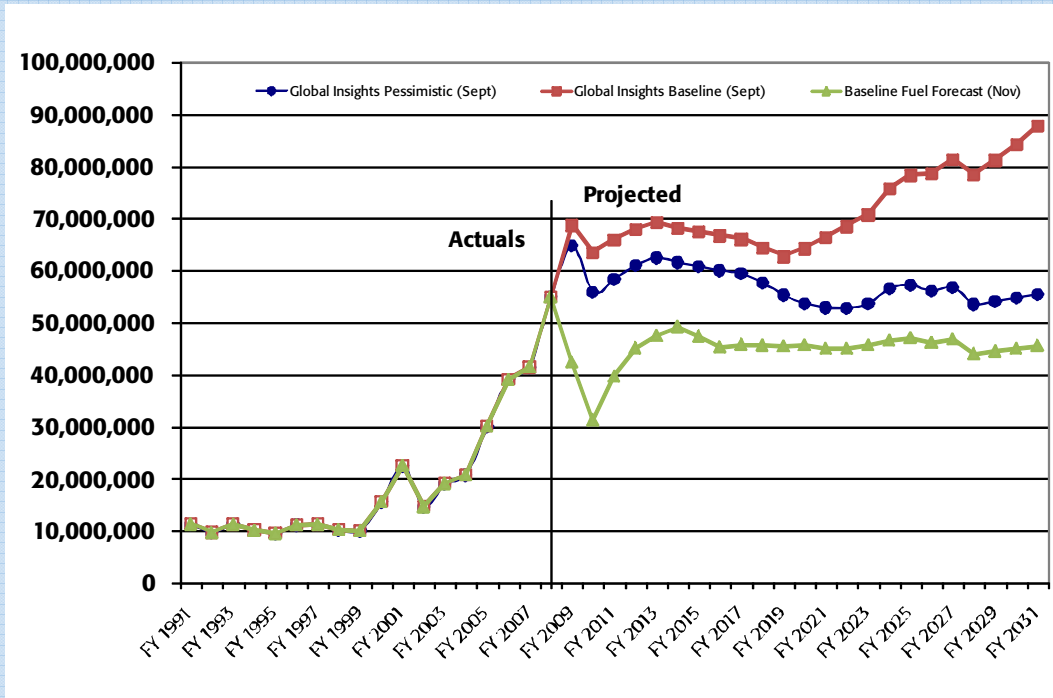
average annual fares would be increased to 3.1%, or an additional 0.6% increase over the base assumed average fare increase.

- The funding analysis assumes that WSF will continue to receive the \$88 million in support from other transportation funds over the next three biennia (per the 2008 Legislative 16-Year Plan). Following that period, no additional support is anticipated from the motor vehicle fund.

There would be considerable risk in the assumed growth in fuel prices. The costs in Exhibit 26 are based on Global Insights November 2008 baseline forecast for the 22-Year Long-Range Plan. Using this forecast decreases total fuel cost estimates by \$634 million from the September forecast. The proposed fuel surcharge would significantly eliminate the budget risk of fuel cost variability by shifting this risk to the customer who would face higher fares in the event of significantly higher fuel costs

Fuel Price Risk

The implementation of a fare charge to recover 100% of budgeted fuel costs is designed to negate any fuel price impacts to the operating funding gap. If fuel prices projections were to become higher, the fuel charge would adjust to recover the higher total fuel cost. Because of this higher fuel charge, total fare prices would also increase. To illustrate the challenge, the chart below compares historic fuel costs with projected fuel costs assuming different recent fuel forecasts



There is also considerable risk in the assumed growth in ridership. The interlocking reasons for the declines in ridership from 2000 through 2006 (fare increases, increased telecommuting, rising gasoline prices, economic conditions, etc.) are not well understood.

- The baseline ridership forecast assumes an approximately 36% increase in ridership by 2030 (over 2006 ridership levels).
- If baseline ridership is lower, then demand pressure to improve services will be reduced. Also, lower ridership would mean lower fare revenues, which would increase the operating funding gap.

Capital Outlook. The capital program proposed for Plan A is estimated to total \$6.1 billion over the 22-Year Long-Range Plan horizon. To fund the capital needs of the Draft Plan will require \$3.6 billion more than current assumed funding, which includes:

- Transfers from the Motor Vehicle and Multimodal Accounts in the 16-Year Plan (continued through 2031).
- Bond proceeds as per the 2008 Legislative Financial Plan.
- Since the operating program is balanced, the capital needs represent the total funding gap over the next 22 years for Plan A.

Exhibit 27 Capital Funding Outlook (YOE\$ millions)

	LRP (22-Yr)	16-Year
USES OF FUNDS		
Terminals Preservation	\$1,412	\$1,001
Vessel Preservation	\$1,543	\$990
New Vessel Construction	\$1,793	\$1,517
Terminal & Vessel Improvements	\$613	\$525
Existing Debt Service	\$212	\$212
Miscellaneous Uses	\$544	\$366
Total core capital program	\$6,118	\$4,612
SOURCES OF FUNDS		
Dedicated tax distributions to Ferries	\$829	\$685
Administrative Transfers	\$1,126	\$736
Federal Funds	\$347	\$259
Bond Proceeds	\$241	\$241
Total Sources	\$2,543	\$1,921
Net Funding Balance/(Shortfall)	(\$3,575)	(\$2,690)
<i>Average per biennium</i>	(\$325)	(\$336)

Note: Capital costs are escalated to year-of-expenditure dollars based on an escalator equal to double the forecast Implicit Price Deflator (average approximately 3.9% per year).

15. PLAN B

The goal of Plan B is to develop a service and investment plan that would support a core marine highway system in order to minimize the capital funding needs of the system. Plan B would require a very different approach to ferry service, with the state providing and maintaining the core marine highway system and coordinating with local agencies for provision of marine transit.

Since the funding problem is essentially a capital funding challenge, the key question is how large of a capital plan can WSF maintain, preserve, and replace over time, given a particular capital funding level. Considering the current condition of the asset base and looking at the magnitude of Ferries future capital needs that are concentrated in vessel preservation and procurement of new replacement vessels, it is clear that to significantly reduce capital expenditures over the next 22 years will require shrinking the size of the fleet.

However, shrinking the fleet would necessitate real service cuts, as vessels will need to be pulled from service. Since WSF is a part of the state highway system, scaling back service is not a simple matter of reducing until the costs fit within a budget.

Therefore, to meet the goal of this plan option, it was necessary to develop criteria to determine just where and how to cut services in a way that would be consistent with preserving a core highway system. To accomplish this, Plan B was developed by starting with Plan A and then strategically eliminating elements in order to reduce capital funding requirements. Factors that were used to identify what would be eliminated include:

- Continue serving all current domestic destinations
- Consider opportunities for synergy with the PSRC recommended passenger-only routes, other locally-provided transit services, and/or other state transportation investments in highway capacity
- Reduce services in corridors where there are alternatives for ferry customers, preferably other ferry alternatives
- Financial performance of a route
- Capital funding needs of terminals

Local Passenger-Only Services

One of the criteria used in choosing how to reduce state ferry service was the potential availability of local passenger-only ferry (POF) service. There has been a strong interest in POF services in the Central Puget Sound region for more than 20 years. The latest major POF planning effort was undertaken in this year by the Puget Sound



Regional Council, when they funded a regional PSRC passenger-only ferry study. This study confirmed that the most promising cross-sound candidate routes are:

- Seattle-Southworth
- Seattle-Kingston
- Seattle-Bremerton

The PSRC is still completing this effort, but there is an expectation that in early 2009, the full Board will act on the recommendations of the study and state that the region has a strong policy interest in passenger-only services and that it should be a key element of the Destination 2040 regional transportation plan update.

Combining a possibly renewed interest in new POF routes with the Seattle-Vashon service that King County recently took over from WSF, there is the potential for a significant marine transit expansion in the Central and South service areas. One might even envision a scenario where a robust POF service on these routes in concert with the remaining WSF passenger-auto vessel service might be a preferred overall package of ferry options for foot passengers.

Local counties already have the funding and governance structure in place with the recently enacted ferry district legislation. This is the mechanism by which King County has been able to step in and take over the Seattle-Vashon service, once the Legislature determined that WSF should not be in the POF business.

In fact, the scenario presented in Plan B is not unlike the circumstances around which the Vashon POF was transitioned over to King County, albeit on a much larger scale.

15.1 Operating Program

The Plan B operating program starts with the current service levels and would make the following changes:

2009-2011 Biennium. During the next biennial budget period, reduce services as follows:

- Terminate the Anacortes-Sidney route in September 2009.
 - San Juan Islands (Winter/Spring/Fall) – Two supers on the mainland runs and Sealth on the Interisland.
 - San Juan Islands (Shoulder/Summer) – Above service with an additional super on mainland runs.
- Downsize the Point Defiance-Tahlequah route by substituting the Hiyu and retiring the Rhododendron.
- Keep Port Townsend-Keystone a 1-boat operation.

2011-2013 Biennium. During the second biennium of the plan, reduce services as follows:

- Reduce Bremerton to only 1 boat.
- Eliminate night service on Bremerton and Edmonds routes.
- Reduce service in Triangle to two medium vessels (2 medium vessels between Fauntleroy and Vashon, sharing with Southworth with a two-boat schedule.

2013-2030 Biennia. Subsequent service changes are tied to vessel replacements. With construction of two small vessels in 2021 and 2023:

- The Sealth would be replaced on the interisland route in the fall/winter/spring months and reassigned to the Fauntleroy route.
- The Kitsap would return to the Bremerton route and replace a super class vessel, allowing the Elwha to be retired.

The net effect of these changes is a reduction in total service hours of approximately 17%, but with the exception of the International route all current routes in the system maintain ferry services. The big savings from these service cuts come in two parts: (1) the service can be provided with a fleet of 17 vessels (5 fewer than under Plan A); and (2) generally the routes that have been cut are also relatively poor financial performers or the proposed service reductions are during low productivity periods.



Exhibit 28 Summary of Proposed Fleet Deployment for Plan B

Route	# of Vessels	Proposed Fleet Deployment Plan: Plan B		
		Fall, Winter, Spring	Shoulder	Summer
Bainbridge	2	2 Jumbo		
Bremerton	1	1 Medium		1 Jumbo
Clinton	2	2 Medium		
Kingston	2	2 Jumbo		
Point Defiance	1	1 Small		
Port Townsend	1	1 Small		
San Juan Islands	2 or 3	2 Large	3 Large	
Interisland	1	1 Small		1 Mid-Size
F-V-S Triangle	2	1 Medium		2 Medium
		1 Mid-Size		
Total Deployed		14	14	15

Vessel class	Vehicle capacity
Jumbo	188-202
Large	144
Medium	124
Mid-Size	87-90
Small	34-64

15.2 Capital Program

The capital program needs in Plan B have been significantly reduced. The following are the key assumptions about the Plan B capital needs.

Vessel Program

Vessels Preservation. The Plan B vessel preservation program is based on the same preservation standards as those used to develop the Plan A program. However, preservation needs are reduced from Plan A based on the following changes:

- Early retirements for several vessels results in a net reduction in preservation needs.
- By not replacing several retiring vessels, there are no new preservation investments needed for these vessels.

Vessel Procurement. The most significant capital savings in Plan B come from a reduced vessel procurement program. Instead of a 10-vessel procurement, Plan B would require a 5-vessel procurement plan. The proposed procurement program, summarized in Exhibit 29, includes the following elements:

- In the near term acquire only one Island Home Class vessel estimated to cost a total of approximately \$84 million (\$'08).

- Invest approximately \$20 million in the Hyak to extend its life 20 years.
- In the 2019-2021 timeframe acquire two small vessels, the first to replace the retiring Elwha and the second to retire and replace the Hiyu.
- The 144-car vessel program is reduced from seven vessels to just two and would not start until 2022 Total cost of this program is estimated to be \$ million (\$'08).

Exhibit 29 Vessel Procurement Plan for Plan B

Year	Vessel	Notes
2010	Island Home #1	Replace a Steel Electric (Port Townsend)
2011	Hyak reinvestment	Invest in the Hyak to extend life 20 years
2021	Small Vessel #1	Replace the Elwha
2023	Small Vessel #2	Replace the Hiyu
2025	144-car vessel #1	Replace the Kaleetan
2027	144-car vessel #2	Replace the Yakima

Vessel Improvements. To be conservative, Plan B includes the same \$65 million over 22 years to address future vessel improvement needs.

Terminal Program

Terminal Preservation. Since WSF will continue to provide services to all of its current terminal facilities, there are not expected to be any savings to the terminal preservation program. Thus, Plan B is estimated to have the same \$909 million ('08\$) preservation needs.

Terminal Improvements. The terminal improvement program for Plan B does propose some reductions from the \$296 million list of projects in Plan A. The following are the key terminal improvement facility assumptions:

- No change to the transit enhancement and reservation investments. With a smaller system, it will be even more important to be able to offer a high quality service and to support demand management objectives.
- No changes from Plan A to the major terminal projects at Mukilteo, Edmonds, and Anacortes.
- Dwell time improvements are eliminated, saving approximately \$70 million.



15.3 Funding Implications

The reductions of service and fleet have a significant impact on the overall funding needs of the system.

Operating Outlook. As shown in Exhibit 30, the operating costs for Plan B are estimated to be \$5.4 billion over the 22-Year Long-Range Plan horizon. Plan B operating revenues are estimated to be \$5.2 billion over the same period, leaving only \$178 million to be funded from the dedicated operating subsidy. With dedicated tax subsidies of almost \$900 million, there is an estimated cumulative tax subsidy surplus in the operating account of approximately \$719 million at the end of the planning period available to transfer to capital needs.

Exhibit 30
Operating Funding Outlook (YOE\$ in millions)

	LRP (22-Yr)	16-Year
Operating Revenue:		
Farebox Revenue	\$5,122	\$3,329
Miscellaneous Revenue (Concessions, etc)	\$122	\$80
Total Revenue from Operations	\$5,243	\$3,409
Operating Program:		
Vessel Costs	\$3,614	\$2,450
Terminal Costs	\$933	\$619
Management & Support Costs	\$874	\$584
Total operating program	\$5,421	\$3,654
Operating revenue as % of Ferries Division cost	97%	93%
Net operating income/(subsidy required)	(\$178)	(\$245)
Dedicated Ferry Taxes (Operating Account)	\$809	\$561
Administrative Transfers (Operating Account)	\$88	\$88
Estimated Subsidy Available	\$897	\$649
Net operating surplus/(deficit)	\$719	\$404
<i>Average per biennium</i>	\$65	\$51

- Ridership growth and fare increases result in an average farebox recovery rate of 97%.
- As with Plan A, the fare increases are assumed to match current legislative financial plan assumption of average annual increases of 2.5%. In addition, fuel surcharges are set to cover the increased costs of fuel associated with variances on fuel prices beyond the long-term average cost of fuel.
- The funding analysis assumes that WSF will continue to receive the \$88 million in support from other transportation funds over the next three biennia (per the 2008 Legislative 16-Year Plan).

Following that period, no additional support is anticipated from the motor vehicle fund.

- Relative to Plan A, operating costs have been reduced by approximately 18%, while operating revenues have been reduced by approximately 7%. As a result, with the same fare policy as Plan A, Plan B is almost fully supported by operating revenues.
- The high farebox recovery rate results in a net surplus from operations of \$719 million, allowing for some transfers of dedicated operating taxes to help fund the capital program.

Capital Outlook. The capital program proposed for Plan B is estimated to total \$4.7 billion over the 22-Year Long-Range Plan horizon. To fund the capital needs of the Draft Plan will require \$2.12 billion more than current assumed capital funding, which includes:

- Transfers from the Motor Vehicle and Multimodal Accounts in the 16-Year Plan (continued through 2031).
- Bond proceeds as per the 2008 Legislative Financial Plan.
- The capital funding gap is somewhat back loaded with several vessel procurements in the final six years of the plan. As a result, the 16-year funding gap is only \$1.1 billion or almost half of the full 22 year gap.

If the potential transfers of operating tax subsidies that are available from the operating account surplus are included, the overall net funding gap for Plan B is approximately \$1.4 billion. By looking at only the first 16 years, the overall funding gap is half as much at approximately \$743 million.



Exhibit 31
Capital Funding Outlook (YOE\$ millions)

	LRP (22-Yr)	16-Year
USES OF FUNDS		
Terminals Preservation	\$1,412	\$1,001
Vessel Preservation	\$1,223	\$820
New Vessel Construction	\$748	\$231
Terminal & Vessel Improvements	\$526	\$437
Existing Debt Service	\$212	\$212
Miscellaneous Uses	\$544	\$366
Total core capital program	\$4,665	\$3,068
SOURCES OF FUNDS		
Dedicated tax distributions to Ferri	\$829	\$685
Administrative Transfers	\$1,126	\$736
Federal Funds	\$347	\$259
Bond Proceeds	\$241	\$241
Total Sources	\$2,543	\$1,921
Net Funding Balance/(Shortfall)	(\$2,121)	(\$1,147)
<i>Average per biennium</i>	(\$193)	(\$143)

Plan B still shows a capital funding gap, even after the significant reductions in service and capital investments discussed above. To close this gap will require additional revenues, higher fares or additional service and investment reductions or some combination of thereof. It is important to note, that further service reductions that might make a meaningful impact on the funding gap will require closing some domestic routes.

Environmental Considerations

An analysis of the potential plan-level environmental impacts from implementation of the long range plan was conducted and is documented in Appendix I.

For the analysis, the study area was defined as within the WSF system in the Puget Sound, which includes the 19 terminal locations and service communities of Kitsap, King, Island, Pierce, Skagit and San Juan Counties.

The Environmental Evaluation addresses the following topics:

- Why a planning level environmental review was conducted,
- The role of planning-level environmental review in the planning development process,
- The natural conditions or cultural elements that might be affected by long range plan implementation,
- The potential environmental issues and solutions associated with options in the plan,
- The anticipated environmental impacts and mitigation associated with projects identified in the Ferries' capital plan,
- The outreach process in developing the plan