

Washington State Ferries Financing Study

Executive Summary



Prepared For:

Joint Transportation Committee
Washington State Legislature

Consultant Team:

Cedar River Group, LLC
Mirai Associates
Norway Hill Development
RL Collier Company

January 2007

Executive Summary

Washington State Ferries (WSF) is at an important financial crossroads. Voters' repeal of the Motor Vehicle Excise Tax (MVET) in 1999 significantly reduced revenues. This revenue reduction led to the need for ferry fare increases, which caused a ridership decline of 10 percent.

The 2006 Legislative Session directed the Joint Transportation Committee (JTC) to study the ferry system's finances, in order to facilitate legislative policy discussions and decisions. The study was conducted by consultants and legislative staff. To guide the study, the JTC created a Ferry Finance Advisory Committee.

Overview

WSF is both part of the state highway system and a mass transit provider. WSF operates ten ferry routes within seven travel sheds in Puget Sound and the San Juan Islands. The travel sheds are distinct, differing in ridership characteristics, vessel and terminal capacities, and service areas. The ferry system includes 28 vessels, 20 terminals, and a repair facility.

Ridership. In fiscal year 2005, WSF had 23.9 million riders. Forty-five percent were vehicle drivers and 55 percent passengers. WSF's Draft Long Range Strategic Plan 2006-2030 projects ridership increasing 68 percent with current service, or 88 percent with proposed service improvements.

Finances. WSF operating revenues are primarily from fares. Concessions and other earned revenue and dedicated tax support also provide operating revenue. The Long Range Plan projects an operating surplus of \$925.5 million, which it assumes is transferred to the capital program. The Long Range Plan anticipates a capital program of \$5.6 billion. Capital funding is from dedicated motor vehicle fund support, discretionary legislative appropriations from this fund, Nickel and Transportation Partnership Act funding, and transfers from the operating budget. These sources do not fully finance the capital program, with \$410.7 million unfunded.

Farebox Recovery. The 2001 Joint Legislative Task Force on Ferries recommended a target systemwide farebox recovery rate of 80 percent. WSF's FY 2005 farebox recovery rate was 76 percent. The Long Range Plan projects the rate growing to 109 percent by 2030.

Ferry Finance Decision Model

WSF bases its planning on the premise that operations and demand for ferry service drive fleet size and deployment, which in turn drive its terminal and repair facility planning. The consultants propose adding a step to examine pricing and operational strategies as a means of managing demand. WSF's long range operating and capital financial needs are based on the resulting service plan and need for investment in vessels and shoreside facilities. The ferry finance decision model would have six steps, as follows.

Step 1. Demand

Ridership projections are the basis for WSF's financial plan. WSF projects ridership using two models: an econometric demand model for near term revenue forecasting and a network-

based travel demand model for its Long Range Plan. The econometric model forecasts a 24 percent ridership increase by 2023, and the travel demand model a 56 percent increase. The two models provide different and important information for WSF planning. The consultants recommend that their results be reconciled so that a consistent projection is used for both short and long-term planning. Until then, the consultants recommend relying on the econometric model for capital investment decisions.

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WSF has a level of service standard that measures its ability to fill the projected ridership demand. The Washington State Transportation Commission (WSTC) established the level of service standard in 1994. The standard is based on PM peak traffic. WSF's Draft Long Range Strategic Plan found that walk-on passenger service demand could be met through 2030, except for the most congested sailing on the Bainbridge Island-Seattle route.

The need for increased vehicle capacity is driving the proposed vehicle and terminal capacity increases in the Draft Long Range Plan. WSF has ample capacity in non-peak periods for vehicles as well as passengers. The Long Range Plan assumes non-WSF providers will meet the demand for passenger-only ferry service in the Central and South Puget Sound travel sheds. The consultants recommend reviewing the 1994 level of service standards for vehicles.

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The consultants recommend adding a third step in the ferry finance decision model: Consider pricing and operational changes to manage demand by encouraging riders to walk on or, if driving, to drive on in non-peak periods. These opportunities may differ by travel shed. WSF should conduct a thorough review of potential operational and pricing strategies.

Step 4. Vessel Acquisition and Deployment

WSF's vessel acquisition and deployment received considerable review in previous legislative studies, and were not a focus of this study. The consultants note that the vessel acquisition plan in the Draft Long Range Plan is appropriately designed to be flexible with actual ridership experience.

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WSF uses a very broad definition of preservation, which makes limited differentiation between the preservation and improvement program. This is important in view of the 2001 Joint Legislative Task Force on Ferries recommendation that the legislature give priority in funding to preservation projects. WSF's preservation budget is based on the Task Force recommendation to have 90 to 100 percent of its vital systems and 60 to 80 percent of its non-vital systems operating within their life-cycle by 2011 (now extended to 2015).

The consultants recommend developing a terminal condition rating system and using that, instead of the life-cycle cost model, as the preservation performance measure. The consultants found that a high percentage of expenses in the preservation program do not increase the life of structures or systems. In addition, systemwide projects, such as administrative overhead, are placed in the preservation program, resulting in overstated expenses for preservation. The review also found that replacement projects in the preservation program are very similar to

improvement projects, and recommend combining these two project categories to facilitate and better inform legislative review of these projects.

Terminal design standards result in large and expensive vehicle holding areas. The consultants recommend developing a way to stagger terminal projects with actual ridership. The consultants also recommend that WSF use a systematic project cost-benefit analysis and life-cycle costing approach (i.e. looking at total operating, capital and preservation cost of a project over its projected life) for terminal development, and identify costs related to community concerns and the development of multi-modal facilities for joint use with other transit agencies.

6. Financial Plan

Operating. The legislative staff and consultants' review of WSF's operating budget notes WSF's high dependence on earned revenue, mainly from fares. Also, the consultants' analysis indicates that excess operating revenues will not be available to transfer to capital in the magnitude contemplated. The consultants also note that such transfers appear counter to the purpose of dedicating tax support to ferry operations. The consultants conclude that between labor and fuel costs, WSF management has little opportunity to control operating costs effectively.

Capital. The amount of necessary capital funding cannot accurately be determined until the ridership, level of service, and pricing and operational strategy reviews are complete. WSF will also need to improve the terminal life-cycle cost model and/or develop a terminal condition rating system before accurate terminal preservation capital requirements can be determined. The consultants note that the capital funding available from dedicated tax sources (\$793 million through 2021) is inadequate to fund the probable magnitude of WSF's capital program. The gap in capital funding is likely to be the largest financial problem facing WSF.

Recommendations

The following recommendations to the legislature are based on the proposed ferry finance decision model as a framework for legislative policy discussions and decisions.

Recommendations

Overarching	1. Use the ferry finance decision model to frame legislative reviews and authorizations.
	2. Recognize travel shed differences.
	3. Separate operating and capital finances.
	4. Recognize the importance of fares to generate revenue and affect demand.
	5. Encourage off-peak ridership increases.
Ridership Projection	6. Require reconciliation of short and long-term ridership projections.
	7. Conduct an independent review of projected ridership.
	8. In the interim, use the econometric model projections of ridership for capital decisions.
	9. Require a market survey of recreation users and vehicle drivers.
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Vessel Acquisition and Deployment	14. Tie vessel acquisition decisions to ridership.
Terminal and Repair Facility Plans	15. Clarify capital project definitions. <ul style="list-style-type: none"> a. Capital – substantially extends the life of an asset or constructs new asset b. Preservation – substantially extends the life of an asset c. Improvement – changes or improves asset to meet service levels or constructs new asset 16. Revise terminal preservation program. <ul style="list-style-type: none"> a. Require development of a terminal condition rating system as the basis for the terminal preservation capital program. b. Ensure that expenses are properly allocated to the terminal preservation program. 17. Condition approval of terminal improvement projects on the independent reviews of ridership, vehicle level of service standard, and pricing and operational reviews. 18. Conduct independent review of terminal design standards. 19. Require a pre-design study on terminal improvement projects over \$5 million for review by OFM and legislative transportation committees. 20. Require WSF to identify costs to meet local concerns and to provide joint use transit facilities.
Operating Financial Plan	21. Revise operating fund policies. <ul style="list-style-type: none"> a. Do not plan transfers from the operating fund to support capital. b. Use a special surcharge that goes directly to capital, if fares are to support capital. c. Allow greater fund balance in the Puget Sound Ferry Operations Account. d. Balance operating fund with earned revenues and dedicated tax support. 22. Revise tariff setting directions and policies. <ul style="list-style-type: none"> a. Amend RCWs to provide more specific direction on tariffs b. Require a market survey in setting tariffs. c. Direct the Washington State Transportation Commission to examine the role of the Tariff Policy Committee. d. Require more accurate cost projections for development of tariffs e. Recognize that operating costs will likely exceed the assumed 2.5 percent per year fare increase rates in the 2007-21 time period. f. Review one-way fare collection system.
Capital Finance Plan	23. Recognize likely shortfall in capital funding.

Performance Measures

The consultants recommend key performance measures under the ferry finance decision model that are related to the state's proposed mobility, preservation, and stewardship goals. The table below shows the relationship between these recommended performance measures and the proposed state goals.¹

¹ Concurrent with the Ferry Finance Study, the legislature authorized a study on the Alignment of Benchmarks and Goals for Washington State's Transportation System which recommended the listed statewide goals among others.

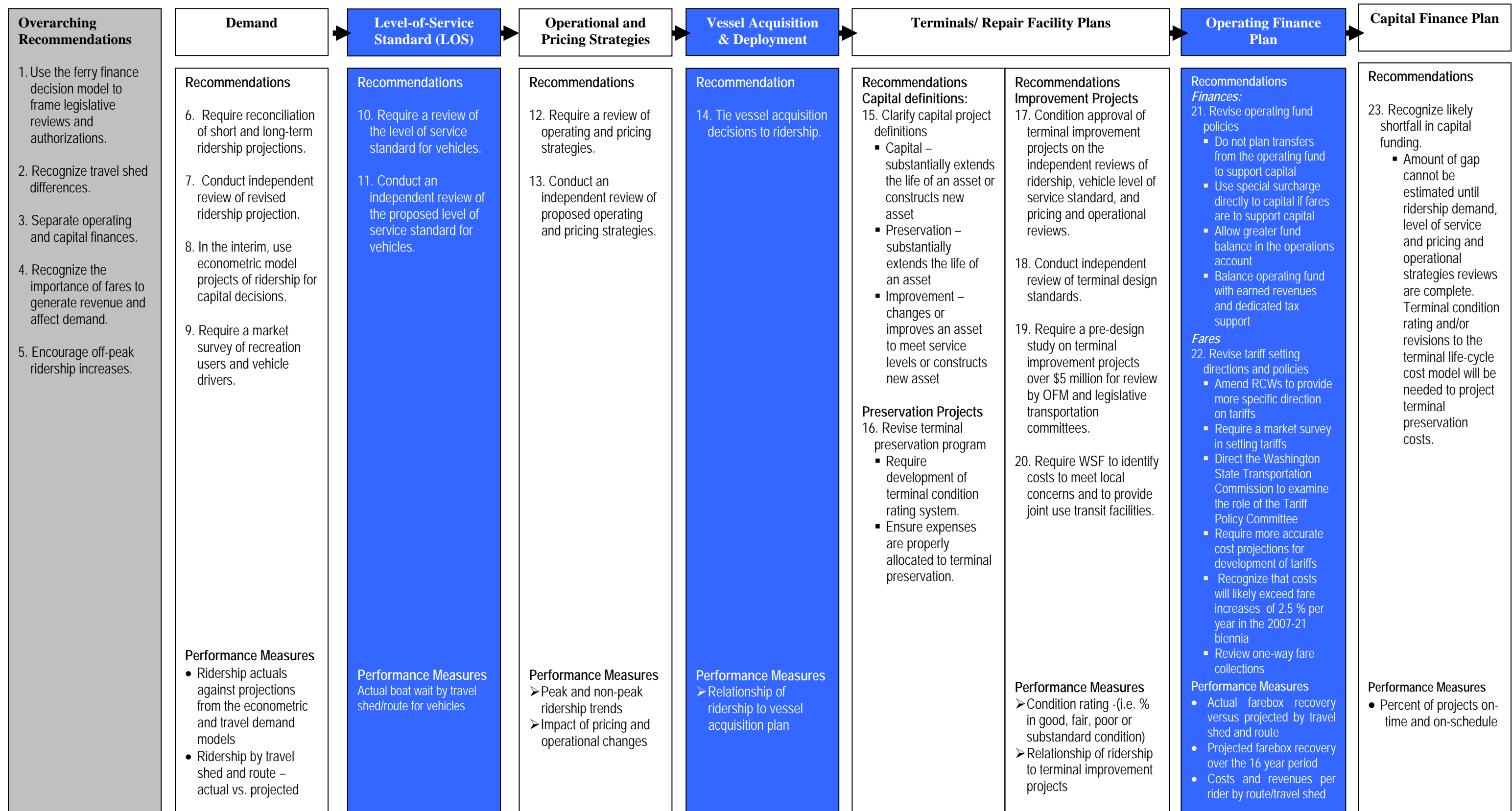
Proposed Ferry Performance Measures

Statewide Goal	Ferry Finance Model	Proposed Performance Measure
Mobility	Demand	Ridership Measures <ul style="list-style-type: none"> Ridership actuals against projections from the econometric and travel demand models Ridership by travel shed and route – actual vs. projected Peak and non-peak ridership trends Impact of pricing and operational changes Relationship of ridership to vessel and terminal capital plans
Mobility	Level of Service Standard	Level of Service Standard Measures <ul style="list-style-type: none"> Actual boat wait by travel shed/route for vehicles
Stewardship	Operating Financial Plan	Farebox Recovery Measures <ul style="list-style-type: none"> Actual farebox recovery versus projected by travel shed and route Projected farebox recovery over the 16 year period of the legislative financial plan Unit Costs and Revenues <ul style="list-style-type: none"> Costs and revenues per rider per route and travel shed
Stewardship	Capital Financial Plan	Capital Project Measures <ul style="list-style-type: none"> Percent of projects on-time and on-schedule
Preservation	Terminal & Repair Facility Plan	Condition Rating Measures <ul style="list-style-type: none"> Condition rating (i.e., percentage in good, fair, poor, or substandard condition)

FERRY FINANCE DECISION MODEL: KEY FINDINGS

Demand	Level-of-Service Standard (LOS)	Operational and Pricing Strategies	Vessel Acquisition & Deployment	Terminals/ Repair Facility Plans		Operating Finance Plan		Capital Finance Plan
<p>Key Findings</p> <ul style="list-style-type: none">➤ Seven distinct travel sheds/ferry markets➤ Two travel models➤ Travel Demand Model (TDM)–used for long-range plan➤ Econometric Model (EM)– used for revenue forecast➤ TDM projects 25% higher ridership than EM by 2023 (main difference passengers)➤ TDM overstates cross-sound demand by understating Tacoma Narrows Bridge use➤ TDM assumes constant auto operating costs➤ EM updated more frequently➤ TM based on peak period projection extrapolation to annual demand➤ Origin and destination study being updated in 2006➤ Neither model provides information on recreational users➤ Need better information on vehicle drivers	<p>Key Findings</p> <ul style="list-style-type: none">➤ LOS set in 1994<ul style="list-style-type: none">▪ Walk-on – no wait▪ Vehicles – 1- 2 boat wait▪ San Juans – daily & seasonal➤ Planning for service additions is for peak-of-the-peak runs for passengers➤ Planning for service additions is for peak period (4-hour PM) for vehicles➤ Under TDM projections, WSF can meet walk-on demand through 2030➤ Non-WSF passenger-only ferry service on Vashon & Kingston to Seattle routes is key to meeting walk-on demand➤ Draft Long-Range Plan service and capital improvements are driven by vehicle demand➤ Ample capacity in non-peak periods for vehicles	<p>Key Findings</p> <ul style="list-style-type: none">➤ WSF has not thoroughly reviewed traffic demand strategies or operational changes to reduce peak vehicle demand➤ Options to be explored range from pricing strategies to reservation systems➤ Analysis of these options requested by cities reviewing terminal Environmental Impact Statements➤ 1998 Joint Legislative Audit and Review Committee Performance Audit recommended similar analysis➤ Operational and pricing strategies need to recognize travel shed differences	<p>Key Findings</p> <ul style="list-style-type: none">➤ Prior studies largely on vessels➤ Current Fleet - 28 vessels➤ Plan through 2030 is to sell or retire 14/acquire 14 vessels➤ Acquisition of 4 new 144-vehicle vessels authorized in current capital plan➤ Other vessel acquisitions flexible with actual ridership – plan to acquire in two more groups➤ All vessels to be acquired are planned as 144-vehicle vessels	<p>Key Findings</p> <ul style="list-style-type: none">➤ Little review in prior studies➤ Area of legislative concern➤ Definitions of project categories (i.e. , preservation and improvement) overlap and create confusion <p>Preservation Projects:</p> <ul style="list-style-type: none">➤ Life-cycle ratings key justification➤ 58% of the 2005-07 preservation budget affects rating➤ Life-cycle cost model needs improvement<ul style="list-style-type: none">▪ Not updated for condition▪ does not reflect life of steel & concrete structures▪ includes systems that are not replaced➤ Replacement preservation projects are similar to improvement projects➤ All system-wide projects attributed to preservation which overstates preservation program➤ Some preservation projects include maintenance items➤ Condition reports indicate terminals are in good condition	<p>Improvement Projects:</p> <ul style="list-style-type: none">➤ Based on existing ridership projections, level of service standard➤ Unlike vessels, not flexible with actual ridership➤ Design for vehicle holding areas uses terminal design standard level of service that results in holding areas larger than boat wait standard➤ Terminal building designs for walk-on facilities based on most congested sailing level of service standard➤ Operating costs will be higher for larger terminals – need life-cycle cost analysis➤ Project cost-benefit analysis limited<ul style="list-style-type: none">▪ Particularly important for over water structures➤ Plans for concessions need business plans and caution given inherent risks➤ Funding for full build out of major terminals not available➤ WSF incurs capital costs to meet local needs➤ WSF incurs capital costs to provide joint use multi-modal facilities	<p>Key Findings</p> <p>Finances:</p> <ul style="list-style-type: none">➤ 75% of income from farebox➤ Transfers to capital in legislative plan include all dedicated taxes & some fare and other earned income in out years - \$518 million (05-21)➤ Minimum fund balance of \$5 million in operating account <p>Farebox Revenue:</p> <ul style="list-style-type: none">➤ Revenue growth projected 6% to 11% per biennium (2005-21)➤ Tariffs up 62% 2001-06➤ Assume 2.5% annual increases 2007-21➤ 75% of farebox from vehicles➤ Complex ticket structure with 2,500 ticket types➤ Tariffs set by WSTC with Tariff Policy Committee (TPC) using tariff route equity policy➤ Broad legislative direction on tariffs➤ One-way fare collection may reduce revenues <p>Farebox Recovery:</p> <ul style="list-style-type: none">➤ 2005 – 76 %➤ Labor agreements not in 2005 recovery rate➤ Need to set by travel shed/route	<p>WSF Expenses:</p> <ul style="list-style-type: none">➤ Labor is 60% of total costs➤ 92% of staff is union➤ Labor agreements drive extra costs, including:<ul style="list-style-type: none">▪ 8-hour minimum call▪ extra vessel staffing beyond Coast Guard requirements▪ Overtime – double pay▪ Travel time▪ Penalty pay▪ Non-pay provisions▪ Passes for employees, family, retirees & retiree families➤ Fuel 21% of costs➤ High fixed cost of operation for vessels➤ Need projection of costs by travel shed and route <p>Impact of Cost Changes:</p> <ul style="list-style-type: none">➤ Net increase in costs from new fuel forecast & labor agreements & settlements➤ Reduce transfer to capital to \$420 million➤ Labor settlements not projected beyond 07/09➤ Unlikely transfer from operating available	<p>Key Findings</p> <p>Finances (2005-21):</p> <ul style="list-style-type: none">➤ Dedicated revenues – 12% of funding➤ Nickel & TPA – 18%➤ Discretionary Motor Vehicle Fund – 26 %➤ Transfer from operating – 19% <p>Shortfall:</p> <ul style="list-style-type: none">➤ Shortfall in capital funding➤ Size of shortfall cannot be determined <p>Prioritization:</p> <ul style="list-style-type: none">➤ Need for clearer prioritization process

FERRY FINANCE DECISION MODEL: RECOMMENDATIONS



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Final Report



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Mobility	Demand	Ridership Measures <ul style="list-style-type: none"> Ridership actuals against projections from the econometric and travel demand models Ridership by travel shed and route – actual vs. projected Peak and non-peak ridership trends Impact of pricing and operational changes Relationship of ridership to vessel and terminal capital plans
Mobility	Level of Service Standard	Level of Service Standard Measures <ul style="list-style-type: none"> Actual boat wait by travel shed/route for vehicles
Stewardship	Operating Financial Plan	Farebox Recovery Measures <ul style="list-style-type: none"> Actual farebox recovery versus projected by travel shed and route Projected farebox recovery over the 16 year period of the legislative financial plan Unit Costs and Revenues <ul style="list-style-type: none"> Costs and revenues per rider per route and travel shed
Stewardship	Capital Financial Plan	Capital Project Measures <ul style="list-style-type: none"> Percent of projects on-time and on-schedule
Preservation	Terminal & Repair Facility Plan	Condition Rating Measures <ul style="list-style-type: none"> Condition rating (i.e., percentage in good, fair, poor, or substandard condition)

FERRY FINANCE DECISION MODEL: KEY FINDINGS

Demand	Level-of-Service Standard (LOS)	Operational and Pricing Strategies	Vessel Acquisition & Deployment	Terminals/ Repair Facility Plans		Operating Finance Plan		Capital Finance Plan
<p>Key Findings</p> <ul style="list-style-type: none">➤ Seven distinct travel sheds/ferry markets➤ Two travel models➤ Travel Demand Model (TDM)–used for long-range plan➤ Econometric Model (EM)– used for revenue forecast➤ TDM projects 25% higher ridership than EM by 2023 (main difference passengers)➤ TDM overstates cross-sound demand by understating Tacoma Narrows Bridge use➤ TDM assumes constant auto operating costs➤ EM updated more frequently➤ TM based on peak period projection extrapolation to annual demand➤ Origin and destination study being updated in 2006➤ Neither model provides information on recreational users➤ Need better information on vehicle drivers	<p>Key Findings</p> <ul style="list-style-type: none">➤ LOS set in 1994<ul style="list-style-type: none">▪ Walk-on – no wait▪ Vehicles – 1- 2 boat wait▪ San Juans – daily & seasonal➤ Planning for service additions is for peak-of-the-peak runs for passengers➤ Planning for service additions is for peak period (4-hour PM) for vehicles➤ Under TDM projections, WSF can meet walk-on demand through 2030➤ Non-WSF passenger-only ferry service on Vashon & Kingston to Seattle routes is key to meeting walk-on demand➤ Draft Long-Range Plan service and capital improvements are driven by vehicle demand➤ Ample capacity in non-peak periods for vehicles	<p>Key Findings</p> <ul style="list-style-type: none">➤ WSF has not thoroughly reviewed traffic demand strategies or operational changes to reduce peak vehicle demand➤ Options to be explored range from pricing strategies to reservation systems➤ Analysis of these options requested by cities reviewing terminal Environmental Impact Statements➤ 1998 Joint Legislative Audit and Review Committee Performance Audit recommended similar analysis➤ Operational and pricing strategies need to recognize travel shed differences	<p>Key Findings</p> <ul style="list-style-type: none">➤ Prior studies largely on vessels➤ Current Fleet - 28 vessels➤ Plan through 2030 is to sell or retire 14/acquire 14 vessels➤ Acquisition of 4 new 144-vehicle vessels authorized in current capital plan➤ Other vessel acquisitions flexible with actual ridership – plan to acquire in two more groups➤ All vessels to be acquired are planned as 144-vehicle vessels	<p>Key Findings</p> <ul style="list-style-type: none">➤ Little review in prior studies➤ Area of legislative concern➤ Definitions of project categories (i.e. , preservation and improvement) overlap and create confusion <p>Preservation Projects:</p> <ul style="list-style-type: none">➤ Life-cycle ratings key justification➤ 58% of the 2005-07 preservation budget affects rating➤ Life-cycle cost model needs improvement<ul style="list-style-type: none">▪ Not updated for condition▪ does not reflect life of steel & concrete structures▪ includes systems that are not replaced➤ Replacement preservation projects are similar to improvement projects➤ All system-wide projects attributed to preservation which overstates preservation program➤ Some preservation projects include maintenance items➤ Condition reports indicate terminals are in good condition	<p>Improvement Projects:</p> <ul style="list-style-type: none">➤ Based on existing ridership projections, level of service standard➤ Unlike vessels, not flexible with actual ridership➤ Design for vehicle holding areas uses terminal design standard level of service that results in holding areas larger than boat wait standard➤ Terminal building designs for walk-on facilities based on most congested sailing level of service standard➤ Operating costs will be higher for larger terminals – need life-cycle cost analysis➤ Project cost-benefit analysis limited<ul style="list-style-type: none">▪ Particularly important for over water structures➤ Plans for concessions need business plans and caution given inherent risks➤ Funding for full build out of major terminals not available➤ WSF incurs capital costs to meet local needs➤ WSF incurs capital costs to provide joint use multi-modal facilities	<p>Key Findings</p> <p>Finances:</p> <ul style="list-style-type: none">➤ 75% of income from farebox➤ Transfers to capital in legislative plan include all dedicated taxes & some fare and other earned income in out years - \$518 million (05-21)➤ Minimum fund balance of \$5 million in operating account <p>Farebox Revenue:</p> <ul style="list-style-type: none">➤ Revenue growth projected 6% to 11% per biennium (2005-21)➤ Tariffs up 62% 2001-06➤ Assume 2.5% annual increases 2007-21➤ 75% of farebox from vehicles➤ Complex ticket structure with 2,500 ticket types➤ Tariffs set by WSTC with Tariff Policy Committee (TPC) using tariff route equity policy➤ Broad legislative direction on tariffs➤ One-way fare collection may reduce revenues <p>Farebox Recovery:</p> <ul style="list-style-type: none">➤ 2005 – 76 %➤ Labor agreements not in 2005 recovery rate➤ Need to set by travel shed/route	<p>WSF Expenses:</p> <ul style="list-style-type: none">➤ Labor is 60% of total costs➤ 92% of staff is union➤ Labor agreements drive extra costs, including:<ul style="list-style-type: none">▪ 8-hour minimum call▪ extra vessel staffing beyond Coast Guard requirements▪ Overtime – double pay▪ Travel time▪ Penalty pay▪ Non-pay provisions▪ Passes for employees, family, retirees & retiree families➤ Fuel 21% of costs➤ High fixed cost of operation for vessels➤ Need projection of costs by travel shed and route <p>Impact of Cost Changes:</p> <ul style="list-style-type: none">➤ Net increase in costs from new fuel forecast & labor agreements & settlements➤ Reduce transfer to capital to \$420 million➤ Labor settlements not projected beyond 07/09➤ Unlikely transfer from operating available	<p>Key Findings</p> <p>Finances (2005-21):</p> <ul style="list-style-type: none">➤ Dedicated revenues – 12% of funding➤ Nickel & TPA – 18%➤ Discretionary Motor Vehicle Fund – 26 %➤ Transfer from operating – 19% <p>Shortfall:</p> <ul style="list-style-type: none">➤ Shortfall in capital funding➤ Size of shortfall cannot be determined <p>Prioritization:</p> <ul style="list-style-type: none">➤ Need for clearer prioritization process

FERRY FINANCE DECISION MODEL: RECOMMENDATIONS

Overarching Recommendations	Demand	Level-of-Service Standard (LOS)	Operational and Pricing Strategies	Vessel Acquisition & Deployment	Terminals/ Repair Facility Plans		Operating Finance Plan	Capital Finance Plan
<p>1. Use the ferry finance decision model to frame legislative reviews and authorizations.</p> <p>2. Recognize travel shed differences.</p> <p>3. Separate operating and capital finances.</p> <p>4. Recognize the importance of fares to generate revenue and affect demand.</p> <p>5. Encourage off-peak ridership increases.</p>	<p>Recommendations</p> <p>6. Require reconciliation of short and long-term ridership projections.</p> <p>7. Conduct independent review of revised ridership projection.</p> <p>8. In the interim, use econometric model projects of ridership for capital decisions.</p> <p>9. Require a market survey of recreation users and vehicle drivers.</p> <p>Performance Measures</p> <ul style="list-style-type: none">• Ridership actuals against projections from the econometric and travel demand models• Ridership by travel shed and route – actual vs. projected	<p>Recommendations</p> <p>10. Require a review of the level of service standard for vehicles.</p> <p>11. Conduct an independent review of the proposed level of service standard for vehicles.</p> <p>Performance Measures</p> <p>Actual boat wait by travel shed/route for vehicles</p>	<p>Recommendations</p> <p>12. Require a review of operating and pricing strategies.</p> <p>13. Conduct an independent review of proposed operating and pricing strategies.</p> <p>Performance Measures</p> <ul style="list-style-type: none">➤ Peak and non-peak ridership trends➤ Impact of pricing and operational changes	<p>Recommendation</p> <p>14. Tie vessel acquisition decisions to ridership.</p> <p>Performance Measures</p> <ul style="list-style-type: none">➤ Relationship of ridership to vessel acquisition plan	<p>Recommendations Capital definitions:</p> <p>15. Clarify capital project definitions</p> <ul style="list-style-type: none">▪ Capital – substantially extends the life of an asset or constructs new asset▪ Preservation – substantially extends the life of an asset▪ Improvement – changes or improves an asset to meet service levels or constructs new asset <p>Preservation Projects</p> <p>16. Revise terminal preservation program</p> <ul style="list-style-type: none">▪ Require development of terminal condition rating system.▪ Ensure expenses are properly allocated to terminal preservation. <p>Recommendations Improvement Projects</p> <p>17. Condition approval of terminal improvement projects on the independent reviews of ridership, vehicle level of service standard, and pricing and operational reviews.</p> <p>18. Conduct independent review of terminal design standards.</p> <p>19. Require a pre-design study on terminal improvement projects over \$5 million for review by OFM and legislative transportation committees.</p> <p>20. Require WSF to identify costs to meet local concerns and to provide joint use transit facilities.</p> <p>Performance Measures</p> <ul style="list-style-type: none">➤ Condition rating -(i.e. % in good, fair, poor or substandard condition)➤ Relationship of ridership to terminal improvement projects		<p>Recommendations Finances:</p> <p>21. Revise operating fund policies</p> <ul style="list-style-type: none">▪ Do not plan transfers from the operating fund to support capital▪ Use special surcharge directly to capital if fares are to support capital▪ Allow greater fund balance in the operations account▪ Balance operating fund with earned revenues and dedicated tax support <p>Fares</p> <p>22. Revise tariff setting directions and policies</p> <ul style="list-style-type: none">▪ Amend RCWs to provide more specific direction on tariffs▪ Require a market survey in setting tariffs▪ Direct the Washington State Transportation Commission to examine the role of the Tariff Policy Committee▪ Require more accurate cost projections for development of tariffs▪ Recognize that costs will likely exceed fare increases of 2.5 % per year in the 2007-21 biennia▪ Review one-way fare collections <p>Performance Measures</p> <ul style="list-style-type: none">• Actual farebox recovery versus projected by travel shed and route• Projected farebox recovery over the 16 year period• Costs and revenues per rider by route/travel shed	<p>Recommendations</p> <p>23. Recognize likely shortfall in capital funding.</p> <ul style="list-style-type: none">▪ Amount of gap cannot be estimated until ridership demand, level of service and pricing and operational strategies reviews are complete. Terminal condition rating and/or revisions to the terminal life-cycle cost model will be needed to project terminal preservation costs. <p>Performance Measures</p> <ul style="list-style-type: none">• Percent of projects on-time and on-schedule

Introduction

Washington State Ferries (WSF) is at an important financial crossroads. Prior to 1999 a significant portion of WSF's operating and capital revenue was provided by the Motor Vehicle Excise Tax (MVET). When the MVET was repealed in response to voter approval of Initiative 695, fares were raised substantially and ridership began to decline. By 2005 ridership was 10 percent lower than in fiscal year 1999.

In 2006 WSF released its Draft Long Range Strategic Plan 2006-2030, which projects ridership growth of 68 percent based on current planned service. Growth with service improvements recommended in the plan is projected to be 88 percent. The Washington State Legislature is faced with the difficult challenge of funding for the plan's proposed operating and capital improvements while at the same time providing funding to preserve existing service levels and system infrastructure.

The 2006 supplemental transportation budget (SSB 6241) provided funding for the Joint Transportation Committee (JTC) to conduct a finance study of the Washington State ferry system to facilitate policy discussions and decisions by the Legislature. To guide the study, the JTC created a Ferry Finance Advisory Committee consisting of four legislators, a representative of the Governor's Office, and a member of the Washington State Transportation Commission (WSTC).

SSB 6241 states that the legislature recognizes there is a need within the Washington State ferry system for predictable cash flows, transparency, assessment of organizational structure, verification that the Washington State ferry system is operating at maximum efficiency and better labor relations. The legislation directed that the study include a review and evaluation of the ferry system's financial plan, including current assumptions and past studies, in the following areas:

- Operating program, including ridership, revenue, and cost forecasts and the accuracy of those forecasts; and
- Capital program, including project scoping, prioritization and cost estimating, project changes including legislative input regarding significant project changes, and performance measures.

The study was conducted by a combination of consultant and legislative staff, with legislative staff focused on issues directly related to the transportation budget. The study includes a series of separate tasks, with full reports from each task included as Technical Appendices to this report.

The consultants and legislative staff reviewed previous WSF studies and reports, and the legislative history. The consultants conducted interviews with legislators and their staff, and with staff and consultants from the Washington State Department of Transportation (WSDOT), Office of Financial Management (OFM) and WSF. A working group of WSDOT, legislative, OFM, and consultant staff assisted with data coordination.

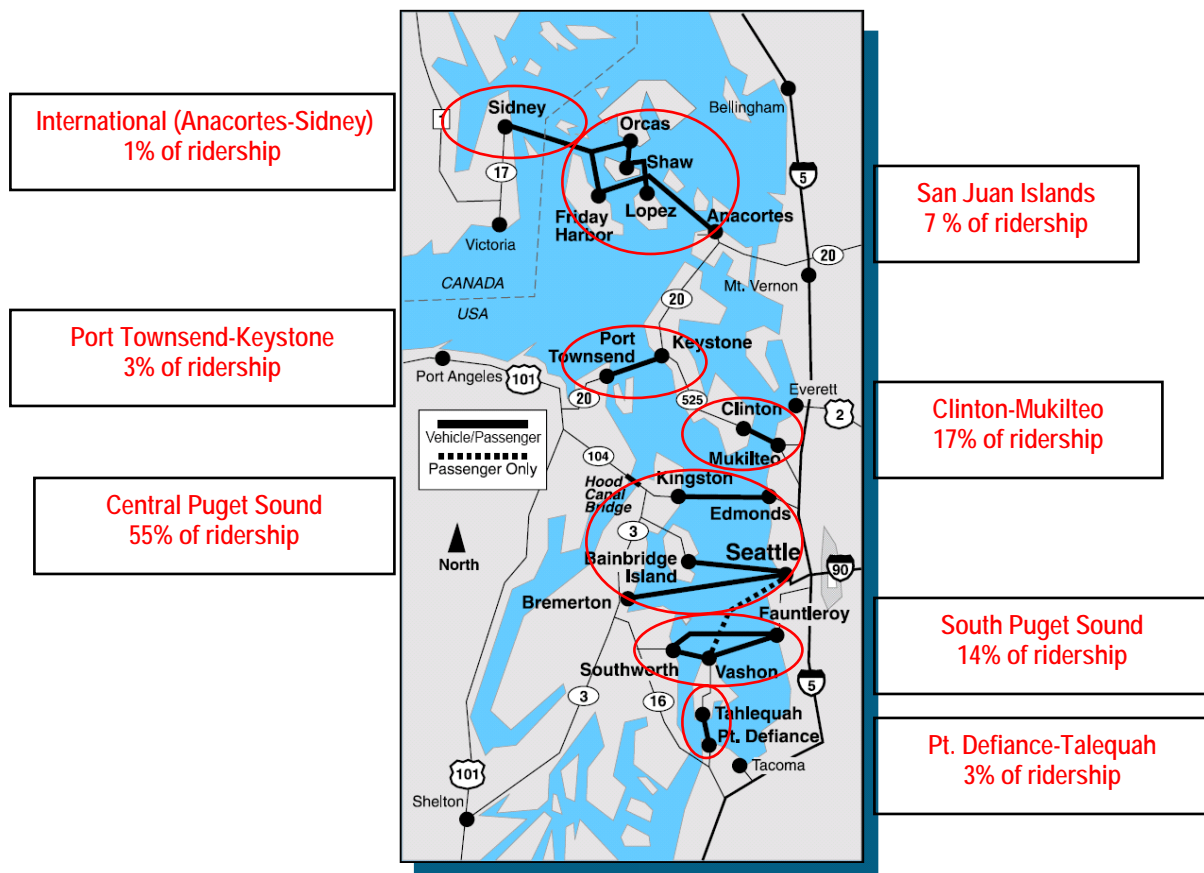
Section One Ferry System Overview

WSF's purpose is to serve as part of the state highway system and as a provider of mass transit (chapter 47.60 RCW). In accordance with this mandate, WSF operates ten ferry routes within seven travel sheds in Puget Sound and the San Juan Islands (see Figure 1).

Each of these travel sheds is distinct, with differing ridership characteristics, vessel and terminal capacities, and service areas.² Some travel sheds encompass several routes and some only one.

The ferry system includes 28 vessels, 20 terminals, and a repair facility.

**Figure 1. WSF Routes & Travel Sheds
FY 2005 Ridership**



² The Draft Long Range Plan divides service into four corridors. The 1999 WSF Travel Survey Analysis and Results Report identifies seven travel sheds. "As this analysis focused on the geographic nature of ferry passenger origin and destination locations (rather than terminal locations) the outcome or corridor grouping of the ferry routes varies from that of the WSF Plan" (p. 53).

A. WSF Ridership

In fiscal year (FY) 2005, WSF had 23.9 million riders. Ridership is concentrated in the Central Puget Sound travel shed, which had 55 percent of riders in FY 2005. The Clinton-Mukilteo travel shed had 17 percent of riders and the South Sound travel shed 14 percent. The remaining 14 percent of ridership is in four travel sheds: the San Juan Islands (7 percent), Port Townsend-Keystone (3 percent), Point Defiance-Tahlequah (3 percent), and the International Anacortes-Sidney (1 percent).

Table 1. Travel Shed Ridership FY 2006

Travel Sheds	Routes	2005 Ridership			
		Passenger (000s)	Vehicle (000s)	Total (000s)	% Total
Central Puget Sound	Seattle-Bainbridge, Seattle-Bremerton, Edmonds-Kingston	7,927	5,091	13,018	55%
Clinton-Mukilteo	Clinton-Mukilteo	1,846	2,206	4,052	17%
South Puget Sound	Southworth-Vashon-Fauntleroy, Vashon-Seattle POF	1,577	1,838	3,415	14%
San Juan Island	Anacortes-Orcas-Friday Harbor-Lopez-Shaw	914	850	1,764	7%
Port Townsend-Keystone	Port Townsend-Keystone	413	372	785	3%
Tahlequah-Pt. Defiance	Tahlequah-Pt. Defiance	298	406	704	3%
International Route	Anacortes-Sidney	96	47	143	1%
Total		13,071	10,810	23,881	
		55%	45%		

Forty-five percent of riders in 2005 were vehicle drivers and 55 percent passengers.

Ridership peaked in FY 1999 with 26.5 million passengers, ten percent higher than FY 2005 ridership. Ridership is down from FY 1999 on all routes and among both passengers and vehicles. The reduction is attributed by WSF primarily to high tariff (fare) increases (56 percent from 2001-2005) instituted when the system lost MVET support. Service reductions resulting from the loss of MVET funding and a general recession also contributed to the reduced ridership.

Interviews with legislators conducted as part of this study indicated strong concern among elected officials about the size of the tariff increases and their effect on system ridership.

B. WSF Financial Overview

WSF issued its Draft Long Range Strategic Plan 2006-2030 in the spring of 2006. It is the first Long Range plan since the loss of MVET funding. The plan anticipates that operating expenses will be less than operating revenues. Ridership is projected to increase 88 percent with recommended service levels leading to larger fare revenues. Operating revenues are primarily from fares (98 percent planned for 2006-2030). Concessions and other earned revenue and dedicated tax support make up the remaining support. The projected operating surplus of \$925.5 million from 2006-2030 is to be transferred from the Puget Sound Ferries Operating Account (PSOA) to support WSF's capital program.

The Draft Long Range Strategic Plan 2006-2030 anticipates a capital program of \$5.6 billion. The 2006 legislative financial plan assumes funding from dedicated gas tax revenue, discretionary appropriations by the legislature from the Motor Vehicle Fund, Nickel and Transportation Partnership Act funding, and transfers from PSOA. WSF's plan notes a funding shortfall of \$410.7 million in its proposed capital program.

C. Farebox Recovery

A 2001 Joint Legislative Task Force on Ferries recommended that WSF achieve a systemwide farebox recovery rate of 80 percent, meaning that farebox revenues would provide 80 percent of the system's operating budget. In FY 2005 WSF had a 76 percent farebox recovery rate. Several of the legislators interviewed indicated a concern about whether an 80 percent farebox recovery rate was either achievable or desirable.

WSF's Draft Long Range Strategic Plan projects farebox recovery rates growing to 109 percent by the end of 2029, with surplus fare income transferred to support the capital program.

Section Two

Ferry Finance Decision Model

WSF bases its planning on the premise that operations and demand for ferry service drive fleet size and deployment. Fleet size and deployment in turn drive shoreside infrastructure (i.e. terminals and repair facility). WSF's long-term operating and capital financial needs are based on the resulting service plan and need for investment in vessels and shoreside facilities.

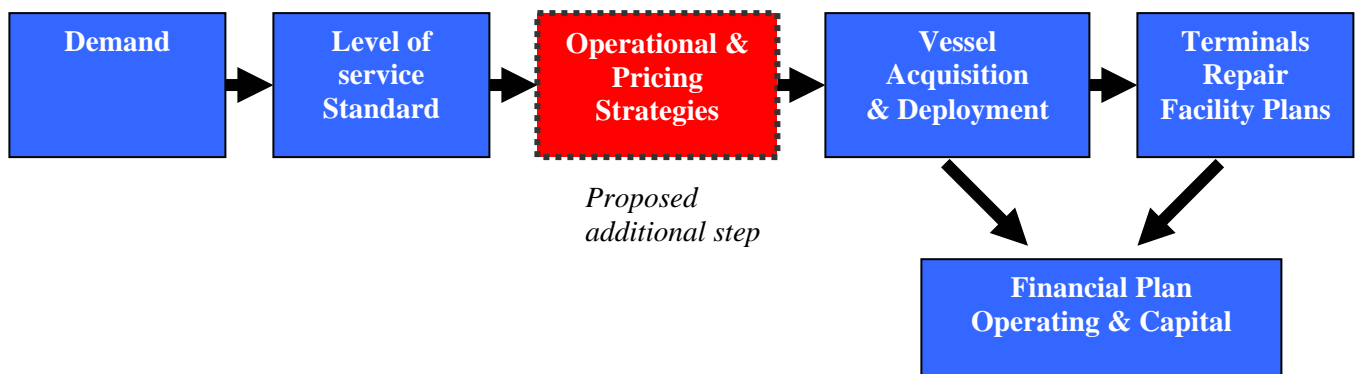
The consultants have found this decision model to be valid, with the addition of a review of operational and pricing strategies as discussed below.

The first step in the decision model is the projection of ridership demand, and the second is to determine how that demand affects the WSTC level of service standards for passengers and vehicles. These are the most important steps in determining WSF's long term financial requirements. As noted in WSF's Draft Long Range Strategic Plan: "The primary goal...is to prepare WSF to provide ferry service that is best able to meet future customer demand. WSF's ability to meet demand is measured by level of service standards...quantif(ied)...in terms of average wait time for vehicles and "peak-of-peak" demand and capacity comparisons for walk-on passengers" (p. i).

In WSF's Draft Long Range Strategic Plan, service additions are proposed when demand grows to the point that the level of service cannot be achieved. The plan notes that "WSF's service plan is built on the premise that service should be added in a corridor when a route experiences congestion that exceeds the WSTC level of service standard" (p. iv).

This study proposes to add an additional step in the decision model-- examine modifications to WSF's pricing and operation strategies (i.e. reservations, congestion pricing) that might allow existing assets to meet the level of service standard if actual ridership increases. Under the proposed revised ferry finance decision model, demand, *moderated by traffic demand management*, would determine the vessel plan which in turn would drive shoreside plans and subsequently the capital and operating financial plans.

Figure 2. Ferry Finance Decision Model



Section Three

Demand

Ridership projections are the foundation for WSF's financial plan. An assessment of the reasonableness of the ridership projection is the first critical step in the modified ferry finance decision model.

The consultants found that WSF uses two models to project ridership: an econometric demand model (econometric model) used for revenue forecasting and a network-based travel demand model (travel demand model) used for long range planning, including the development of the Draft Long Range Strategic Plan. The two models provide different projections of ridership with the econometric model projecting a 24 percent increase in ridership by 2023 and the travel demand model projecting a 56 percent increase.³ This section reviews the two models, outlines the differences between them, and explores the reasons for the variation.

The consultants found that a large factor in the discrepancy between the two projections is that the travel demand model used for the Draft Long Range Strategic Plan overstates ridership in the Central and South Sound travel sheds. This is due to the model's estimate of the number of vehicles that will use the new Tacoma Narrows Bridge instead of the ferry. (The model assumes 66,000 vehicles per day on the Tacoma Narrows Bridge in 2020 compared to WSDOT's published projection of 120,000).⁴

The consultants recognize that the two models provide different and important information for WSF planning. It is recommended that the differing results be reconciled so consistent projections are used for short and long-term planning. Pending completion of the reconciliation, the consultants recommend reliance on the econometric model for capital planning rather than the travel demand model.

A. Two Forecast Models

WSF's two forecasting models provide different information. The econometric model provides current biennium and sixteen-year projections of ridership and revenue from six fare categories by route and month. The travel demand model projects ridership for a twenty-five year period. The travel demand model provides projections by route, method of boarding and mode of access and egress for a four-hour PM peak period on a typical weekday, and projects ridership under different service scenarios.

WSF uses the econometric projections for forthcoming fiscal year and current budgeting, revenue estimates for the Transportation Revenue Forecast Council, statewide budgeting, and

³ Comparison is based on the June 2006 econometric forecast which was available when this analysis was conducted. The November 2006 econometric forecast made changes in assumptions about personal income that increased the model's 2023 ridership projection. The total growth projected in the November forecast is 38 percent compared to the 56 percent from the travel demand model.

⁴ WSDOT has revised its published figure of Tacoma Narrows Bridge daily vehicle use to 95,000 per day in 2020. The figure of 120,000 was the figure published on the WSDOT web site when this analysis was conducted.

for testing fare policy scenarios for the WSTC Tariff Policy Committee (TPC). The travel demand model projections are used for long range system, corridor and route planning, capital and service planning, and to guide terminal design.

The econometric model has proven to be quite accurate. For example, during the period from 2001 to 2005 the percentage variance between forecasted ridership and actual ranged from a 6.3 percent variance for the June 2001 forecast of 2005 ridership, to a -0.1 percent variance for the June 2004 forecast of 2004 ridership.

WSF does not track actual ridership against the travel demand model, in part because it is updated only when a new strategic plan is developed. The consultants note that the projections developed from this model in the 1999-2018 Long Range Systems Plan (a projected 70 percent increase in ridership) were very inaccurate because they could not anticipate the steep fare increases resulting from the loss of MVET support.

The econometric model relies on ridership and fare data from WSF, as well as economic and demographic data from OFM, WSDOT, and Global Insight, a commercial provider of databases of economic information. For forecasting, the demand model uses fare rates as assumed by the legislature in the 2006 session--a 2.5 percent increase per year with fares rounded to the nearest nickel. This assumed rate of increase results in rising real fares over time because inflation is assumed to be less than the 2.5 percent fare increase.

The travel demand model relies on information from the Puget Sound Regional Council (PSRC) Regional Travel Demand Model for King, Pierce, Snohomish and Kitsap counties, which encompass 81 percent of WSF riders. The model also relies on data from OFM on population and growth outside of the PSRC areas and on WSF data, including the results of WSF's 1999 origin and destination survey. Other information provided by WSF includes data on levels of service, including fares, frequencies of service, and capacities. Like the econometric model, the travel demand model uses fare increases based on the rates assumed by the legislature in the 2006 session--a 2.5 percent increase per year.

Table 2. Comparison of Forecast Models

	Econometric Model	Travel Demand Model
Provides	<ul style="list-style-type: none"> • Current biennium and sixteen-year projections of capacity constrained ridership and associated revenue (i.e. constrained by existing service levels) • Fiscal year revenue and ridership forecasts for six fare categories by route and month • Revenue and ridership impacts of alternative service and fare scenarios • Capacity constrained and unconstrained demand estimates • Fare elasticities of demand estimates by six fare categories 	<ul style="list-style-type: none"> • Ridership projection for a twenty-five year period • Projections of ridership by route, method of boarding, and mode of access/egress for the four-hour PM peak period on a typical weekday • Projections under different service assumptions.
Uses	<ul style="list-style-type: none"> • Forthcoming fiscal year and current budgeting and short-range service planning • Revenue estimates for the Transportation Revenue Forecast Council for statewide 	<ul style="list-style-type: none"> • Long Range system, corridor, and route planning • Identifying future service and capital needs • Providing Long Range travel demand forecasts

	Econometric Model	Travel Demand Model
	budgeting <ul style="list-style-type: none"> • Testing fare policy scenarios for use by the WSTC Tariff Policy Committee (TPC) 	to the Puget Sound Regional Council (PSRC) and Metropolitan Planning Organizations (MPOs) to support regional transportation planning <ul style="list-style-type: none"> • Providing data for other major transportation projects such as the Alaskan Way Viaduct • Guiding terminal design
Accuracy	<ul style="list-style-type: none"> • Tracked by WSF – quite accurate 	<ul style="list-style-type: none"> • Not tracked by WSF
Data	<ul style="list-style-type: none"> • WSF ridership & fares • WSDOT and OFM economic and demographic projections • Global Insight economic database 	<ul style="list-style-type: none"> • Puget Sound Regional Council (PSRC) regional demand model • OFM population & growth data for areas outside of the PSRC model • WSF data on levels of service • WSF origin and destination studies

B. Ridership Projections

The two models have significantly different ridership projections, with the econometric model's projections substantially lower than the travel demand model. The econometric model's June 2006 forecast projects 24 percent growth between 2006 and 2023, while the travel demand model projects 56 percent. The discrepancies in projected ridership are smaller for vehicle travel (4 percent higher in the travel demand model) than for passenger travel (43 percent higher).

C. Model Differences

The models generate substantially different ridership projections because of the inputs used, how frequently they are updated, and their use of peak period forecasts. WSF has not attempted to reconcile the differences in the models. As noted in WSF's Draft Long Range Strategic Plan: "Ridership projections are adjusted to match the econometric model's annual totals through 2008. Projections for the year 2017 and beyond rely only on the regional transportation model and a smooth curve is assumed during the transition period between 2008 and 2017" (p. 13).

1. Model Updates

The two models provide different results in part because they are updated on different cycles. The econometric model is updated quarterly based on OFM's quarterly updates of population and employment. The travel demand model is dependent on the less frequently updated PSRC model.

2. Auto Operating Costs

One of the differences between the two models is how they deal with the cost of operating an automobile. Automobile operating costs are a primary driver of vehicle ridership on the ferries--ridership is reduced as the costs of operating an automobile increase. In the PSRC travel demand model, automobile operating costs are assumed to remain constant with inflation. In contrast, the econometric model factors in a variable for gasoline prices and for changes in vehicle fuel efficiency.

3. Peak Period

Unlike the econometric model, the travel demand model is based on the four-hour PM peak period, which is then extrapolated to the rest of the day, week, and year. The comparison of forecasts between the two models is highly dependent on the assumptions made for extrapolating weekday PM peak period demand into annual ridership. If the relationship between the peak and non-peak periods changes as a result of tariff increases or service modifications, it will affect the calculation of annual ridership.

D. PSRC Travel Demand Model: Cross-Sound Demand

A key input to WSF's travel demand ridership projection is the PSRC model forecast of cross-Sound ferry ridership growth. The consultants' review indicates that the travel demand model overstates cross-Sound demand due to its estimate of the number of vehicles that will use the new Tacoma Narrows Bridge instead of the ferry. The PSRC model assumes 66,000 vehicles will use the Tacoma Narrows Bridge daily in 2020. WSDOT's published estimate is 120,000 vehicles a day.

For this study, Mirai Associates recalculated the cross-Sound ridership projection using a calculation of daily vehicle use of the Tacoma Narrows Bridge based on WSDOT's published projections of bridge use. The resulting estimate calculated 4.6 million fewer ferry trips than the travel demand model, resulting in a revised systemwide baseline ridership estimate in 2030 that is 11 percent lower.

The consultants also compared the forecasts for the two models by route for 2007, 2010, 2015, and 2020. The largest discrepancy found is in the projections for the Seattle-Bremerton route in the Central Puget Sound travel shed. The econometric model has 2.5 million fewer trips or 53 percent fewer than the travel demand model in 2020 for this route. The South Sound travel shed's 2020 total is 52 percent lower (840,000 riders) in the econometric model than in the travel demand model. Both of these travel sheds are particularly affected by the Tacoma Narrows Bridge projections, and together account for 48 percent of the difference in the ridership projections.

E. Relationship to Historical Ridership Growth

WSF's Draft Long Range Strategic Plan suggests that the relatively high ridership growth rates projected are reasonable in part because they are consistent with previous growth rates. This comparison to prior time periods should be reviewed with caution because of the following factors.

- The 1970-1980 decade had the highest increase in two-worker households in U.S. history, resulting in an increase of work trips at a significantly higher percentage rate than in the current decade.
- Rates during this period actually lagged behind inflation, so that the real cost of ferry ridership declined during this period.
- The current plan for 2.5 percent annual rate increases assumed in both models is greater than the anticipated rate of inflation, resulting in an increase in real fares.

F. Recreational Use

As is typical of transportation models, neither of the models used by WSF includes specific information about trends in recreational use. This lack of information is most important in projecting demand for the Keystone-Port Townsend, San Juan Islands, and Anacortes-Sidney travel sheds, which have heavy recreational use.

G. Origin and Destination Study

WSF did not update its 1999 origin and destination study for its Draft Long Range Strategic Plan, as it was less than five years old when WSF began drafting the plan in 2003. The plan does incorporate a more limited origin and destination study conducted in 2003 in the South Puget Sound to support analysis of passenger only ferry service.

WSF's service and tariff structure has changed substantially since 1999. A comprehensive review of the impact of those changes on customer origin and destination patterns will not be available until the survey is updated in late 2006.

H. Vehicle Information

There is little information available on the characteristics of the vehicle market. As discussed in the next section, WSF's capital plan is largely driven by the need for expanded capacity to support increased vehicular traffic. There are no surveys or other market information available on vehicle drivers likely response to operational or tariff changes.

I. Consultants' Observations

1. Ridership Projections

The consultants note the critical importance of ridership projections as a basis for long-term financial planning for WSF. This is particularly important in light of ridership losses since 1999. The legislature needs assurance that ridership projections are reasonable before authorizing capital and operational plans based on the projections.

2. Draft Long Range Strategic Plan

The consultants find that WSF did not use a sufficiently refined ridership forecast in the development of its Draft Long Range Strategic Plan because of the underlying problems with the projections of cross Sound travel in the PSRC model. This is particularly critical in reviewing plans for south Kitsap County to Seattle travel, which affects planning for the Central and South Sound travel sheds.

3. Model Reconciliation

The consultants found that the information provided from both models is critical for WSF planning, but that WSF needs to reconcile the models in order to provide a consistent forecast for short and long-term planning. The econometric model is quite accurate, is critical to the ability of WSF to forecast revenue and ridership, and helps support tariff decisions. The travel demand model provides important information that is not available from the econometric model on rider origin and destination, peak and non-peak patterns, and actual vehicle wait times.

4. Use of Model Information

The consultants found that WSF is using the travel demand forecast for capital planning and terminal design. The consultants recommend that WSF use the econometric model for capital planning and terminal design until the models are reconciled. In the interim, this will ensure that the planning and design work matches the revenue projections in the sixteen-year capital plan. This recommendation is particularly important for the Central and South Sound travel sheds which are affected by the Tacoma Narrows Bridge.

5. Additional Ferry Market Information

a) Recreation use

The models provide little information on recreational users. The consultants recommend a market study of current and forecasted recreational use of the ferry system, with a particular focus on the Keystone-Port Townsend, San Juan Islands, and Anacortes-Sidney travel sheds.

b) Vehicle Drivers

A new origin and destination survey is being conducted in late 2006 which will provide more current information on ferry users. The consultants recommend a supplementary market study of vehicle customers to help inform planning, operations, and tariff policies affecting this key market. The market study should be designed to provide information on the reaction of this market to possible operational and pricing strategies to help meet demand.

Section Four

Level of Service Standard

The second critical variable in the finance decision model is the level of service standard used to measure the ability of WSF to respond to projected ridership demand. The level of service standard for WSF service, established by the WSTC in 1994, is expressed in boat waits for all routes other than the San Juan Islands and Anacortes-Sidney travel sheds, where it is expressed as a percentage of daily capacity.

This section reviews the level of service standard and its implications for planning. The level of service standards are based on the PM peak traffic, meaning that WSF is planning for peak levels in service and capital planning.

WSF's Draft Long Range Strategic Plan found that walk-on passenger service demand could be met through 2030 even under the travel demand model's high ridership projection, with the exception of the most congested sailing on the Bainbridge Island-Seattle route in the Central Sound travel shed. The need for increased vehicle capacity is driving the proposed capacity increases in the Long Range Plan. This section reviews peak and non-peak capacity, noting WSF's ample capacity in non-peak periods for vehicles as well as passengers, and discusses the Long Range Plan's reliance on non-WSF passenger-only ferry service.

A. Level of Service Standard

The 1999 Long Range Systems plan discusses the development of the level of service standards which were adopted by the WSTC in 1994. The plan notes that "the standards measure the amount of delay experienced by travelers. ...For the majority of the WSF system, level of service standards are expressed in terms of 'boat waits'; i.e. how many vessel sailings would the traveler have to wait through before getting on the boat" (p. 4).

These same standards were applied in developing the Draft Long Range Strategic Plan 2006-2030.⁵ These standards are no boat wait for passengers, and for vehicles a one boat wait for all routes except Seattle-Bainbridge and Clinton-Mukilteo where, based on vessel schedules, there is a two boat wait standard. In the San Juan Islands and Anacortes-Sidney travel sheds the level of service standard is a percentage of daily capacity, seasonally adjusted.

Table 3. Level of Service Standards

	Level of Service Standard
Passengers (walk-on)	No boat wait
Vehicles	1 boat wait – for all routes except as below: Seattle-Bainbridge & Clinton-Mukilteo 2 boat wait San Juan Islands & Anacortes-Sidney – percentage of daily capacity seasonally adjusted

These level of service standards are applied throughout the 25 year planning horizon meaning that WSF service has been planned with no increase in congestion through 2030.

⁵ In the Draft Long Range Strategic Plan, boat waits are translated into hours.

B. Peak Planning

The level of service standards result in WSF planning for the peak of the peak for passenger ridership, i.e., for the most congested sailing of the day and for the four hour PM peak for vehicles. As noted in the Draft Long Range Strategic Plan, “The primary goal...is to prepare WSF to provide ferry service that is best able to meet future customer demand. WSF’s ability to meet demand is measured by level of service standards...quantif(ied)...in terms of average wait time for vehicles and ‘peak-of-peak’ demand and capacity comparisons for walk-on passengers” (p. i).

C. Ability to Meet Ridership Demand

In WSF’s Draft Long Range Strategic Plan, WSF can meet the level of service standard for walk-on passengers (no wait for even the most congested sailing of the day) through 2030, with the exception of the Seattle-Bainbridge Island route in the Central Puget Sound travel shed.

WSF’s capacity problem lies with its ability to meet the level of service standard for vehicles measured by boat waits during the four hour PM peak. As noted in WSF’s Draft Long Range Strategic Plan, “...there are tensions in terms of how priorities should be established regarding moving people versus moving vehicles. This is a particularly significant issue for this Plan, as most of the pressure to expand services is coming from growth in vehicles. There are two principal policy areas where issues of people versus vehicles arise: 1) the WSTC congestion standards; and 2) fare policies” (p. 68).

D. Passenger-Only Ferry Service

The 2006 legislature directed WSF to discontinue its passenger-only ferry (POF) service, which at one time included a Bremerton-Seattle POF service as well as the existing Vashon Island-Seattle POF service. The 2006 legislation directed the ferry system to maintain the level of service existing on January 1, 2006, on the Vashon to Seattle passenger-only ferry route until such time as the legislature approves a county ferry district’s assumption of the route. The 2006 legislature also directed the ferry system to collaborate with new and potential passenger-only ferry service providers and establish a passenger ferry account to be used for operating or capital grants to these providers.

The Draft Long Range Strategic Plan assumes non-WSF POF service from Vashon Island to Seattle and from Kingston to Seattle. The Kingston-Seattle POF service is particularly critical in WSF’s plan to meet projected demand in the Central Sound travel shed.

E. Capacity

WSF has ample capacity during non-peak periods for passengers and vehicles. The travel demand model projections show ample vehicle capacity during fall, winter and spring seasons for weekday non-peak and weekend travel on all routes. (For example, capacity utilization ranges from a low of 6 percent on the Vashon-Southworth route in the South Sound travel shed to a high of 68 percent on the Seattle-Bremerton route in the Central Sound travel shed on winter weekends in 2020.)

In the summer, weekend vehicle capacity utilization is over 90 percent in the recreation based travel sheds (Port Townsend-Keystone, San Juan Islands and Anacortes-Sidney) in the 2020 travel demand model projection. Projected vehicle capacity utilization on the other routes during summer weekends in 2020 ranges from a low of 5 percent to a high of 79 percent.

F. Consultants' Observations

1. Importance of the Vehicle Level of Service Standard

The consultants note the importance of the level of service standard for vehicles. The inability of the system to meet projected growth in vehicular demand at the existing level of service standards is driving the proposed service and capital improvements. As discussed in Section 3, WSF has little information on the characteristics of this key segment of its market. No market research has been undertaken on customer travel options, willingness to endure longer waits, or reactions to potential operational or pricing strategies (discussed in Section 5) to encourage non-peak travel.

2. Level of Service Standard Review

WSF's Draft Long Range Plan assumes that the level of service standard adopted in 1994 remains constant through 2025. If this level of service is maintained, WSF would be one of the only parts of the highway system to maintain a constant level of service. Population growth in the Puget Sound area has increased congestion and diminished service levels in other parts of the highway system.

The consultants also note that boat waits as a level of service standard for vehicles do not reflect the consumer experience. Many passengers driving onto ferries arrive early to try to ensure a spot on a desired sailing. The 1999 Washington State Ferries Travel Survey Analysis and Results Report noted that 25 percent of vehicle drivers waited 31 to 60 minutes to board and 9 percent waited more than 61 minutes (p. 31).

The consultants recommend that the level of service standard for vehicles be reviewed to determine if:

- the level of service standard should be adjusted for vehicles and/or,
- boat waits are the best level of service measurement for vehicles.

If the level of service standard for vehicles is relaxed, it would, as noted in the Draft Long Range Strategic Plan, "...push service triggers further into the future [and]...increase congestion and possibly lead to higher levels of walk-on traffic." (p. 69)

3. Passenger-Only Ferry Service

The consultants note the reliance of the Draft Long Range Strategic Plan on non-WSF passenger-only service to meet ridership demand in the Central and South Puget Sound travel sheds. This is especially important in light of the legislature's direction for WSF to collaborate with new POF providers. If other POF providers are not successful, it will make it more difficult for WSF to meet the passenger level-of-service standard in these travel sheds.

4. Non-Peak Capacity

The consultants note that WSF has the ability to accommodate shifts in vehicular travel to non-peak time periods through the 2030 planning period, with the exception of the recreation based travel sheds during the summer.

Section Five

Operational & Pricing Strategies

This study recommends that an additional element be added to the ferry finance decision model -- review pricing and operational changes to manage demand by encouraging riders to walk-on and/or, if driving, to drive-on in non-peak periods.

WSF's 1999-2018 Long Range Systems Plan placed priority on traffic demand strategies, noting that key elements of the plan include "[i]ncreasing the modal share for walk-on passengers and carpools/vanpools, and decreasing the modal share for single occupant vehicles" (p. 32-33). This priority is not as strongly reflected in WSF's Draft Long Range Strategic Plan 2006-2030, although the plan assumes continued growth in walk-on passengers.

The 1999 and 2006 plans both emphasize the importance of integration of WSF service with other public transit providers to facilitate the increase in walk-on traffic. "A key underlying assumption in the successful shift toward walk-on ridership is the continuing investment in regional transit options. Expansion of bus services on both sides of the Sound and connecting Edmonds-Kingston passengers to downtown Seattle via the Sounder Commuter Rail are among the more significant transit investments. Without these investments, it will be difficult to accommodate such a significant modal shift" (Draft Long Range Strategic Plan 2006-2030 p. 26).

This section reviews the potential for pricing and operational changes and recommends that consideration of these changes be based on the characteristics of each travel shed and route.

A. Pricing and Operational Strategy Options

WSF did not undertake a review of pricing or operational strategies in the development of its Draft Long Range Plan, but rather assumed current service paradigms and pricing configurations (p. 66). These assumptions include the current first come-first served loading policy, and the current fare structure "where car and driver fares are generally 3.5 times higher than passenger fares" (p. 69).

A draft WSF document titled "Colman Dock Operation Strategies" prepared in March 2006 identified the following operational and pricing options that might alleviate peak vehicle demand at Seattle's Colman Dock. These same options, and perhaps others, could be assessed for other travel sheds.

- Manage peak demand using reservations
- Shift vehicular traffic to other modes
- Reduce peak demand via pricing
- Improve on-dock operations
- Remote holding
- Increasing dock size (eliminate employee parking, re-organize holding area, change schedule)

- Exit queuing and metering

The TPC reviewed traffic demand strategies during the 2005-06 tariff discussions. A TPC analysis of traffic demand management options examined the passenger/vehicle fare relationship and congestion (time-of-day) pricing options.

B. Environmental Impact Statement Reviews

Some jurisdictions reviewing terminal project environmental impact statements are requesting reviews of operational and pricing strategies. For example, the City of Seattle is concerned about the amount of traffic on city streets. The City's comments on notice of scoping for the Seattle Colman Dock terminal EIS noted that for the traffic analysis "all alternatives should include a transportation demand management component with the objective of accommodating planned growth while potentially reducing the need for expensive capital facility investments by effectively managing demand for the facility. This plan should include pricing, methods to shift modes and methods to shift peak travel to off-peak travel" (City of Seattle letter, May 19, 2006, p. 9).

C. Previous Legislative Studies

Previous legislative studies have recommended reviews of WSF operational and pricing paradigms. Most notably the Joint Legislative Audit Review Committee's (JLARC) Ferry System Performance Audit Report in 1998 recommended a clean slate analysis. The study found that: "The fleet planning process currently employed by WSF is based on scenario analysis [where] alternative deployment schemes such as adding additional vessels, substituting a larger vessel for a smaller one, or changing vessel routings are considered to address growing or shifting demand. This type of analysis is appropriate for regional short-term system planning, but is limited in its ability to develop out-of-the-box thinking due to current operating, infrastructure, and service paradigms" (p. 8-11). The study recommended "a core part of the [recommended] clean slate analysis include the optimization of capital and operating costs against future demand, service standards, and tariff requirements" (p. 8-20).

D. Consultants' Observations

1. Operational and Pricing Strategy Review

Given the financial challenges facing ferries, it is important to fully utilize existing assets. This argues for a careful review of operational and pricing strategies to encourage peak period riders to walk-on, and if driving-on, to do so during non-peak periods.

2. Travel Sheds and Routes

The travel sheds have distinct ridership characteristics, vessel and terminal capacities, and service areas, and thus should be assessed separately. For example, reservation policies that might work on the recreation based San Juan Islands and Keystone-Port Townsend travel sheds may not be appropriate for the commuter based Puget Sound travel sheds.

3. Cost-Benefit Analysis

A cost-benefit analysis of the life cycle cost of potential operational and pricing strategies should be conducted. This would weigh the capital and operating costs of the strategies, consistent with the recommendation of the 1998 JLARC performance audit.

Section Six Vessel Acquisition and Deployment

The fourth step in the ferry finance decision model is to determine the vessel acquisition and deployment plan to meet the level of service standard for projected passenger and vehicle ridership.

Vessel acquisition and deployment have received considerable review in previous legislative studies of WSF, and were not a focus of this study. This section reviews key findings of earlier studies and vessel deployment and acquisition plans in the Draft Long Range Strategic Plan. The consultants note that the vessel acquisition plan in the Draft Long Range Plan is designed to be flexible with actual ridership experience.

This section includes an analysis done by legislative staff on the current WSF vessel acquisition program.

A. WSF Vessels

WSF currently has 28 vessels of which four are passenger-only ferries. In accordance with legislative direction to discontinue its passenger-only service, WSF plans to dispose of these four ferries.

WSF's 2006-2030 Draft Plan assumes three groups of vessel acquisitions and dispositions, with a total of fourteen new vessels and fourteen retirement/sale of vessels. Funding for the first group of new vessels, four 144-vehicle expanded Issaquah class vessels, has been approved by the legislature. Under the proposed Draft Long Range Plan, by 2030 the fleet returns to its current size of 28 vessels, with no passenger-only ferries. By 2030 the fleet would also be more uniform, with sixteen extended Issaquah class 144-car vessels and six Issaquah class vessels.

Table 4. Fleet Acquisition Plan

Vehicle Capacity	Fleet -current	Group 1 (06-13)	Fleet 2013	Group 2 (14-21)	Fleet 2021	Group 3 (22-30)	Fleet 2030
> 200	3 Mark II		3		3		3
140-190	4 Super 2 Jumbo	4 new (144 car)	10	4 new (144 car)/ 1 retire Super	13	6 new (144 car) 3 retire Super	16
90-120	6 Issaquah		6		6		6
90	3 Evergreen		3		3	1 retire	2
45-60	6 Steel Elec/others	4 retire	2	1 retire	1		1
Passenger-only	4	Retire/sell					
Total Vessels	28		24		26		28

2006-2030 Draft Plan pp. 46-48

In WSF's Draft Long Range Strategic Plan seven of the new vessels will be used to expand service, while five will replace retired vessels. Additional vessels for more frequent service are planned for the Central Puget Sound travel shed on the Edmonds-Kingston and Bremerton-Seattle routes, the Mukilteo-Clinton route and travel shed, the Keystone-Port

Townsend route and travel shed, the South Sound travel shed on a new Seattle-Southworth route, and for the San Juan Islands travel shed.

B. Vessel Acquisition Dependence on Actual Ridership

In WSF's Draft Long Range Strategic Plan, acquisition of new vessels is contingent on ridership. The plan states: "While the plan was designed as WSF's best means of accommodating the projected future growth in ridership, this growth reflects changes in demographics and regional travel patterns that may or may not come to be. . . .In recognition of that fact, the plan has been designed to be flexible – equipped to handle as much of the projected growth as possible, but capable of being scaled back to avoid over investment if that growth does not materialize. Flexibility is possible because the vessels scheduled for purchase in the first and third decades of the planning period will primarily replace retiring vessels, while the majority of vessels needed for expansion are not scheduled until the second decade. *This schedule will allow WSF to observe real ridership growth until a decision point in 2010 before deciding what service enhancements are really necessary*" (emphasis added) (p. 45).

C. Previous Vessel Studies

The legislature has conducted three studies that dealt specifically with vessel acquisition and deployment: a 1991 Report on Management of Vessel Refurbishment Programs, a 1998 Department of Transportation Ferry System Performance Audit Report; and a 2001 Performance Audit of the Washington State Ferry System Capital Program.

The studies' 25 recommendations regarding vessel construction, most of which have been fully or partially implemented, fall into the four areas.

- Policy and pre-planning requirements (4 recommendations)
- Specification development (4 recommendations)
- Contracting (9 recommendations)
- Contract management (8 recommendations)

The studies note the importance of preserving vessels as a core investment for WSF. This is particularly important because of the anticipated 60 year life of vessels.

The studies also note the importance of legislative direction in establishing contracting procedures. The legislature has acted on recommendations allowing WSF more flexibility in vessel contracting.

The 2001 performance audit recommended three changes to the state's procurement policies: examine and pursue alternative procurement strategies; allow the procurement of auto ferry equipment and systems through a Request for Proposals (RFP) process without first requesting an exception to the invitation-for-bid process from the Washington State Secretary of Transportation; and seek legislative authority to allow the use of a modified RFP process to procure large new ferry construction.

The recommended changes in procurement policies have been implemented through actions of the legislature. SHB 2221, approved in the 2001 legislative session, enabled WSF to

negotiate single sole-source contracts for vessel maintenance/preservation when there is only one bidder able to accommodate a vessel or class of vessels in their facility, and streamlined the approval process for utilizing the RFP process. SHB 1680, approved in the 2001 legislative session, included authority for WSF to utilize the modified RFP process for new vessel construction.

D. New Vessels

The legislature appropriated funds in the 2005-07 biennium for four new vessels. Legislative staff reviewed the history of funding for the vessels since the 2003 legislative session.

In 2003 the legislature included funding for four vessels at a total cost of \$284.7 million. In 2005, a fifth vessel was added with passage of the Transportation Partnership Act. This vessel was deleted in the 2006 legislative session to meet cost increases and to increase the size of the remaining vessels from the originally contemplated 130 vehicles to 144 vehicles. Costs have increased \$37.2 million or 13 percent since 2003.

WSF is currently involved in litigation over contracting for the four new vessels. The status of the litigation and other procurement issues were not reviewed in this study.

Table 5. Vessel Procurement Funding 2003-06

(\$000s)

	Legislative Sessions				Total	% (03-06)
	2003	2004	2005	2006		
# of new vessels planned	4	4	5	4		
Funding	284.7	284.9	351.3	321.9		
Major Changes						
Add one vessel (TPA fund)			66.4			
Increase size to 144 vehicles				24.0		
Cost increases		0.2		13.8		
Remove fifth vessel				-67.2		
Change in funding		0.2	66.4	-29.4	37.2	13%

Source: Legislative staff

E. Consultants' Observations

1. Flexibility in Vessel Planning

The consultants note that WSF plans to review actual ridership before proceeding with additional vessel acquisition for service improvements. The initial review is anticipated to be in 2010. When considering future vessel acquisitions, it will be important for the legislature to understand the link between the proposed acquisition and actual ridership.

Section Seven

Terminal and Repair Facility Plans

Under the ferry finance decision model, vessel service levels drive capital planning for terminals and the Eagle Harbor repair facility. It is critical that terminal plans are able to accommodate operational and pricing modifications to moderate demand as well as meet projected ridership.

This section is based on a review of WSF's terminal and Eagle Harbor repair facility capital budget from the 2006 legislative session, which is \$1.2 billion over sixteen years (2005-21).

In reviewing the terminal and repair facility plan, it is necessary to understand the definitions WSF uses in its capital program. The consultants found that WSF uses a very broad definition of preservation, with limited differentiation between the preservation and improvement program. This is important in view of the 2001 Legislative Task Force on Ferries recommendation that the legislature give priority in funding to preservation projects.

WSF uses separate life-cycle cost models to develop its preservation projects for vessels and terminals. The preservation budget is based on the 2001 Legislative Task Force on Ferries recommendation that funding be provided to enable WSF to have 90 to 100 percent of its vital systems and 60 to 80 percent of its non-vital systems operating within their life cycle by 2015.

The consultants' review of terminal preservation projects found that the terminal life-cycle cost model needs to be improved to be more useful as a planning tool. The consultants believe that the condition of terminals is a better measure of terminal preservation, and recommend that a terminal condition rating system be developed.

The consultants found that a high percentage of expenses in the preservation program do not affect the key measure of increasing the life of structures or systems. These non-life cycle expenses account for 42 percent of WSF's 2005-07 biennium terminal preservation budget.

The consultants also found that replacement projects included in the preservation program are very similar to improvement projects. The consultants recommend that improvement and replacement projects be combined into one improvement category to make the intent of the project more clear. The consultants also found that systemwide projects, including administrative overhead, are attributed solely to the preservation program, therefore overstating the amount of the budget going to preservation.

Improvement and replacement projects are reliant on the ridership projections included in WSF's Draft Long Range Strategic Plan, and are being planned using terminal design standards intended to complement the boat-wait level of service standards. The result is large vehicle holding areas and other expenses that might be moderated by the proposed review of pricing and operational strategies. The consultants also recommend that, similar to the vessel plans, WSF develop a method of staggering terminal projects based on actual ridership.

The consultants also recommend a systematic project cost-benefit analysis and life-cycle costing approach to terminal development, and that WSF identify for the legislature costs related to community concerns and the development of multi-modal facilities for joint use with other transit agencies.

A. Capital Program

1. Categories

WSF has three categories of projects for its terminal capital program: emergency repair, preservation, and improvement. (These categories are also used for WSF's vessel capital program.)

WSF's preservation category includes projects that preserve the structural, mechanical, or electrical integrity of infrastructure. The category also includes projects under which WSF replaces a terminal in its entirety when it is no longer prudent to replace systems or the terminal's characteristics are no longer suited to the WSF service plan. WSF preservation projects may also improve program efficiency and effectiveness, be necessary for regulatory compliance, result in cost savings or cost avoidance, and/or benefit customers and the public.

Improvement projects are intended to meet changes in demand and increase capacity, and/or provide mobility options.

Table 6. Capital Project Category Definitions

Project Type	Definition
Emergency Repair	<ul style="list-style-type: none"> • Address damage and/or unanticipated regulatory requirements
Preservation	<ul style="list-style-type: none"> • Preserve the structural, mechanical or electrical integrity of infrastructure • May elect to replace a terminal in its entirety when not prudent to replace systems or the assets characteristics are no longer suited to WSF's service plan • Improve program efficiency & effectiveness • Regulatory compliance • Cost savings or cost avoidance • Benefit customers and the public
Improvement	<ul style="list-style-type: none"> • Meet changes in demand and increase capacity • Provide mobility options

2. Life-Cycle Cost Models

WSF uses a life-cycle concept to identify investments needed to ensure its vessels and terminals are preserved. The terminal and vessel life-cycle cost models rely on the same concepts, and are based on an inventory of the systems and structures on a vessel or at a terminal.

Systems and structures are divided into two groups: vital systems (vital to the protection of people, the environment, or infrastructure), and non-vital systems (all other systems). An estimated life is determined for each system and structure based on: (1) the date of initial installation or last major refurbishment, (2) a standard anticipated life for the type of system or structure, and (3) modifications for actual condition based on inspections.

As noted in the 2001 Capital Program Performance Audit, “the integrity of the information developed from the models is directly related to the accuracy of the models’ inventory” (p.23). The performance audit indicated that “vessels and terminals are subject to various third party inspections and are also routinely inspected by WSF personnel. When planned inspections or incidents occur that impact lives of a specific system or structure, this information is updated in the life-cycle cost model” (p. 24).

3. Life-Cycle Rating

WSF identifies a life-cycle rating for vital and non-vital systems to track performance. The life-cycle rating is the percentage of a vessel’s or terminal’s systems that are operating within their life cycles at a particular point in time. This percentage is weighted by the cost of replacement so that the percentage reflects the overall cost of replacing the system when due.

WSF tracks performance against goals recommended by the 2001 Joint Legislative Task Force on Ferries, which are to have by 2011 (now estimated to be 2015):

- 90 to 100 percent of vital systems operating within their life cycle, and
- 60 to 80 percent of non-vital systems operating within their life cycle.

B. Terminal and Repair Facility Capital Program

WSF’s 2005-21 biennia terminal capital program includes 67 projects with separate project identification numbers (PINs), with a total budget of \$142.6 million for the 2005-07 biennium and \$1.2 billion for the 2005-21 biennia. Forty-three of the projects are for specific facilities and 24 are systemwide projects. Of the 67 projects, 24 are classified as improvement projects and 43 as preservation projects.

The 24 improvement projects for the 2005-07 biennium have a budget of \$63.4 million (44% of the total), and the 43 preservation projects have a budget of \$79.2 million (56% of the total). For the 2005-21 biennia, the improvement project budgets are \$516.3 million (42% of the total), and the preservation budgets are \$699.7 million (58% of the total).

Table 7. Terminal/Repair Facility Projects

Projects	# PINs	Improvement	Preservation	05-07 (\$000s)	05-21 (\$000s)
Terminals/Repair Facility*	43	22	21	\$118,266	\$1,091,310
Systemwide Projects	24	2	22	24,382	124,663
Total	67	24	43	\$142,648	\$1,215,973

*Includes systemwide catch-up preservation project

More than half of the capital budget is for projects at Anacortes, Bainbridge Island, Mukilteo, Seattle Colman Dock, Eagle Harbor repair facility, and systemwide projects.

Table 8. Terminal Capital Budget, By Location*

(\$000s)				
	05-07	%	05-21	%
Anacortes	30,844	22%	119,857	10%
Systemwide	24,382	17%	124,663	10%
Bainbridge	21,867	15%	178,277	15%

	05-07	%	05-21	%	
Eagle Harbor	15,617	11%	37,368	3%	
Mukilteo	14,528	10%	130,873	11%	
Seattle	9,043	6%	228,912	19%	> ½ budget
Friday Harbor	7,521	5%	22,676	2%	
Southworth	3,704	3%	31,493	3%	
Keystone	2,200	2%	31,231	3%	
Lopez	3,279	2%	17,092	1%	
Port Townsend	2,959	2%	37,293	3%	
Edmonds	1,500	1%	57,607	5%	
Kingston	987	1%	29,334	2%	
Orcas	967	1%	12,851	1%	
Tahlequah	1,443	1%	5,334	0%	
Vashon	850	1%	44,723	4%	
Bremerton	90	0%	30,602	3%	
Clinton	289	0%	38,792	3%	
Fauntleroy	150	0%	24,802	2%	
Point Defiance	368	0%	4,338	0%	
Shaw	60	0%	7,855	1%	
Total	142,648		1,215,973		

*Distributes the catch-up preservation project to affected terminals

C. Preservation Projects

There are 43 preservation projects with a budget of \$79.2 million in the 2005-07 biennium and \$699.7 million through the 2021 biennia.

1. Terminal Preservation Projects – Life-Cycle and Non-Life Cycle Costs

WSF reports that in 2005, 73 percent of its terminal vital systems and 44 percent of non-vital systems were operating within their life-cycle. WSF uses these life-cycle ratings and the impact of the preservation budget on these measures as a key budget justification.

Preservation projects include a number of expenses that do not affect life-cycle ratings, which WSF refers to as non-life-cycle expenses. There are two main types of such expenses:

- *Non-life-cycle expenses within individual terminal preservation projects.* Examples include property acquisition, interim preservation (maintenance) projects, purchase of emergency generators to support the electronic fare system, environmental mitigation, and placeholder preservation allowances.
- *Non-life-cycle systemwide projects intended to meet other preservation criteria, such as efficiency and effectiveness, cost savings, and regulatory compliance.* Examples of these expenditures include the electronic fare system implementation, terminal physical security infrastructure, and miscellaneous terminal projects.

In the 2005-07 biennium, 58 percent of the budget as shown in the WSF life-cycle model affects life-cycle ratings and 42 percent does not. For 2005-21, 74 percent of the budget affects life-cycle ratings and 26 percent does not.

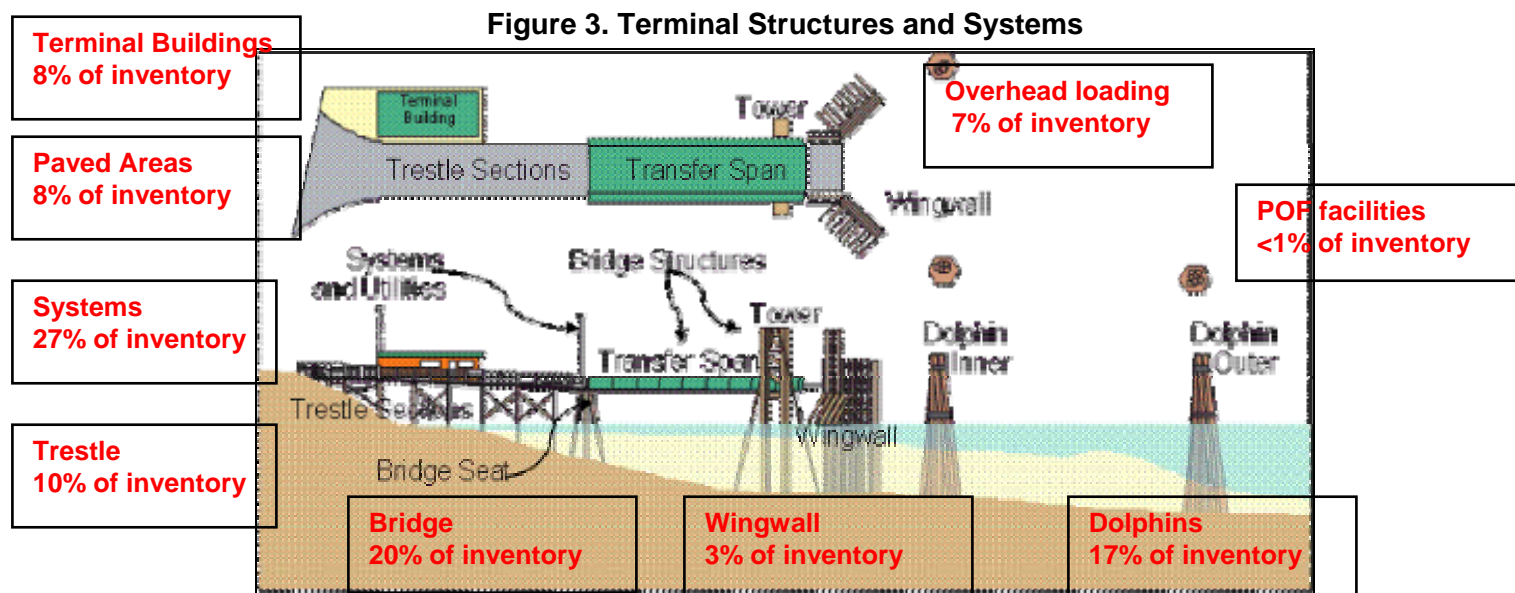
2. Life-Cycle Cost Model

The terminal life-cycle cost model is the basis for the portion of the preservation budget that preserves structures and systems.

a) Inventory

The terminal life-cycle cost model categorizes terminal structures and systems into nine categories. The types of structures and systems and the percentage of each type in the 966 items in the terminal inventory is shown below in Figure 3.

Figure 3. Terminal Structures and Systems



b) Inventory updates

A key element in the life-cycle model is keeping the inventory updated to reflect condition inspections and the life-cycle of new steel and concrete structures that are replacing older timber structures. The consultants found that these updates have not been consistently done.

When developing the initial inventory, WSF did not have the ability to inspect each of the 254 items in the “systems” category (such as water systems, sewer systems, etc.). Therefore, WSF arbitrarily assigned all items (except the point-of-sale system) a life of twenty years. However, in most cases, the system is not ready to be replaced at the end of twenty years, even though the results are being calculated into the percentage of systems operating within their life-cycle.

Not consistently updating the inventory and including items that are not replaced at the end of the “standard” life-cycle makes the model less useful as a tool for budget planning and performance reporting, and runs the risk of presenting inaccurate and overstated preservation projections. For example, the consultants asked WSF to run various scenarios adjusting, for

example, the standard life-cycle of steel structures from 25 to 30 years. This adjustment alone makes a 3 percent difference in the percentage of vital systems operating within their life-cycle. The difference would increase even more in later years, since only the first steel structures installed by WSF will come due for replacement during the 2005-21 capital program period.

At the request of the consultants, WSF also provided a life-cycle cost model projection that eliminates the system category. In the later years of the capital program, the percentage of systems operating within their life-cycle increased by 3 percent for vital systems and 4 percent for non-vital systems.

3. Terminal Conditions

The consultants reviewed the actual condition of the terminals based on WSDOT bridge inspections reports. These inspections indicate that most of the terminals are in good condition, and present a different picture from that suggested by the life-cycle cost model.

The consultants developed a sample condition rating system. In this sample, 84 percent of systems inspected were in a state of no deterioration (State 1), and 96 percent had either no deterioration or minor deterioration in which corrective action is optional (State 1 or 2 condition).

4. Replacement Preservation Projects

The preservation projects include replacement or significant additions to six facilities: Anacortes, Bainbridge Island, Eagle Harbor repair facility, Keystone, Port Townsend, and Seattle Colman Dock. At four of these facilities, one or more preservation projects are managed in conjunction with one or more improvement projects.

a) Non-life cycle expenses

The replacement preservation project budget includes 64 percent of the terminal related non-life-cycle expenses in the 2005-07 biennium, and 74 percent in the 2005-21 biennia time period. The high percentage of non-life cycle expenses in these projects is due to the fact that they share expenses with the associated improvement projects and are similar to improvement projects. For example, a \$3.75 million property acquisition on Bainbridge Island was funded by the Bainbridge Island terminal preservation project (\$0.15 million), the Eagle Harbor repair facility preservation project (\$2.0 million), and the Bainbridge Island Multimodal improvement project (\$1.6 million).

In other cases, the non-life cycle expenses are attributable to the fact that the project is very similar to an improvement project. This is particularly striking in the case of the Keystone Alternative project, which includes \$13.2 million in site work for the relocated terminal. In the case of the Mukilteo and Edmonds improvement projects, both of which involve moving terminals a similar distance, these expenses are treated as improvement expenses.

b) Early life-cycle costs

The replacement of structures before their due date to accommodate an improvement project is categorized by WSF as a life-cycle rather than a non-life cycle expenditure. The Port

Townsend preservation project is replacing some structures in advance of their life-cycle replacement date in order to accommodate the improvement project.

c) Master plan expenses

Although not identified separately in the budget and thus not counted as non-life-cycle costs, replacement project budgets can include expenses for master plans and studies. For example, 93 percent of the \$1.8 million in costs incurred in the current biennium through July 2006 for the Seattle Colman Dock Long Range Plan have been charged to the preservation project.

d): Draft Long Range Strategic Plan

The scope of the replacement projects is reliant on the ridership projections from the Draft Long Range Strategic Plan. An example is the case of the Keystone Alternative project. The project is intended to “maintain existing service and accommodate future growth on the Keystone-Port Townsend route” (WSF Keystone Project Scoping Outreach and Comment Summary, p. 1). The analysis of options assumes increases in ridership based on the Draft Long Range Strategic Plan projections.

e) Community costs

WSF can experience difficulties with local communities in expanding its facilities. As part of the Eagle Harbor repair facility preservation project, WSF has developed a master plan for the facility. This plan has generated considerable local concern and opposition from the City of Bainbridge Island. The project is currently delayed as WSF appeals the City’s attempt to assume lead agency status for the State Environmental Protection Act (SEPA) review. The preservation program includes \$870,900 for Shoreline Substantial Development Permit mitigation measures.

5. Systemwide Preservation Projects

The preservation program includes 22 systemwide preservation projects with budgets totaling \$24 million for the 2005-07 biennium and \$122.4 million through 2021. The systemwide preservation projects are all for non-life cycle costs and include all of the overhead expenses for terminal projects. None of the overhead expenses are attributed to the improvement program. This results in overstating the preservation program.

6. Catch-Up Preservation Projects

The Nickel Package includes catch-up preservation projects totaling \$38.2 million through 2013. The project is intended to assist WSF in catching up on its preservation goal of having 90 to 100 percent of vital systems and 60 to 80 percent of non-vital systems operating within their life-cycle by 2015. The catch-up preservation budget includes interim preservation projects that do not affect the life cycle of the structures and are essentially maintenance projects. These expenses are 17 percent of the 2005-07 biennium catch-up preservation budget and 11 percent of the 2005-13 biennia budget.

D. Improvement Projects

There are twenty-four terminal improvement projects with a budget of \$63.4 million in the 2005-07 biennium and \$516.3 million in the 2005-21 biennia. The improvement budget is primarily devoted to the Anacortes, Bainbridge Island, Edmonds, Mukilteo, and Seattle terminals.

1. Draft Long Range Strategic Plan

The terminal improvement projects are based on the ridership projections and service plans in the Draft Long Range Strategic Plan. For example, the Bainbridge Island projects will result in a much larger terminal building and vehicle holding area to accommodate “ridership projected to grow to 11.5 million by 2030” (www.wsdot.gov/ferries).

The Seattle Colman Dock master plan anticipates the addition of a fourth slip to accommodate the Draft Long Range Strategic Plan’s proposed new Southworth to Seattle route, and enlargements of the terminal building and holding areas to accommodate projected ridership.

2. Flexibility in Terminal Plans

As discussed in Section 6, the Draft Long Range Strategic Plan has a staggered approach to increasing the capacity of the fleet, with the two additional vessel acquisition groups to be reviewed based on actual ridership experience.

Unlike the vessels, the terminal improvement projects have limited flexibility. The terminal improvement projects are being planned for the projected ridership with large capital infrastructure investments that are not intended, in most cases, to be phased with actual ridership but rather with funding availability. As an example, in the Keystone Harbor Study, the ridership projection past 2010 is driving the selection of the vessel type for the Keystone-Port Townsend route, which is in turn driving the Keystone terminal configuration. The cost-benefit analysis in the study assumes that a third Keystone special vessel would be needed on that route to support ridership demand in 2018, and that after 2010 a smaller vessel could not meet projected ridership demand on any other route.

On the other side of the route, the Port Townsend improvement project, with a budget of \$13.4 million, will increase the vehicle holding capacity from 210 cars to 310--a 48 percent increase. This expansion is based on the Strategic Plan’s projected 43 percent increase in vehicles on this route between 2005 and 2030 (Draft Long Range Strategic Plan, p. 42). The project will extend the trestle 180 feet further over the water in order to create waiting space for 90 more vehicles, for a total of 190 at the terminal. The other 120 spaces will continue to be on the road and at a new remote holding area that will accommodate the same number of vehicles as the current remote holding area.⁶ There is no flexibility once the trestle is expanded. If an option were developed to create more off-site holding area parking rather than expanding the trestle, then the holding area could expand or not based on ridership.

Some of the projects are to be phased with ridership. The September 2006 quarterly report for the Edmonds terminal indicates that the third pier would be added later based on ridership.

3. Vehicle Holding Areas

The increase in capacity of the system is primarily driven by the projected increases in vehicular demand. Although the number of tolling booths and other elements are being enlarged to accommodate the projected increase in vehicular use, the primary impact on the

⁶ WSF’s Sept. 2006 quarterly report indicates that the number of vehicles to be accommodated at the expanded terminal is 190, plus 90 in the removed holding area. The map on the project web site indicates that the expanded terminal will accommodate 170 cars and the remote holding area 80.

terminals is on the size of the vehicle holding areas. Many holding areas are proposed to be on trestles over water, which are expensive to construct and to maintain.

The design guidelines used for terminal improvement and replacement projects are based on level of service standards intended to complement the boat wait standards. These terminal level of service standards involve the minutes of delay for a vehicle on the approach roadways prior to passing the tollbooth.

These design guidelines have resulted in larger vehicle holding areas than under boat wait scenarios. At Bainbridge Island the 1998 master plan included a 330-vehicle holding area that would accommodate 1.5 boat loads of cars. Under the new terminal standards, the Bainbridge Island terminal is planning for a 575-vehicle hold area. In Edmonds, which has a one-boat wait level of service standard, the terminal standards result in an 820-vehicle holding area.

4. Walk-On Facilities

Although the growth in service levels and capital investment is primarily driven by the projected increase in vehicular demand, the Draft Long Range Strategic Plan anticipates a large percentage increase in walk-on passengers, especially during commute periods.

The terminal buildings are being sized to accommodate these anticipated increases in ridership. The consultants asked each of the project managers what throughput they were using to plan the size of new terminal buildings. Each indicated that planning was to accommodate the peak level of ridership.

As an example, the new Anacortes terminal building will increase from 5,200 square feet to 31,000 square feet. The ridership projection in the Draft Long Range Strategic Plan shows that for the Anacortes based routes to the San Juans and Sidney, there is a substantial summer peak. Winter ridership falls to a weekday average of 412 passengers and 516 vehicles in 2006, growing to 811 and 819 in 2030, under the draft plan levels of service. The terminal, as planned, is likely to be under-utilized much of the year.

5. Life-Cycle Costs

WSF has not done life-cycle costing for all of the proposed terminal improvement or replacement projects, with total operating and preservation costs projected over the life of the terminal.

a) Operating costs

Operating costs of the new terminals will be higher than for the current smaller terminals.

Operating costs bear directly on route and systemwide farebox recovery rates. For example, the Edmonds-Kingston route's recovery rate was 121 percent in 2003 and 108 percent in 2005. These percentages may change if the new terminal at Edmonds is constructed. The Environmental Impact Statement (EIS) for the Edmonds project shows that the total operating costs for phase one of the preferred alternative would be \$4.5 million, and for phase two \$4.7 million in 2003 dollars. By comparison, the 2003 route summary statement shows the current operating costs for both the Edmonds and the Kingston terminals is \$4.5 million. For phase two, WSF indicates it should be able to share some of the operating costs with other affected

agencies such as Sound Transit, Amtrak, and Community Transit, although agreement on the cost allocation has not been reached.

b) Terminal preservation costs

The preservation costs of the new terminals have not yet been estimated, although the terminal life-cycle cost model anticipates adding the new structures and systems when they are constructed. A life-cycle cost of the terminal improvement projects would provide an assessment of the long-term preservation costs of these expansions.

6. Project Cost Benefit Analysis

At the project level, WSF does not engage in systematic cost benefit analysis of tradeoffs. In some cases, as with the Keystone Harbor Study, WSF conducts a thorough cost benefit analysis in which it is possible to understand the assumptions and look at the tradeoffs in capital, operating, and preservation costs among the alternatives.

In other cases, individual project managers undertake partial cost benefit analysis. For instance, the Port Townsend project management team has examined the capital cost difference between off-site and overwater vehicle holding stalls, which shows that the cost of overwater holding areas are three times the cost of upland holding areas. WSF is recommending the overwater option based on operational efficiencies, but has not yet conducted a cost benefit analysis of the options.

**Table 9. Port Townsend
Cost Comparison of Overwater vs. Upland Holding**

	\$ per sf	sf per stall	\$ per stall
Overwater - trestle construction	\$120	200	\$24,000
Upland - land acquisition	\$20	200	\$4,000
Upland-grading & paving	\$20	200	\$4,000
<i>Total Upland</i>			<i>\$8,000</i>

Source: WSF

7. Ancillary Revenues

Ancillary revenues from concessions and leases at terminals help improve WSF's operating income and are part of the revenue calculation in determining farebox recovery. In some of the terminal projects, WSF is allocating additional space for concessions in anticipation of additional operating revenue. WSF's analysis also includes the period in which anticipated revenues would pay back the initial capital investment.

WSF has conducted a recent analysis of potential concession income at the new Anacortes terminal. This analysis shows the risks inherent in building concession space in concluding that WSF faces greater risk than originally anticipated when planning was done in 1996.

8. Phasing and Costs

Similar to replacement projects, terminal improvement projects are not intended to be flexible with ridership. Most of the terminal improvement projects are, however, phased for funding reasons (current programmed dollars are insufficient to complete the projects).

The project at Seattle's Colman Dock has a total budget, including the preservation project, of \$228.9 million for the 2005-21 time period. The project is at a master planning stage and estimates for the total project are very preliminary. Interviews with the project manager indicate that since the budget was developed, several additions have been made to the project. These include building to the silver Leadership in Energy and Environmental Design (LEED) standard, tribal mitigation, purchase of Pier 48, cost escalation factors, and the requirement for a 1,500-vehicle holding area to meet the new standard for sizing holding areas and the proposed Southworth Seattle service. The current preliminary estimate for the project is \$275 million.

The Edmonds terminal is being phased, with the first phase including two of three planned slips, a vehicle holding area for 600 vehicles, passenger overhead loading, and grade separation between ferry and rail traffic. The quarterly project report for September 2006 notes: "At this time, existing State and partnership funding will not complete the initial phase of construction. An additional \$37 million is needed to complete the first phase of the project; \$65 million more will complete the final phase of terminal construction" (Quarterly Project Report, Sept. 06, p. 1).

The Mukilteo terminal is also being phased. As indicated in the Draft EIS, "Because of the estimated costs associated with full buildout of the multimodal facility and current funding limitations, the actual implementation of the project may be phased over time. The initial phase of development would include all road improvements, the waterfront promenade, ferry terminal building, and holding facility. Construction of the parking garage is the major component that could be deferred beyond the 2010 opening year. Construction of the second slip could also be deferred beyond 2010 under the Compact Terminal Alternative" (Draft Mukilteo Multimodal Ferry Terminal EIS, February 2006, p. 3).

9. Community Costs/Concerns

As with the preservation projects, local community requirements are impacting ferry terminal planning and costs. A driving force for the Edmonds terminal relocation has been community concerns about the traffic impact of the existing terminal on adjacent streets. "[T]he City of Edmonds is soliciting for the Edmonds Crossing Design consultant contract and is the lead coordinating agency and project proponent on grant and legislative actions" (Letter August 22, 2006, WSF to City of Edmonds).

It should also be noted that for the Bainbridge terminal project and others, WSF has conducted considerable community outreach, working closely with local communities to identify issues of concerns and address them early in the design of the project.

10. Multi-Modal Costs

The improvement projects include costs to improve multi-modal connections, which are critical to increasing the percentage of riders who walk-on ferries. Members of the Ferry Finance Advisory Committee and legislators interviewed are concerned about the costs being borne by WSF that perhaps should be shared with other transit agencies. The Edmonds project is under consideration for funding in the Sound Transit 2 package intended for a 2007 ballot issue.

E. Consultants' Observations

1. Capital Program Definitions

a) Definition of a capital project

The consultants found that WSF is using capital funds to fund projects that do not substantially extend the life of its assets, and that are essentially maintenance projects. These types of projects include interim trestle preservation and transfer span retrofits, which extend the life of the trestle or transfer span for a few years until a major replacement is scheduled. The consultants recommend that WSF utilize the OFM definition of a capital project as a “project to construct either new facilities or significant long-term renewal improvements to existing facilities” (OFM 2007-2017 Capital Budget Instructions, p. 17). WSF’s category of interim preservation projects would, under this definition, be part of the maintenance budget.

b) WSF definition of preservation and improvement.

The consultants found that WSF’s classification of its terminal projects into preservation and improvement categories has created confusion. This is particularly true for replacement preservation projects. There is little difference between replacing an asset to “meet existing service plan” which WSF defines as preservation and adding “capacity to meet changes in demand and increase capacity” which it defines as improvement. Virtually any project can fall into the preservation categories of improving program efficiency and effectiveness, resulting in cost savings or cost avoidance, and/or benefiting customers and the public.

The consultants note that OFM has a more limited definition of capital improvement and preservation projects. Under the OFM definitions, WSF would classify projects as preservation only if they extend the life of an asset for a significant period of time. WSF would not classify projects as preservation that are replacing terminals and expanding them to meet service requirements. Nor would WSF classify projects as preservation that are intended to improve program efficiency and effectiveness, result in cost savings or cost avoidance, and/or benefit customers and the public. This change would mean that projects such as the Keystone Alternative and the Electronic Fare System would be classified as improvements. It would also reflect the reality that the preservation and improvement projects at terminals such as Bainbridge Island, Anacortes, and Seattle Colman Dock are managed as single projects.

2. Terminal Preservation Projects

a) Terminal life-cycle cost model

The consultants found that the terminal life-cycle cost model is not as useful a planning tool as it could be. To be more useful the model must: be based on an inventory that is regularly updated from maintenance and condition reports; include only assets that are replaced at the end of their life-cycle and not systems, such as water systems, that are replaced only when the terminal is rebuilt; and reflect more accurate information on the life-cycle of concrete and steel structures. The consultants recommend that the legislature not consider information from the life-cycle cost model until it has been updated and modified to make it a more useful planning tool.

b) WSF terminal condition rating

The consultants found that the condition rating of terminals provided through bridge, mechanical, and dive inspections provides a good third-party rating of the condition of terminal assets. The consultants recommend that a condition rating performance measure of terminal preservation be developed. Condition ratings are already in use elsewhere in WSDOT, including for road pavement and bridge conditions. A condition rating system is less dependent on the ability of WSF to keep the life-cycle model information current, may provide a better picture of the state of preservation of WSF's systems and structures, and is easier to communicate to decision-makers (i.e., it is easier to understand whether structures and systems are in good, fair, poor or substandard condition than to understand the percent of vital and non-vital systems and structures operating within their life cycle.)

c) Allocation of systemwide overhead projects between preservation and improvement

The consultants found that WSF attributes all systemwide overhead projects to the preservation budget. The consultants recommend that a basis be developed for allocating those overhead costs between the preservation program, as re-defined, and the improvement program, as re-defined.

d) Inclusion of non-life-cycle related expenses in facility-specific preservation projects

The consultants found that within the preservation budgets of specific facilities, there were non-life-cycle costs, including property acquisition, master plan development, purchase of emergency generators to support the electronic fare system, and other costs. The consultants recommend that these costs not be included in facility preservation budgets but rather be included in improvement budgets, since they do not extend the life of a system or structure.

e) Inclusion of non-life-cycle costs in the catch-up preservation project

The consultants found that 17 percent of the catch-up preservation project budget, specifically provided to allow WSF to catch-up with its life-cycle goals, was being used on work that does not extend the life-cycle of structures or systems. The consultants recommend that these expenses not be included in the catch-up preservation project.

3. Terminal Replacement and Improvement Projects

a) Replacement preservation and improvement projects

The consultants recommend that replacement and improvement projects be combined into the improvement capital budget. This would be consistent with OFM definitions and allow the legislature to see more clearly the relationship between these improvements and the Draft Long Range Strategic Plan.

b) Terminal improvement and replacement projects relationship to ridership

The consultants found that the Draft Long Range Strategic Plan provides flexibility in the scheduling of new vessels, so that vessel planning can be changed as real ridership is known. However, there is only limited flexibility in the terminal plans. The legislature should consider giving priority to those terminal projects that are designed to be flexible based on actual ridership. Examples of flexibility might include: terminal buildings or vehicle holding areas that are built-out in phases; and developing upland or remote vehicle holding areas rather than building holding areas on permanent trestles, which require a greater initial capital investment and are difficult to modify once constructed.

c) Relationship to operational and pricing strategy review

As discussed in Section 5, the consultants found that WSF has not done a thorough review of operational and pricing strategies. Many of these strategies would directly affect terminal design standards. For example, the terminal design standards for vehicle holding areas would be affected by a reservation system. The consultants recommend that the operational and pricing review be completed before further work is done on major terminal replacement and improvement projects to ensure they can accommodate such changes.

d) Project cost benefit analysis

The consultants found that WSF does not always do a cost benefit analysis on its terminal projects. The consultants found that some have been done, as with the Keystone Harbor Study, and recommend that cost benefit analysis should be conducted on all major projects to ensure trade-offs are understood and documented.

e) Life-cycle cost analysis

The consultants found that WSF does not always do a complete life-cycle cost analysis of its new terminal construction. A complete life-cycle cost analysis would allow for a better prediction of the operating and preservation budget impacts of new construction. It will be important to understand these costs, particularly as they affect farebox recovery and future preservation budgets. (It should be noted that the life-cycle cost analysis is different from the life-cycle cost model, which is designed to predict preservation costs only.)

f) Business plan supporting investments intended to generate ancillary revenues

The consultants found that WSF is trying to improve farebox recovery through the addition of concession space. These are inherently risky investments. The consultants recommend that WSF consider providing temporary facilities to test concession income prior to making large capital infrastructure investments at terminals where there is limited concession experience, and/or provide a business plan that projects the rate of return from such investments.

g) Funding required to complete master plans

The consultants found that the 2005-21 biennia capital plan does not include sufficient funding to implement the master plans for several of the larger terminals. The legislature should be aware of any unfunded components of these master plans in order to gauge the level of future funding that may be necessary. This is particularly important for those projects where terminals are being entirely relocated.

h) Local impact costs

The consultants found that projects are incurring costs to satisfy local community concerns. In some cases, such as with the Eagle Harbor repair facility and the Mukilteo projects, funds are allocated for specific mitigation strategies. The legislature should be aware of these costs and provide direction in terms of state funding for local amenities.

i) Transit investments

The consultants found that some projects, such as Mukilteo and Edmonds, include large costs for the creation of facilities to enable passengers to connect to transit. This is an important component of the Draft Long Range Strategic Plan and is critical to increasing the percentage of riders who walk on ferries. The consultants recommend that the costs being borne in the ferry capital program for these structures be clearly identified for legislative direction.

j) Expert review

The consultants note that WSF does not routinely use expert review panels to review its terminal projects. An expert review panel would be helpful in reviewing terminal design standards and major projects. This will be especially important in reviewing terminal design standards to accommodate changes in operational and pricing strategies and to meet legislative direction regarding cooperation with other passenger-only ferry service providers.

4. Pre-Design Study

One way to implement the recommendations relating to life-cycle cost analysis, cost benefit analysis, and business plans for specific terminal projects would be to require WSF to submit a pre-design study on major projects. A predesign study is required by OFM for all major projects defined as “those with an estimated cost of \$5 million or more” (OFM Predesign Manual p. 6).

Section Eight Operating Financial Plan

The WSF financial plan evolves from the preceding steps in the ferry finance decision model. WSF's operating and capital financial needs are based on the service plan and need for investment in vessels and shoreside facilities.

This review of WSF's operating budget was conducted primarily by staff from the Senate and the House Transportation Committees. The consultants were asked to incorporate the legislative staffs' work into the ferry financing study, and have included additional analysis and consultant observations.

This review of WSF's operating budget is based on the 2006 legislative plan, amended by June 2006 projections of motor vehicle fuel tax and income from licenses, permits and fees.

The review notes WSF's high level of dependence on earned revenue, primarily from fares. In the 2005-07 biennium, earned income provides 77 percent of operating revenues.

As is the case in the Draft Long Range Strategic Plan, the legislative plan assumes that dedicated tax revenues and earned revenues going into the operating account will exceed operating expenses. The excess is to be transferred to support the capital program. The consultants do not believe, given the way labor costs are projected, that such transfers will be available in the magnitude contemplated and note that such transfers appear counter to the purpose of dedicating tax support to ferry operations.

This section discusses fares and farebox recovery, recommending that both the way fares are set by the TPC and the role of pricing strategies in controlling peak vehicle demand be examined. This section also reviews legislative direction with regards to tariffs, noting that the directions have been very broad.

Over 80 percent of WSF expenses are from labor and fuel costs. This section also reviews the impact of collective bargaining agreements on WSF's costs, noting that between labor and fuel costs, WSF management has little opportunity to effectively control operating costs.

A. Overview of Operating Resources

Table 10 shows ferry operating funds from the 1993-95 biennium through the forecast for the 2019-21 biennia.

B. Operating Revenues

1. Earned Revenue

The ferry system is supported primarily through farebox revenues. WSF also earns revenue from leases and concessions. In the 2005-07 biennium, earned income provides 77 percent of

Table 10. Ferry Operating Fund

(\$000,000s)

	actuals - LEAP & agency data								forecast																
	93/95	95/97	97/99	99/01	01/03	03/05	% 93-05	05/07	%	07/09	%	09/11	%	11/13	%	13/15	%	15/17	%	17/19	%	19/21	%	05/21	
FERRY OPERATING RESOURCES AVAILABLE																									
Puget Sound Ferry Operations Account (Account 109) and Marine Operating Account (Account 519) Revenues:																									
Farebox Revenues *	148.8	157.8	173.6	192.3	230.9	259.4	71%	289.6	75%	321.0	82%	353.5	89%	382.3	94%	410.1	99%	437.3	103%	465.8	107%	496.0	113%	3,155.5	
Motor Vehicle Excise Tax	45.4	51.6	59.8	14.4	(0.0)	(0.0)	11%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	
Motor Vehicle Fuel Tax **	28.4	30.8	32.7	33.5	34.1	34.7	12%	35.3	9%	37.7	10%	40.0	10%	41.4	10%	42.5	10%	43.4	10%	44.3	10%	45.4	10%	329.9	
Motor Vehicle Fuel Tax - Capron**	-	-	-	-	-	-	0%	3.0	1%	8.3	2%	9.5	2%	10.0	2%	10.3	2%	10.6	2%	10.9	3%	11.3	3%	73.8	
Licenses, Permits, and Fees **	10.7	11.1	11.8	12.3	13.5	13.7	4%	15.1	4%	15.6	4%	16.3	4%	16.8	4%	17.3	4%	17.8	4%	18.3	4%	18.8	4%	135.9	
Income from Property*	1.9	3.6	1.0	2.9	2.7	3.8	1%	6.5	2%	8.5	2%	9.7	2%	9.7	2%	10.4	2%	10.9	3%	11.6	3%	12.3	3%	79.6	
Miscellaneous	1.0	2.9	5.0	(4.9)	(6.0)	1.2	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	
	236.3	257.7	283.9	250.4	275.2	312.8	99%	349.4	91%	397.0	100%	429.0	108%	460.7	113%	490.5	118%	520.0	122%	550.9	127%	583.7	133%	3,774.8	
Transfers & Direct Appropriations:																									
Multi Modal Transportation Account	-	2.5	-	5.1	-	5.1	1%	3.7	1%	-	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	3.7
Motor Vehicle Account	-	-	-	-	38.3	31.3	4%	31.0	8%	-	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	31.0
PS Capital Construction Account**	-	-	-	(67.0)	-	(22.0)	-5%	-	0%	(1.0)	0%	(30.0)	-8%	(54.0)	-13%	(75.0)	-18%	(95.0)	-22%	(117.0)	-27%	(146.0)	-33%	(518.0)	
General Fund	-	-	-	20.0	-	-	1%	-	0%	-	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-
	-	2.5	-	(41.9)	38.3	14.4	1%	34.7	9%	(1.0)	0%	(30.0)	-8%	(54.0)	-13%	(75.0)	-18%	(95.0)	-22%	(117.0)	-27%	(146.0)	-33%	(483.3)	
TOTAL OPERATING INCOME	236.3	260.2	283.9	208.5	313.5	327.2		384.1		390.0		399.0		406.1		415.5		425.0		433.9		437.7		3,291.4	
FERRY OPERATING COSTS																									
Expenditures - actuals/2006 Leg Plan:																									
WSF Operations	220.6	236.0	258.7	302.4	310.3	329.1	97%	375.9	97%	379.1	97%	386.6	97%	395.2	97%	403.6	97%	412.3	97%	421.3	97%	430.4	97%	3,204.3	
WSDOT	4.5	7.9	3.8	10.8	11.5	9.1	3%	9.9	3%	10.1	3%	10.2	3%	10.4	3%	10.7	3%	10.9	3%	11.1	3%	11.3	3%	84.5	
Marine Employees Commission	0.3	0.3	0.3	0.3	0.3	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.5	0%	3.4	
TOTAL FERRY OPERATING COST	225.4	244.2	262.8	313.4	322.1	338.6		386.2		389.5		397.2		406.0		414.7		423.6		432.8		442.2		3,292.2	
Estimated PSOA Balance at end of biennium								0.4		0.9		2.7		2.8		3.7		5.1		6.2		1.8			
* 2006 Legislative Plan																									
** June 2006 Forecast																									

revenue. Of that 77 percent, 2 percent was from concessions and other non-farebox income. Earned income is projected in the legislative plan to exceed direct operating expenses starting in the 2013-15 biennium. By the 2019-21 biennium, earned revenue is expected to exceed direct operating costs by 16 percent, with farebox revenues contributing 13 percent.

2. Dedicated Operating Tax Support

The Puget Sound Ferry Operations Account receives dedicated tax support from the motor vehicle fuel tax; motor vehicle registration fees; combined licensing fees; and 80 percent of treasury deposit earnings. Additionally, in 2006 the legislature decided that the fuel taxes and fees collected from the additional gas taxes levied in 2003 and 2005 in San Juan and Island counties would be made available for WSF operations through the 2019-21 biennium rather than being returned to the counties under the Capron laws.

3. Transfers to Capital

The legislative plan anticipates transfers from the Puget Sound Ferry Operations Account to the Puget Sound Capital Construction Account, which supports the WSF capital program. By the 2019-21 biennium, 16 percent of earned revenue is anticipated to be transferred to the capital account, along with 100 percent of the dedicated tax support. This transfer is anticipated to be \$518 million through the end of the 2019-21 biennium.

C. Farebox Revenue

Fares are the most significant source of revenue for WSF, providing 75 percent of the operations account in the 2005-07 biennium. Fares are projected to fully fund direct operating expenses by 2015-17, with the additional funds transferred to the capital account.

1. Farebox Revenue Growth

Farebox revenues are projected using the econometric model discussed in Section 3. As a result of projected ridership growth and tariff increases, farebox revenue is projected to grow between 6 and 11 percent per biennium between the 2007-09 and 2019-21 biennia.

2. Tariff Route Increases

Tariffs increased 62 percent between 2001 and 2006 in response to the loss of MVET funding. Tariffs are projected to increase 2.5 percent per year from 2007 to 2021, as stated in the 2006 legislative financial plan. New tariffs are effective each May 1.

3. Sources of Farebox Revenue

The most significant source of farebox revenue is vehicle tariffs, accounting for 75 percent of all farebox revenues. Vehicle tariffs include the vehicle and driver, plus other vehicles, such as motorcycles and trucks. Passengers account for 24 percent of farebox revenues. Miscellaneous revenues make up the remaining 1 percent of farebox revenue.

4. Tariff Structure

WSF has a complex tariff structure with more than 2,500 ticket types, including 810 possible fares for the Anacortes-San Juan Islands and Sidney B.C. routes. Passenger fares include three basic categories (full fare, youth and senior/disabled), with discount books or passes available for frequent users. On the San Juan routes there are also peak fares and weekend premiums.

Vehicle fares are more complex. They include: vehicle and driver fares for cars under 20 feet; regular fares, senior or disabled fares at approximately 85 percent of the full fare rate; height surcharges and length fees. All routes have peak season vehicle rates and the San Juan routes also have weekend rates.

With the exception of the Port Townsend-Keystone and Anacortes-Sidney routes, passenger fares are sold as round trip tickets at one terminal on each route. Vehicle fares are collected one-way on all routes except the San Juan Islands, the Vashon Island routes in the South Sound travel shed, and the Pt. Defiance-Tahlequah route, where they are collected round-trip from one terminal. Members of the Ferry Finance Advisory Committees and others are concerned that collecting fares one-way encourages people to use the free part of the route and return by highway. This is of particular concern for passengers going from Southworth or Bremerton to Seattle when the Tacoma Narrows Bridge construction is complete as fares are collected westbound only on these routes.

5. Tariff Policies

Ferry tariffs are set by the Washington State Transportation Commission (WSTC).

a. Legislative direction

The legislature has provided broad direction to the WSTC on factors it may consider in reviewing tariffs:

- 1) The amount of subsidy available to the ferry system for maintenance and operation.
- 2) The time and distance of ferry runs.
- 3) The maintenance and operation costs for ferry runs with a proper adjustment for higher costs of operating outmoded or less efficient equipment.
- 4) The efficient distribution of traffic between cross-sound routes.
- 5) The desirability of reasonable rates for persons using the ferry system to commute daily to work and other frequent users who live in ferry-dependent communities.
- 6) The effect of proposed fares in increasing walk-on and vehicular passenger use.
- 7) The effect of proposed fares in promoting all types of ferry use during non-peak periods.
- 8) The estimated revenues that are projected to be earned by the ferry system from commercial advertisements, parking, contracts, leases, and other sources.
- 9) The pre-purchase of multiple fares, whether for a single rider or multiple riders.
- 10) Such other factors as prudent managers of a major ferry system would consider (RCW 47.60.326).

RCW 47.60.330 states that before increasing ferry tolls, the department is to consider all possible cost reductions, with full public participation regarding the possible reductions, and also to consider adapting service levels equitably on a route-by-route basis to reflect trends in and forecasts of traffic usage.

b. Tariff Policy Committee

Existing state law requires WSF to solicit advice from Ferry Advisory Committees in considering tariff changes.

RCW 47.60.330 states that before a substantial expansion or curtailment of service or a revision in the schedule of ferry tolls or charges, the department is to consult with affected ferry users by:

- a. Public hearings in affected local communities, or
- b. Conducting a survey of affected ferry users, and
- c. Review with ferry advisory committees pursuant to RCW 47.60.310.

The WSTC has created a 20-member Tariff Policy Committee (TPC) to assist it in meeting these statutory obligations. The TPC includes:

- Ferry Advisory Committees – 6 members
- Transit Agencies – 4 members
- King County Labor Council – 1 member
- Washington State Bicycle Advisory Commission – 1 member
- Washington State Senate – 2 members
- Washington State House – 2 members
- WSF Chief Financial Officer – 1 member
- Business interests – 1 member
- Chair – 1 member
- WSTC – 1 non-voting member

c. Tariff issues

The TPC's review in 2005-06 of fare increases and transportation demand management included discussion of the following issues.

- *Fare increase and fuel surcharge:* The TPC recommended and the WSTC adopted a 6 percent general fare increase effective May 2006, but did not recommend a fuel surcharge, because they felt the state should cover the increased fuel cost.
- *Traffic demand management:* The TPC examined traffic demand management, including the passenger/vehicle fare relationship, congestion (time-of-day) pricing and value pricing, but did not make changes in this tariff cycle.
- *Tariff Route equity:* This program is based on the relationship of fares among routes. All riders are expected to contribute equally to the fixed costs of the ferry system, and each rider to contribute proportionally for the space used and the time occupying space on the vessel. Rates are established for the Central Sound routes and then distributed based on tariff route equity variables to the other routes.

d. Electronic fare system

WSF is implementing an electronic fare system that will be integrated with the regional fare collection program (SmartCard) among seven transit providers. The system will improve cash control and customer service. The TPC has adopted tariff changes to integrate with the electronic fare system. To date, the electronic fare system is in use at the Port Townsend and Keystone terminals and on Anacortes-based routes.

D. Concessions and Other Revenue

Income from concessions and other leases was 1 percent of revenue available for ferry operations between the 1993-95 and 2005-07 biennia. In the 2005-07 biennium, this income is

projected to be 2 percent of revenue, and is anticipated to grow to 3 percent by the 2019-21 biennium.

From 1995 to 2005, on-board concessions were the largest source of concession revenues. For 2006 through 2015, WSF projects growth in revenue from: on-board food, beverage and retail sales; wireless communication; terminal food, beverage, retail, vending, advertising, and parking revenues. WSF is projecting a higher reliance on terminal based revenues, particularly from parking, vending, and concessions.

E. Overview of WSF Expenses

Labor and fuel costs have historically been 78 percent of WSF operating expenses, and are projected to be 83 percent in future biennia. Labor is the largest expense at 60 percent historically, and projected at 62 percent for future biennia.

The 2006 legislative financial plan assumes a 0.8 percent to 2.2 percent annual increase in WSF expenses to 2021. From 1993 to 2005, the actual average cost increase was 9.4 percent.

F. WSF Labor Costs

Labor constitutes approximately 60 percent of WSF's operating costs. Labor costs are driven primarily by Coast Guard requirements for minimum staffing levels on vessels, labor contracts, and WSF department heads' decisions within their approved budgets.

1. Labor Cost and Positions Increase

Over the last ten years, annual labor cost changes have ranged from a 2 percent decrease to an 8 percent increase. This pattern reflects the changes in full time equivalent (FTE) positions as well as service or other cost reductions. The largest labor costs are: vessel staff (67 percent of labor costs from 1996 through 2006); followed by terminal staff (17 percent); maintenance staff (13 percent); and administrative staff (4 percent).

2. Labor Union Agreements and Collective Bargaining

Ninety-two percent of WSF employees are represented by bargaining units, including eleven separate labor organizations.

Historically, WSF negotiated agreements with labor unions separately from the rest of the state. However, in 2006 the legislature modified the process for entering into labor agreements for WSF employees. Under this legislation, WSF is to use the same timeframe as used in other state labor negotiations. In the event of an impasse, WSF and the bargaining unit must submit to binding arbitration. Funding to implement an agreement must be certified as financially feasible by the director of OFM. Once certified, the request is included in the Governor's budget proposal to the legislature. If the legislature rejects or fails to act on the request, either party may reopen the agreement.

3. Labor Relations

WSF labor relations are subject to the processes conducted by the Marine Employees Commission (MEC), rather than the Public Employee Relations Commission, which covers

other represented state employees. The MEC is responsible for adjusting complaints, grievances, and disputes; providing for impasse mediation; and conducting salary surveys.

The relationship between WSF and the unions has often been contentious. The 1998 JLARC Performance Audit found that labor relations bargaining and dispute resolution processes adversely affect the ability of WSF to operate effectively and efficiently, and that the organization experiences an extraordinary number of unfair labor practice charges and grievances.

There are two outstanding labor related lawsuits that could impact WSF operating costs: one involving engine room employees and the other licensed deck employees. The total fiscal impact of the dispute regarding engine room employees is \$7 to \$8 million and the dispute regarding deck employees could cost WSF \$275,000 per year back to February 2003.

4. Key Labor Agreement Provisions

The labor agreements that affect WSF operations have a number of provisions that affect WSF costs.

- ***Eight-hour minimum call:*** WSF labor agreements provide for a minimum eight hour consecutive day, which means that WSF cannot schedule split shifts or less than eight hour shifts to meet peak demand or other scheduling requirements.
- ***Overtime Pay:*** Labor agreements provide that WSF employees receive double time pay for overtime, rather than the one and a half time pay provided other state employees. They also receive a full hour of overtime after 15 minutes and 15 minutes of overtime for overtime between 1 and 15 minutes. Overtime pay represents 8 percent of annual total labor wages paid by WSF in FY 1996 through FY 2006. Seventy percent of overtime expense is incurred by vessel staff, followed by maintenance staff at 18 percent and terminal staff at 10 percent.
- ***Travel Time:*** WSF employees receive compensation for travel between terminals and, in certain circumstances, for travel between their home and terminal if not assigned to the terminal nearest their home. Travel time pay represents between 2 percent and 3 percent of annual total labor wages paid by WSF from FY 1996 through FY 2006. Most of the travel time expense is incurred by vessel staff, varying from 81 percent to 91 percent of annual travel time costs from FY 1996 through FY 2006.
- ***Penalty Pay:*** Penalty pay is paid for certain categories of work. Penalty pay was 1 percent of total labor wages paid by WSF in FY 1996 through FY 2006. Seventy-five percent of penalty pay goes to vessel staff, and 25 percent to Eagle Harbor maintenance staff.
- ***Minimum Staffing Provisions:*** Labor agreements require staffing on vessels beyond those required by the Coast Guard to staff the vessels safely, and what WSF would do if not required by labor agreements. Nine percent of vessel crewing and 7 percent of costs included in the analysis are the result of labor union requirements, at a cost estimated at \$4.3 million annually.
- ***Other Provisions:*** Other non-salary provisions that affect WSF's operating costs or represent lost revenues include additional paid holidays, half-price meals on vessels, uniforms and jackets, schooling, crew minimum staffing, and ferry passes. These provisions have an estimated cost of \$3.0 million a year, of which \$1 million

represents foregone revenue from the provision of free passes to employees, retirees, and their families.

- ***Scheduling:*** Contracts for some of the maritime bargaining units also affect how WSF schedules staff for vessels, terminals, and the Eagle Harbor maintenance facility. This can lead to increased overtime and travel pay.

5. Vessel Labor Costs

Vessel labor is 67 percent of all labor costs and is the most impacted by overtime, travel time, and penalty pay provisions. Overtime, travel time, and penalty pay were 13 percent of total vessel staffing costs from FY 1996 through FY 2006.

6. Impact of Recent Labor Agreements and Settlements

The transfer of responsibility for labor negotiations from WSF to the Governor's office has resulted in settlement of all outstanding labor agreements. These combined with various arbitration agreements will result in increased labor costs for WSF of \$8.9 million for FY 2007 and ongoing costs of \$27.7 million per biennium.

G. Fuel Costs

In the 2006 legislative plan, fuel is projected to be 21 percent of WSF expenses from the 2005-07 biennium through the 2019-21 biennium. Fuel expenses were projected to increase by 45 percent from 2003-05 to 2005-07. This projection was based on the February 2006 fuel forecast. However, an updated forecast in September 2006 projects that ferry fuel prices will stabilize and begin to decrease from a peak of \$2.47 per gallon in FY 2008 to a low of \$1.96 per gallon in FY 2013. Consumption is assumed to be constant at 17.7 million gallons per year.

H. Impact of Cost Changes on Operating Fund

The labor cost increases and changes in forecast of fuel prices will affect the Puget Sound Ferries Operating Account, reducing its ability to transfer funds to the capital account. The 2006 legislative plan assumed a \$518 million transfer to the capital account, but increased labor costs expected in the 2007-09 biennium and changes in fuel costs will likely reduce this transfer to \$420.3 million. This projection depends on all other assumptions regarding costs and revenues remaining constant.

I. Farebox Recovery

Farebox recovery, as used by WSF, shows the percentage of WSF operating costs and WSDOT costs that are recovered by earned revenues from the farebox and other income. In FY 2005 recovery is at 76 percent systemwide, ranging from a low of 23 percent on the Vashon-Seattle passenger-only ferry service to a high of 111 percent on the Seattle-Bainbridge route. (The FY 2005 farebox recovery rate was higher than it might otherwise have been because of the delay in settling outstanding labor agreements.)

WSF has not historically calculated the percentage of total earned income against total ferry expenses, including expenses incurred by WSP and MEC nor shown the percent of direct tax support against operating costs. Legislative staff have calculated these additional recovery percentages on a biennium basis. Their analysis shows that for the 2005-07 biennium, earned

income is projected to be 72 percent of WSF operating costs (farebox 70 percent and other income 2 percent) and direct tax support 13 percent. Earned income as a percentage of all ferry operating costs is expected to be 67 percent, with direct tax support providing an additional 12 percent.

J. Consultants' Observations

1. Operating Transfers to Capital

a) Availability of surplus operation revenue

The 2006 legislative plan and WSF's Draft Long Range Strategic Plan both assume significant capital funding from operations. The availability of operating funds to support the capital program is impacted by rising labor costs and the volatility of fuel costs, which together represent 80 percent of WSF expenses.

The legislature's 2006 financial plan inflates future labor costs at 70 percent of inflation (using the implicit price deflator for personal consumption (IPDPC) rate). The state does not forecast labor expense increases beyond this inflation rate or beyond costs that have been negotiated which means that the operating budget projections are likely significantly understated. This makes it unlikely, absent higher rate increases, service reductions, or the transfer of additional motor vehicle taxes, that surplus operating funds will be available to transfer to the capital account at the forecasted level.

b) Fund balance

The WSF operating account retains a \$5 million reserve, approximately 1 percent of ferry operating expenses. The reserve cannot grow when the operating surplus is transferred to fund the capital account. The transfer makes operating funding less stable, since if earned and dedicated tax revenues in one biennium exceed expenses, the surplus is not available to compensate for shortfalls in subsequent biennia.

c) Legislative intent in dedicating tax revenues to operations

The legislature has dedicated a portion of the motor vehicle fuel tax and other license, permit, and fee income to ferry operations. RCW 47.60.326 states that the WSTC may consider "the amount of subsidy available to the ferry system for maintenance and operation" in setting rates. The transfer of dedicated tax revenues to capital would appear to negate the intent of dedicating tax revenues to support operations. At the same time, it makes fares less predictable because the amount of fare revenue that could be used to support the capital program is almost indefinite.

d) Farebox and other earned revenue

As projected in the 2006 legislative financial plan, the amount transferred from operations to capital includes revenue earned from fares and concessions. If farebox and concession revenue is to be used to support capital, the consultants recommend that this policy be clearly stated.

e) Uncertainty in capital funding

The intention to transfer funds from operating to capital makes capital funding subject to the volatility of operating revenues and expenses.

2. Tariffs and Other Earned Revenue

a) Legislative guidance

The legislature has provided limited guidance on tariff policy. RCW 47.60.326 includes ten considerations that the WSTC may make with regards to setting tariffs, but does not require any of them to be considered. The law also does not prioritize the areas the WSTC may consider. The 2006 legislative financial plan assumed future yearly fare increases of 2.5 percent, which may not be sufficient to meet future operating expenses which have historically grown 9.4 percent per biennium.

b) Tariff Policy Committee

The Tariff Policy Committee (TPC) was created by the Transportation Committee (WSTC) at a time when the Commission had administrative responsibility for WSDOT. The role of the WSTC was changed by the 2005 Legislature, with responsibility for hiring and firing the Secretary of Transportation and providing management direction for WSDOT transferred from the Commission to the Governor. The WSTC remains responsible for tolling, preparation of the Washington State Transportation Plan, bond sales, highway classification, freight and goods transportation system designation, and preparation of a ten-year investment program. The TPC includes elected officials which makes it more difficult to separate the legislature from independent tariff decisions by the WSTC.

c) Public outreach

RCW 47.60.000 establishes public participation requirements for major service reductions or expansions and for tariff changes. The law provides the option of public hearings in local communities or a survey of affected ferry users, and requires consultation with the Ferry Advisory Committees. The TPC has conducted public hearings rather than undertaking a survey of affected ferry users. The result is that the TPC hears from and is affected by organized groups of ferry users, but has limited information of potential affects on the broad base of ferry users.

d) Tariff route equity/travel shed differences

A key concept that the TPC uses in making fare decisions is tariff route equity. The concepts that underpin the tariff route equity program are reasonable, i.e. that users should share equally in covering the fixed costs of ferry system operation and contribute proportionally for vessel space and time. Under this program, rates are set for the Central Puget Sound routes, rounded to the nearest nickel, and then applied on a percentage basis to the other routes.

The tariff route equity concept does not allow for recognition of the differences in the travel sheds served by WSF. Three of the travel sheds, Keystone-Port Townsend, Anacortes-San Juan Island, and Anacortes-Sidney, are heavily dependent on tourists with a limited or non-existent commuter base. In contrast, commuters are the core of riders in the Central Puget Sound.

Tariff route equity is currently adjusted for travel shed considerations. This affects farebox recovery, leading to, as an example, the relatively low 51 percent farebox recovery rate on the Bremerton-Seattle route because the rate for Bremerton is set lower than it would be based on its length alone. The lower rate is to match the Bainbridge fares so there is not an undue shift of riders from Bremerton to Bainbridge.

e) Traffic demand management pricing strategies

The TPC reviewed tariff based traffic demand strategies during the last tariff review cycle. To be most effective, these traffic demand and pricing strategies should be tailored to the individual travel sheds, which will require adjustments to tariff route equity. The consultants also note that the TPC has discussed, but not implemented, traffic demand management and pricing policies as ways to improve vehicle occupancy and to transition riders from vehicles to walk-ons.

f) Non-peak ridership

WSF earns most of its operating revenue from fares and has a largely fixed cost operation, with the cost of operating a vessel the same no matter how many riders are on it. WSF has ample capacity to accommodate increased ridership in non-peak periods. If ridership can be drawn from peak periods it will achieve an important traffic demand goal, and if ridership overall can be increased it will help achieve greater revenues. British Columbia Ferries, for example, engages in promotional partnerships with hotels and other entities to encourage off-peak ridership.

g) Farebox recovery by route

Farebox recovery will vary between routes based on market characteristics and operating costs. Goals for farebox recovery have been discussed on a systemwide basis, with a goal of 80 percent cost recovery recommended by the 2001 Legislative Task Force on Ferries. There is relatively little discussion of individual route farebox recovery rate goals or of ways to improve recovery on a route-by-route basis.

h) Concessions and other revenue

Concessions and other revenues are a small portion of WSF's earned revenue, with the majority of this revenue derived from vessel based concessions, parking, and vending. Some revenue is currently generated from advertising, with WSF assuming more income from an advertising RFP that has not yet been released.

i) Review one-way fare collection system

Members of the Ferry Finance Advisory Committee and others are concerned that WSF's one-way fare collection system encourages riders to take the free leg of the trip and a highway route the other way. This policy should be looked at particularly for those routes that will be affected (i.e. Southworth and Bremerton) when the new Tacoma Narrows Bridge is complete.

3. Expense Projections

a) Management control of expenses

Fuel and labor account for nearly 80 percent of WSF operating costs. Ninety-two percent of WSF's employees are covered by labor contracts with binding pay provisions. As a consequence, management has very limited opportunities to manage and control costs.

b) Fixed cost operation

WSF has a high fixed cost operation. Coast Guard and union staffing requirements do not vary with passenger levels, with the result that vessels cost the same to operate with one passenger or 2,000 passengers. Terminal costs do vary with ridership, but the variable portion of terminal costs are a relatively minor part of WSF's operating costs.

c) Projection of costs by route

WSF provides projections of costs at the systemwide level, but limited projections at the route or travel shed level. It is important to understand the variations in cost by route in order to analyze route farebox recovery.

d) Labor agreements

Labor agreements constrain WSF operations and drive additional staffing, overtime, and other costs. The most significant constraints to the WSF operation appear to be the required eight hour minimum shift and consequent inability to operate with split or part-time shifts. This makes responding to peak demands on those routes that experience significant AM and PM peaks more difficult. Also significant are the costs from extra vessel staffing required by labor union agreements that are beyond Coast Guard requirements.

e) Service modifications

One of the ways WSF can control costs is to make service modifications, with the ability to save funds constrained by labor agreement requirements. The consultants asked WSF to provide an analysis of savings from service reductions. WSF notes that: "Elimination of one or more round trips can have varying degrees of impact on the cost to run the system. Only by removing a vessel entirely from service can the full cost savings for fuel and all deck crew be achieved" (WSF response to JTC Finance Question B. 6 September 25, 2006).

Section Nine

Capital Financial Plan

The WSF financial plan evolves from the preceding steps in the ferry finance decision model. WSF's operating and capital financial needs are based on the service plan and need for investment in vessels and shoreside facilities.

This section examines the sixteen year capital plan based on the 2006 legislative financial plan. The definition of capital projects used in the plan was discussed in Section 7.

The consultants note that the amount of capital funding needed by WSF cannot be determined until the ridership, level of service, and pricing and operational strategy reviews are complete. WSF will also need to improve the terminal life-cycle cost model and/or develop a terminal condition rating system in order for the legislature to be confident in the terminal preservation capital requirements.

The consultants note, however, that the capital funding available from dedicated tax sources (\$793 million over the 2005-21 biennia) is inadequate to fund the likely magnitude of WSF's capital program. The 2006 legislative plan includes \$736.6 million in transfers and direct appropriations from the motor vehicle fund (for debt service), and for specific projects from the Multi-Modal Transportation Account, the Transportation 2003 (Nickel) account and the 2005 Transportation Partnership Account. Discretionary motor vehicle fund transfers of \$704.9 million are included in the plan as well as \$519.8 million in transfers from the operating fund. As discussed in Section 8, the consultants have found it unlikely operating funds will be available to transfer in the projected amount and have further recommended that the Legislature not plan on such transfers in order to stabilize the operating fund.

The magnitude of the gap in capital funding cannot be determined until the analyses recommended in the earlier parts of the ferry finance decision model are completed. The gap in capital funding is likely to be the largest financial problem facing WSF.

A. Capital Program

WSF's capital program provides funding for emergency repair, preservation and improvement of WSF's terminals, the Eagle Harbor repair facility, and WSF's vessels.

WSF has a sixteen-year capital program, with a legislatively approved project list adopted each biennium. The project list, maintained by the Legislative Evaluation and Accountability Program (LEAP) Committee, includes all prior project expenditures for those projects still on the list, project appropriations for the current biennium, and projected project budgets for the next seven biennia. The only funds appropriated are for the current biennium.

WSF's capital program is part of the Washington State Department of Transportation's (WSDOT) capital budget. The WSDOT capital (and operating) budget is submitted to the

(\$000,000s)

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Final Report

Governor through OFM for review and approval prior to its submittal to the legislature.

B. Capital Resources

Table 11 shows ferry capital funds from the 1993-95 biennium through the forecast for the 2019-21 biennium.

1. Capital Account Dedicated Revenues

Taxes and fees dedicated to the ferry capital account represent 39 percent of capital revenues between the 1993-95 and 2003-05 biennia. With the loss of MVET in 1999, funding from dedicated tax revenues are 12 percent of capital revenues in the 2005-07 to 2019-21 biennia. Federal grants provide approximately 10 percent of capital revenues. Bond proceeds were 22 percent of capital revenues between the 1993-95 and 2003-05 biennia, and are 5 percent in the 2005-07 to 2019-21 biennia.

2. Committed Transfers and Direct Appropriations

Eighteen percent of ferries capital funding is anticipated to come from the 2005 Transportation Partnership Account and the 2003 Nickel package. The Motor Vehicle Fund Accounts pays a portion of WSF's debt service, accounting for 8 percent of ferry capital funding in the 2005-07 to 2019-21 biennia.

3. Discretionary Transfers and Direct Appropriations

a) Discretionary Motor Vehicle Fund Account support

The legislature has increased the proportion of ferry capital funding from the Motor Vehicle Fund Account in response to the loss of MVET funding. Between the 1993-95 and 2003-05 biennia, discretionary appropriations from the Motor Vehicle Fund Account provided 17 percent of capital funding. This has increased to 26 percent (\$704.9 million) in the 2005-07 to 2019-21 biennia.

b) Transfers from operating

As discussed in Section 7, the legislative plan includes a transfer of \$519.8 million in the 2005-07 to 2019-21 biennia from the operating fund based on projected excess revenue in that fund. This represents 19 percent of capital funding during that time period.

C. Capital Expenditures

1. Debt Service

Debt service is 18 percent of ferries' capital expenditures, with 8 percent of that coming from the Motor Vehicle Fund Account and the remaining 10 percent from other capital resources.

2. Capital Plan

Eighty-two percent of WSF's capital expenditures are to support its capital plan.

Terminal preservation projects (as currently defined by WSF) account for 32 percent of the total capital program for the 2005-07 biennium and 31 percent for the 2005-21 biennia. Vessel preservation projects are 40 percent of the capital program for the 2005-07 biennium and 43 percent for the 2005-21 biennia.

No vessel improvement funds are included in the 2005-21 capital program. Terminal improvements (as currently defined by WSF) account for 26 percent of the 2005-07 capital program and 23 percent of the 2005-21 biennia capital program.

Table 12. Capital Program

	(\$000s)				
	Prior	05-07	%	FY 05-21	%
Terminal Preservation	55,833	78,895	32%	699,342	31%
Vessel Preservation	85,378	97,532	40%	967,675	43%
Terminal Improvements	29,634	63,753	26%	516,631	23%
Vessel Improvements	0	0	0%	0	0%
Emergency Repairs	2,579	4,000	2%	56,795	3%
WSF Capital Program	173,424	244,180		2,240,444	

D. Prioritization

WSF's Capital Committee is responsible for selecting projects to include in the capital program. The Committee includes WSF's Chief Executive Officer, Chief Financial Officer, Director of Operations, Director of Maintenance, Director of Terminal Engineering and Director of Vessel Engineering. This same committee oversees management of WSF's capital program.

The projects selected by this Committee are placed on a proposed project list, which is submitted to OFM and the legislature for consideration in the transportation budget. To prioritize the discretionary elements of WSF's capital program, the Capital Committee utilizes the Priorities of Government and what it considers expressions of legislative intent, particularly the recommendations of the 2001 Joint Legislative Task Force on Ferries. The legislature does not give WSF discretion in using Nickel and Transportation Partnership Act funds; these funds are available only for projects named by the legislature.

WSF uses information from its life-cycle cost models to prioritize preservation work. A 2004 WSF report notes that this prioritization process "is presently more an art than a science, requiring an understanding of several factors: the service needs of individual routes; the anticipated . . . level of funding that will be available . . . ; the possibility of securing permits in a timely manner . . . ; the ability to deliver a project within a specified time frame . . . ; and reconciliation of the project delivery cycle . . . and the state's two year funding cycle" (Life-Cycle Based Programming of Ferry Terminal Preservation, July 8, 2004, pp. 8-9).

Project selection is also guided by a preservation strategy that places top priority on failed structures or systems, the second priority on preserving vital systems and structures, and the lowest priority on preserving non-vital systems and structures. These priorities are balanced to ensure progress toward the Joint Legislative Task Force on Ferries preservation goals of 90 to 100 percent of vital systems and structures operating and 60 to 80 percent of non-vital systems and structures operating within their life-cycles.

For replacement and improvement projects, prioritization is based in part on the recommendations of the 2001 Joint Legislative Task Force on Ferries. For the 2001-03 biennium, the Task Force recommended funding the Mukilteo and Anacortes terminal projects that address preservation and multimodal needs (Joint Task Force Report, p. 14). The priorities also reflect Nickel and Transportation Partnership specified projects.

E. Consultants' Observations

1. Capital Funding Needed

The consultants note that the amount of necessary capital funding cannot be determined until the ridership, level of service and pricing and operations strategies reviews are complete. WSF also needs to improve the terminal life-cycle cost model and/or develop a terminal condition rating system in order for the legislature to be confident in the terminal preservation capital requirements.

2. Capital Funding Available

The consultant note that capital funding available from dedicated tax sources (\$793 million in the 2005-21 biennia) is undoubtedly inadequate to fund the likely magnitude of WSF's capital program. The 2006 legislative plan includes \$736.6 million in committed transfers and direction appropriations, \$704.9 million in discretionary motor vehicle fund transfers and \$519.8 million in projected transfers from the operating fund. The total capital 2005-21 biennia capital program of \$2.8 billion may not adequately fund WSF's capital needs, particularly if transfers from the operating fund are not included in capital funding.

The magnitude of the gap in capital funding cannot be determined until the analysis required in the earlier parts of the ferry finance decision model is completed. The gap in capital funding is likely to be the largest financial problem facing WSF.

3. Availability of Operating Fund Transfers

As discussed in Section 8, the consultants have found it unlikely operating funds will be available to transfer in the projected amount and have further recommended that the Legislature not plan on such transfers in order to stabilize the operating fund.

4. Capital Prioritization Process

The capital prioritization process should be reviewed and clarified if new definitions of preservation and improvement are adopted in accordance with earlier consultant observations. It will be important to include in the prioritization process the relative importance of investments needed to implement traffic demand pricing and operation changes and to meet legislature directions on coordination with non-WSF passenger-only ferry service providers.

Section Ten Recommendations

The purpose of the ferry finance study is to facilitate policy discussions and decisions by the legislature. The study's recommendations are intended to facilitate those discussions and decisions and, consistent with the goals established in SSB 6241, to improve transparency in WSF financial decisions leading to predictable cash flows, a better organizational structure, maximum operating efficiency and better labor relations.

The recommendations are based on the proposed ferry finance decision model as a framework for legislative policy discussions and decisions.

The first step in the ferry finance model is the projection of ridership demand and the second is to determine how that demand affects the WSTC level of service standards for passengers and vehicles. A review of operational and pricing strategies that would allow WSF to maintain the level of service standards as demand increases is the third step, followed by the development of a vessel acquisition and deployment plan. This in turn drives the shoreside terminal and repair facility plan. WSF's long range operating and capital financial needs are based on the resulting service plan and need for investment in vessels and shoreside facilities.

While recognizing that the legislature will have to make decisions simultaneously at the different points in the decision-model, this overall framework will enable the legislature to have a clear context within which to make policy decisions.

This study makes 23 recommendations for the legislature's consideration.

A. Overarching Recommendations

1. Use the Ferry Finance Decision Model to Frame Legislative Reviews and Authorizations

The legislature should use the ferry finance decision model to frame its policy discussions and decisions. This means that the legislature would require assurance that the ridership projection is reasonable, a review of the level of service standards and a review of pricing and operational strategies as the basis upon which to determine long range vessel and terminal service and capital and financial plans. Without following such a framework, the legislature is at risk of authorizing capital projects that, for example, might preclude what are determined to be beneficial pricing or operational changes or that do not reflect revised ridership projections.

2. Recognize Travel Shed Differences

Each of the travel sheds is unique with differing ridership characteristics, vessel and terminal capacities and service areas. While operating as one system, understanding and accepting these travel shed differences is critical to transparency in WSF finances. It should be recognized and accepted that the travel sheds have, and will continue to have, different farebox recovery rates and unique operational and pricing considerations.

3. Separate Operating and Capital Finances

WSF capital and operating finances should remain separate. This particularly affects plans to transfer funds from the operating account to the capital account. The separation between operating and capital is important if fares and other critical operating revenue decisions are to have a meaningful relationship to operating expenses and are to lead to stable operating funding. If fares are set to cover part of the capital cost, this policy should be clearly distinguished, acknowledged to riders as a capital surcharge and deposited directly into the capital account.

4. Recognize the Importance of Fares to Generate Revenue and Affect Demand

Farebox revenues are the largest source of operating income to WSF and have been used, in the past, to fund portions of the capital program. Setting tariffs is a complex mix of revenue generation and traffic demand management pricing strategies.

5. Encourage Off-Peak Ridership Increases

WSF has a high fixed cost of operation with relatively little management control over labor or fuel costs, which represent 80 percent of operating costs. Coast Guard and labor contracts mean that vessel costs in particular do not vary with ridership -- it costs as much to travel with 10 riders as with 2,500. A key to improving WSF net revenues is to increase non-peak ridership and vessel capacity utilization. The legislature should consider funding co-promotion, advertising and other initiatives to increase non-peak ridership.

B. Ridership Projection Recommendations

Ridership projections are the foundation for WSF's financial plan. An assessment of the reasonableness of the ridership projection is the first critical step in the ferry finance decision model. To that end it is recommended that the legislature:

6. Require Reconciliation of Short and Long-Term Ridership Projections

The consultants recommend that the results of the econometric and travel demand models be reconciled so that there is a consistent projection for short and long-term planning.

7. Conduct an Independent Review of Projected Ridership

The legislature needs to have confidence that the projected ridership is reasonable before authorizing service and capital plans based on the projection. The legislature should conduct an independent review of the revised ridership forecast before acting on capital and operating budget requests that depend on the forecast.

8. In the Interim Use the Econometric Model Projections of Ridership for Capital Decisions

Until the reconciliation of ridership forecasts can occur and/or the legislature has approved a revised forecast, it is recommended that the legislature use the econometric demand model forecast as the basis for its review of capital requests. This is particularly important for decisions in the Central and South Sound travel sheds where ridership forecast in the travel demand model is substantially higher than that forecast in the econometric model.

9. Require a Market Survey of Recreation Users and Vehicle Drivers

a) Recreation users

The consultants have noted that WSF has little information on recreation users. Recreation use information is critical for projecting ridership and developing pricing and operational strategies for the San Juan Islands, Anacortes-Sidney and Port Townsend-Keystone travel sheds.

b) Vehicle drivers

The projected demand for vehicles is driving the proposed service improvements and system expansions in the Draft Long Range Strategic Plan. The consultants recommend a market survey to supplement the 2006 origin and destination study to determine vehicle drivers reaction to pricing strategies, operational changes, willingness to wait for boats, and other travel options.

C. Level of Service Standard

The second critical variable in the finance decision model is the level of service standard used to measure the ability of WSF to respond to projected ridership demand. The level of service standard has not been reviewed since it was established in 1994 by the WSTC. It is recommended that the legislature:

10. Require a Review of the Level of Service Standard for Vehicles

The consultants have noted that the level of service standard established in 1994 is applied throughout the 2006-2030 planning period. It is reasonable, in light of the increase in overall congestion, to consider modifications to the level of service standard for vehicles.

The review should also examine whether boat waits is the appropriate level-of-service measurement. It bears only limited relationship to the actual consumer experience, given the fact that significant numbers of drivers arrive very early at terminals to meet a particular sailing.

11. Conduct an Independent Review of the Proposed Level of Service Standard for Vehicles

The legislature needs to have confidence that the level of service standard is reasonable before authorizing service and capital plans based on the standard. It is recommended that the legislature conduct an independent review of the revised level of service standard before acting on capital and operating requests that depend on the standard.

D. Pricing and Operational Reviews

This study recommends adding to the ferries finance decision model a review of pricing and operational changes to manage demand by encouraging riders to walk-on and/or, if driving, to drive-on in non-peak periods. It is recommended that the legislature:

12. Require a Review of Operating and Pricing Strategies

The consultants have identified strategies, based on WSF review of options at Seattle's Colman Dock, that might encourage a shift from vehicle to walk-on passengers and/or encourage driving-on in non-peak periods. The cost-benefit and life-cycle costs of these

strategies should be thoroughly examined and, if beneficial, incorporated into vessel and terminal decisions. (Life-cycle costs in this instance are the total operating and capital costs of the alternative.)

a) Travel sheds and routes

A review of proposed operational and pricing strategies will be critical in the long-term finances of WSF. The legislature should conduct an independent review of the strategies.

13. Conduct an Independent Review of Proposed Operational and Pricing Strategies

Review of these strategies will be critical in the long-term finances of WSF. The legislature should conduct an independent review of the operating and pricing strategies.

E. Vessel Acquisition and Deployment

The fourth step in the ferry finance decision model is to determine the vessel acquisition and deployment plan to meet the level of service standard for projected passenger and vehicle ridership. It is recommended that the legislature:

14. Tie Vessel Acquisition Decisions to Ridership

WSF's Draft Long Range Plan proposes to review vessel acquisition in light of actual ridership experience throughout the 25 year planning period. A review of ridership in relation to vessel decisions should be required by the legislature when considering vessel acquisition requests.

F. Terminal and Repair Facility Plans

Under the ferry finance decision model vessel service levels drive terminal and Eagle Harbor repair facility plans. These plans must be able to accommodate operational and pricing modifications as well as meet projected ridership. The plans must also conform to legislative direction regarding non-WSF providers of POF service. Recommendations for the legislature's consideration relate to capital program definitions, preservation projects, and improvement projects.

15. Clarify Capital Project Definitions

The consultants have found that WSF's definition of what constitutes a capital project and its categorization of these projects leads to confusion and a lack of transparency. It is meaningless to define preservation as virtually anything (i.e. benefiting customers and the public) and then give priority to those investments.

a) Definition of capital

The consultants found that WSF is using capital dollars to fund projects that do not substantially extend the life of a system or structure, and that are essentially maintenance projects. The consultants recommend that the legislature require WSF to utilize the OFM definition of a capital project, a project to construct either new facilities or significant long-term renewal improvements to existing facilities.

b) Definition of preservation and improvement

The consultants found that WSF's classification of its terminal projects into preservation or improvement categories has created confusion. This is particularly true for replacement

preservation projects and for preservation projects intended to improve program efficiency and effectiveness, result in cost savings or cost avoidance, and/or benefit customers and the public. While worthwhile goals in and of themselves, they do not meet the more standard definition of preservation.

It is recommended that the legislature require WSF to use the OFM project category definitions. Under these definitions, preservation projects maintain, preserve *and extend the life* of existing state facilities and assets, and do not significantly change the program use of the facility. Improvement projects primarily achieve a program goal, such as changing or improving an existing space to new program requirements or creating a new facility or asset. This category is less concerned with life extension of a facility, and includes projects ranging from building new facilities to significant renovation of existing facilities. Improvement projects may also improve conditions and/or accommodate changes in service.

16. Revise Terminal Preservation Program

a. Require development of a terminal condition rating system as the basis for the terminal preservation capital program.

The legislature should require the development of a terminal condition rating system. This would be a better measure of the need for terminal preservation funding than the life-cycle cost model currently employed. A condition rating system is less dependent on the ability of WSF to keep the life-cycle model information current, would provide a better picture of the state of preservation of WSF's assets, and is easier to communicate to decision-makers (i.e., it is easier to understand whether assets are in good, fair, poor or substandard condition than to understand the percent of vital and non-vital systems and structures operating within their life cycle.)

b. Ensure that expenses are properly allocated to the terminal preservation program

The consultants found that 42 percent of WSF 2005-07 biennium preservation budget was for non-life-cycle expenses ranging from property acquisition to maintenance projects and overhead expenses (all of which were allocated to the preservation program). To review the preservation budget, the legislature should require WSF to submit a back-up that provides enough detail for the legislature to see that the preservation budget is for expenses that will extend the life of assets.

17. Condition Approval of Terminal Improvement Projects on the Independent Reviews of Ridership, Vehicle Level of Service Standard and Pricing and Operational Strategies

Terminal improvement projects are dependent on ridership projections, vehicle level of service standards and assumptions about operations and pricing. Approval of these projects should be conditioned on completing an independent review of ridership, the vehicle level of service standard and the review of operational and pricing strategies.

18. Conduct an Independent Review of Terminal Design Standards

Terminal design standards are the critical factor in ensuring that the terminals conform to the ridership, level of service standard, and ferry operating and pricing policies. Current terminal design standards have resulted, for example, in very large investments in vehicle holding

areas. Independent review of terminal design standards should be completed before legislative approval of these projects.

19. Require a Pre-Design Study on Terminal Improvement Projects Over \$5 million for Review by OFM and Legislative Transportation Committees.

A pre-design study that conforms to OFM requirements, would include a life-cycle cost analysis (i.e. total operating, capital and preservation costs over the expected life of the project), a cost-benefit analysis of alternatives, an identification of master plan costs and other information currently not systematically provided to the legislature when they are consider terminal improvement projects. The legislature should require pre-design studies on terminal improvement projects that exceed \$5 million, the OFM threshold for pre-design studies, for review by OFM and the legislative transportation committees. This recommendation is intended to prevent the legislature from making unintended and unanticipated legislative funding commitments.

20. Require WSF to Identify Costs to Meet Local Concerns and Provide Joint Use Transit Facilities

Legislators have expressed concern about expenses incurred by WSF to meet local concerns and to provide transit facilities that support joint WSF and non-WSF transit service. WSF should be required to identify these costs for legislative direction.

G. Operating Financial Plan

The WSF financial plan evolves from the preceding steps in the ferry finance decision model. WSF's operating financial needs are based on the service plan and need for investment in vessels and shoreside facilities. Recommendations for the legislature's consideration relate to the operating fund, tariffs and other earned revenue, and WSF expenses.

21. Revise Operating Fund Policies

a) Do not plan transfers from the operating fund to support capital

It is recommended that the legislature not plan on transferring operating funds to support the capital account. This would conform with the legislative intent in dedicating tax support to the operating fund, make fares relate clearly to WSF's operating expenses, and allow for greater operating fund balance.

b) Use a special surcharge directly to capital if fares are to support capital

If it is necessary to use fares to support capital, it is recommended that the funding come from a surcharge on fares that is clearly identified as dedicated to capital.

c) Allow greater fund balance in the Puget Sound Ferry Operations Account

Given its reliance on earned revenue, WSF should be allowed a greater fund balance than \$5 million or 1 percent of its expenses. This would allow WSF to carry over surplus funds from one biennium to another to ameliorate unexpected costs or shortfalls in earned revenues.

d) Balance operating fund with earned revenues and dedicated tax support

If transfers are not made from the operating to the capital account, WSF should be required to balance the operating budget through a combination of fares and other earned revenue and the dedicated tax support.

22. Revise Tariff Setting Directions and Policies

a) Amend RCWs to provide more specific direction on tariffs

The legislature should provide clear direction to the WSTC on setting tariffs. This direction could include requiring review of pricing strategies for traffic demand management, pricing to encourage non-peak ridership, and establishing farebox recovery goals by travel shed and route. This recommendation will require amendments to RCWs 47.60.300, 47.660.326 and 47.660.440.

b) Require a market survey in setting tariffs

The consultants found that the TPC has used public hearings in lieu of a survey of ferry users to establish tariffs. This means that the TPC hears from organized groups of customers, but not from the broad base of ferry riders. It is recommended that the legislature amend RCW 47.60.000 to require a market survey.

c) Direct the WSTC to examine the role of the Tariff Policy Committee

The legislature should direct the WSTC to consider assuming direct responsibility for tariffs, given its changing role.

d) Require more accurate projection of costs for tariff decisions

The legislature should direct WSF and the WSTC to base fares on an improved projection of costs, i.e. the historic pattern of 9.4 percent per biennium cost increases and/or projections based on service plans.

e) Recognize that costs will likely exceed the assumed 2.5 percent per year fare increases in the 2007-21 biennia

The legislative direction in the 2006 session, which has been incorporated in both the econometric and travel demand model ridership projections, is that fares will increase at 2.5 percent per year through the 2019-21 biennia. Costs have historically increased 9.4 percent per biennium, making it unlikely that 2.5 percent per year fare increases will enable the ferry system to meet operating requirements. If the recommendation that the operating fund be balanced through fares, other earned revenue and dedicated tax support is adopted, it will likely result in higher fare increases.

f) Review one-way fare collection system

The consultants recommend that the WSTC review the one-way fare collection policy on those routes where it exists. Members of the Ferry Finance Advisory Committee and others are concerned that this operating policy encourages riders to take the free trip and a highway route the other way. This policy should be looked at particularly for those routes that will be affected (i.e. Southworth and Bremerton) when the new Tacoma Narrows Bridge is complete.

H. Capital Financial Plan

23. Recognize Likely Shortfall in Capital Funding

The consultants believe there is likely a shortfall in capital funding. The magnitude of this shortfall cannot be determined until the ridership, level of service standard and pricing and operational strategy reviews are complete. Review of terminal preservation capital investment

needs based on the development of a terminal condition rating system will also be needed before the magnitude of the shortfall can be determined.

Section Eleven

Performance Measures

Concurrent with the ferry finance study, the JTC authorized a study on the Alignment of Benchmarks and Goals for Washington State's Transportation System.⁷ The study recommended that performance measures "should be directly aligned to overarching policy goals set by the Governor and Legislature. By using performance measures that are consistent and aligned with goals, we believe that we can improve the health of Washington's transportation system...and have recommended that future spending in the transportation system be made consistent with the goals and performance measures" (p.1).

The performance measures for ferries align with the ferry finance decision model and with the proposed five overarching goals for the state transportation system. The key performance measures for legislative consideration proposed under the ferry finance decision model fall under the mobility, preservation and stewardship goals. Table 13 shows the relationship between these performance measures and the proposed state goals.

A. WSF Performance Measures

1. Ridership

Ridership projections are the foundation of the WSF financial plan. Continuous reporting on actual versus projected ridership will be key to legislative reviews. Proposed measures are:

- Ridership actuals against projections from the econometric and the travel demand model
- Ridership by travel shed and route – actual vs. projected
- Peak and non-peak ridership trends
 - Impact of pricing and operational changes
- Relationship of ridership to vessel and terminal capital plans

2. Level of Service Standard

The level of service standard is the second key foundation of the WSF financial plan. The key measure is for vehicles, which is driving the demand for additional service and capital investment. The proposed performance measure is:

- Actual boat wait by travel shed/route for vehicles

3. Farebox Recovery

Farebox recovery requires the establishment of goals for both revenues and expenses and the projection of life cycle costs for improvement projects. (i.e. the total operating, capital and preservation costs over the life of the project). Proposed measures are:

- Actual farebox recovery versus projected by travel shed and route

⁷ One of the co-authors of the study was Cedar River Group, lead consultant on this study. See Report to the Washington State Joint Transportation Committee: Alignment of Benchmarks and Goals for Washington State's Transportation System Nov. 29, 2006 by Lund Consulting Inc. and Cedar River Group LLC.

- Projected farebox recovery over the 16 year period of the legislative financial plan

4. Condition Rating

The consultants recommend that WSF develop a terminal condition rating performance measurement system rather than using the current life cycle cost model performance measurement, which measures the percentage of vital and non-vital systems operating within their life cycle. The recommended performance measure is:

- Condition rating-(i.e. percentage in good, fair, poor or sub-standard condition)

5. On-Time and On-Schedule Capital Projects

WSF reports on the percentage of the capital budget expended in the Gray Notebook, WSDOT's performance report. This should be changed to a project report of on-time and on-schedule performance.

- Percent of projects on-time and on-schedule

6) Unit Costs and Revenues

The consultants recommend that WSF develop a measure of costs and revenues per passenger (or other unit of measurement) that would allow the legislature to see variances in costs with ridership or service changes. The recommended measure is:

- Revenue and costs per passenger by route and travel shed

B. Proposed Transportation System Goals

The proposed transportation system goals in the Alignment of Benchmarks and Goals study are:

Preservation: To maintain, preserve and extend the life and utility of prior investments in transportation systems and services.

Safety: To provide for and improve the safety and security of transportation customers and the transportation system.

Mobility: To improve the predictable movement of goods and people throughout Washington state.

Environment: To enhance Washington's quality of life through transportation investments that promote energy conservation, enhance healthy communities and protect the environment.

Stewardship: To be effective managers of the transportation system.

Table 13. Performance Measures

State-wide Goal	Ferry Finance Model	Performance Measure
Mobility	Demand	Ridership Measures <ul style="list-style-type: none"> • Ridership actuals against projects from the econometric and travel demand models • Ridership by travel shed and route – actual vs. projected <ul style="list-style-type: none"> ▪ Peak and non-peak ridership trends • Impact of pricing and operational changes • Relationship of ridership to vessel and terminal capital plans
Mobility	Level-of Service Standard	Level of service Standard Measures <ul style="list-style-type: none"> • Actual boat wait by travel shed/route for vehicles •

Stewardship	Operating Financial Plan	Farebox Recovery Measures <ul style="list-style-type: none"> Actual farebox recovery versus projected by travel shed and route Projected farebox recovery over the 16 year period of the legislative financial plan Unit Costs and Revenues <ul style="list-style-type: none"> Costs and revenues per passenger per route and travel shed
Stewardship	Capital Financial Plan	Capital Project Measures <ul style="list-style-type: none"> Percent of projects on-time and on-schedule
Preservation	Terminal & Repair Facility Plan	Condition Rating Measures <ul style="list-style-type: none"> Condition rating (i.e. percentage in good, fair, poor, substandard condition)

Glossary of Abbreviations

EDM	Econometric Demand Model
LCCM	Life-Cycle Cost Model
LOS	Level of Service Standard
OFM	Office of Financial Management
PSRC	Puget Sound Regional Council
Tariffs	Fares charged riders
TDM	Travel Demand Model
TPC	Tariff Policy Committee
WSDOT	Washington State Department of Transportation
WSF	Washington State Ferries
WSTC	Washington State Transportation Commission

Appendix 1

Washington State Department of Transportation Comments



**Washington State
Department of Transportation**

Douglas B. MacDonald
Secretary of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300

360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

December 28, 2006

The Honorable Mary Margaret Haugen
Senate Transportation Committee, Chair
305 John A. Cherberg Building
Olympia, WA 98504-0410

The Honorable Ed Murray
House Transportation Committee, Chair
203 John L. O'Brien Building
Olympia, WA 98504-0600

Dear Senator Haugen and Representative Murray:

We appreciate the opportunity to share comments on the Ferry Finance Study (December 18, 2006) prepared by the Cedar River Group and legislative staff. We look forward to further discussion at the meeting of the Joint Transportation Committee on January 3, 2007.

Our comments would be most useful, we believe, if we direct them at some of the chief questions raised by the report.

Ridership Forecasting

It has been helpful for the report to highlight the two forecasting systems, short-term and long-term, WSF has used to project ridership, revenues and travel demand on the ferry system. The report provides valuable background on why two systems have grown up and on their respective strengths and limits and the obstacles to their easy reconciliation.

It is also helpful to have the report confirm the accuracy of the ridership and revenue projections from the short-term model that have been used in the biennial budgeting process in recent years. (Page 14).

It is in the long-term forecasting of travel demand that the problems seem to lie.¹

Collaboration between the consultant and WSF staff over the last few weeks has caused the apparent scale of discrepancies in the long range forecast to have been significantly reduced from the concerns expressed in the consultants' earliest drafts. This work has revealed the roots of some of the problems in larger issues in regional transportation forecasting for cross Sound travel arising from the methodology and dating of underlying information taken into the ferry model from forecasting performed by the Puget Sound Regional Council. (Page 15).

¹ Discrepancies between the two models at least through 2023 are mostly presented in the *passenger* forecast (43 percent higher in the long-term model for the year 2023 than shown in the short-term model.). For *vehicles* the discrepancy at the year 2023 is only four percent between the two models, actually a very small discrepancy for forecasts of such length. (Page 15).

More attention needs to be given to these questions. However, changes in the projections from the long range model may not be as critical as the consultants suggest for assessing current working assumptions for planned terminal renovations and expansion. A graph that we hope will better illuminate the practical side of these issues is attached as Exhibit A.

Meanwhile, we agree that efforts should be made to reconcile, or at least better explain, the differences between the models, especially to identify whether assumptions are being made in either model, and especially the long-term model that may not be comfortable to the Legislature.

For example, one of the most important assumptions used in the long-term model is that *fares will be steadily increased by 2.5 percent per year over the forecast period.*² This has an important relationship to the forecast of travel demand. The projected rate of fare increase is slightly higher than the assumed rate of general inflation, meaning that the forecast incorporates an assumption of continuous and long-term real-dollar increases in fare levels to be paid by customers.³

If the legislature chose to change this assumption by establishing a different assumption about fare increases, one way or the other, significant implications would ripple through the model into the travel demand forecasts. If a revised assumption were that real dollar value of fares would not increase, projected levels of future demand might tend upward. On the other hand, if an assumption were made for even higher fare increases (for reasons pointed out by the consultants related to projected operating cost growth), future travel demand would be forecast for lower growth.

In addition, any adoption of *demand management fare policies* – perhaps the report’s most important single suggestion – could fundamentally alter future demand forecasts. Such policies would shift the shape of the daily or seasonal demand curve and would also shift the character of demand (less vehicles, more foot passengers). It might also be necessary to make, significant changes in the system’s revenue structure (comparing vehicle fares with foot passenger fares) in order to meet revenue needs of the system as well as new capacity management goals.

Basic directions about these elements of fare policy must be settled before long-term forecasting can be significantly refined over the current approach.

² As the report points out (page 14), this assumption is drawn from the Legislature’s action in the 2006 legislative session. The same fare increase assumption is also currently being used in the short-term model.

³ Note, however, the consultants’ observations that ferry system operating costs are likely to increase at a rate greater than the rate of general inflation (see discussion on pages 44, 52 and 67). Paradoxically, current budgeting assumptions are that operating costs will increase at a rate *less* than the rate of general inflation (see pages 52 and 67). This puts the system in the position of having a fare increase assumption that is less than the rate of expected operating cost growth but higher than the general rate of inflation while at the same time the budget shows for future operating cost projections a growth that is less than the rate of expected general inflation *and* less than the consultants’ projection of operating cost growth. One might suggest that basic decisions must be made as the Legislature reviews the budget to connect the dots.

We also believe that the report's broader doubts about regional forecasts of cross-Sound travel demand should be discussed with PSRC, from whom much of the critical underlying data related to regional growth and travel patterns is drawn.

On two ancillary points, we agree with the consultants' recommendations: (1) ridership forecasting data could be augmented with more information on *recreational users*, and (2) the origin and destination work performed in 2006 could be supplemented with a *market survey* that could test questions like travelers tolerance for longer waits or reactions to peak period pricing premiums. (Pages 18, 21, 63). We would, suggest that more work should be performed to evaluate future *freight and goods movement* demands on the ferry system.

Level of Service Standards

The report succinctly summarizes the fundamental performance standards used by the ferry system for future service level planning. It correctly places the origin of the standards in policy decisions for future service levels made by the Transportation Commission over a decade ago (Page 19).

The report also observes that attempting to satisfy the level of service standards in the future is a key driver of future planning for the ferry system. It suggests that either the adoption of *demand management fare policies* or the acceptance of *longer waits for peak sailings* (or both) would perhaps moderate needed investment levels or stretch out the future dates of needed investment in new service assets. These are not new ideas and indeed the consultants actually frame their own conclusion in words quoted directly from the ferry system's recent draft long range plan (See page 21 of the consultants' report referring to page 69 of the draft long range plan).

Here the report has landed on issues of obvious importance. Good planning parameters for the ferry system cannot be developed until the policy questions presented on these two issues are settled by those who comment upon and make policy, including the Governor and the Legislature as well as the important constituencies of ferry users and their communities.⁴ WSDOT and WSF welcome the prominence these questions play in the report and look forward to assisting and supporting policy development in what is surely a long due review of today's (or yesterday's) policy assumptions.

⁴ The consultants view is that "it is reasonable, in light of the overall increases in [transportation system] congestion to consider modifications to the level of service standard for vehicles [i.e., longer waits]." (Page 63) It is true that roadway congestion has gradually and steadily increased in recent years. In the same period, voter enactment of Initiative 695 and the resulting reduction in state financial support for the ferry system has diminished the system's financial condition without a corresponding change in the basic service standards. However, a policy of accepting increased congestion for ferry service must be contrasted with the highway side. On the highway side, more congestion comes in the form of a few minutes longer commute. Increments of congestion on the ferry side are measured in boat headways. The analogy is not precise and should be carefully evaluated. The consultants also recommend that "the legislature conduct an independent review of the revised level of service before acting on capital and operating requests that depend on the standard." We believe it is the policy issues, not the generating of their budgetary impacts, that need decision-making at this time. WSDOT/WSF will be pleased to support legislative consideration of alternatives to the current level of service standards to determine their actual effects for travelers and communities and budgets.

Operational and Pricing Strategies

Here again the most important of the consultants' observations relates to *demand management fare policies*. The consultants also raise important questions about *route-by-route or travel shed level planning for fares and for service strategies such as, for example, reservations systems*.

Demand management fare policies would "manage demand by encouraging riders to walk-on and/or, if driving, to drive-on in non-peak periods." (Page 63)⁵ A process for considering such strategies is recommended as a new step in the ferry planning model (Pages 2, 12).⁶ The main idea is that peak fares would rise – perhaps substantially on some routes and at the peak commuting times of days – and passenger fares would also have to be revised in order to assure a suitable overall revenue outcome as well as attain the most efficient possible use of every sailing especially for peak-period foot passenger travel.⁷ This would moderate future traffic demands and accordingly move both vessel plans⁸ and shoreside plans toward a more affordable model. (Page 12).

Route-by-route planning for fare and service policies would seem to provide important opportunities, like route specific fare recovery goals or, on some routes, reservations systems as supplemental demand management strategies. It also may call into question the long-standing protocols of "tariff route equity." The consultants observe that principles underlying tariff route equity are "reasonable," but also note that the concept "does not allow for recognition of the differences in the travel sheds served by WSF." (Page 53). There is no question that tensions will be introduced into the tariff route equity approach by greater use of demand management fare policies or by any system that increases the prominence of the very unequal fare box

⁵ Daily commute period peaking is an important feature on many routes. Day of week peaking also occurs on some routes with heavy recreational ridership. This presents somewhat different issues from daily commute period peaking. Some of the routes also see seasonal peak ridership. Strategies to achieve peak spreading for more efficient asset use vary from situation to situation. The need for fuller consideration of peak management strategies has been recognized in most recent discussions of ferry system policy; in fact the consultants' explanation of the possible application for the ferry system is drawn on WSF materials recently prepared for the public outreach program on the planning for modernization of Colman Dock in Seattle. (See page 23 of the consultants' report).

⁶ WSDOT/WSF are very pleased at the consultants' conclusion that ferry finance decision model is valid, subject to the addition (if the Legislature should so choose) of review of these suggested operational and pricing strategies. Page 12.

⁷ Peak period pricing to shift demand to lower demand periods would seem in the foreseeable future to apply to foot passengers only in a future scenario at Bainbridge. (Page 20). However, it should be noted (as the consultants do) that since vehicle traffic accounts for 75% of all farebox revenue (page 46), tariff policies that discourage vehicle traffic or shift it to low price off-peak periods are likely to require a new look at how fare revenues from foot passengers will have to contribute to overall system revenue needs. Indeed, the consultants have identified the entire array of unprioritized instructions provided to the Transportation Commission on fare-setting (RCW 47.60.326) and the mechanisms for soliciting advice from the public (RCW 47.60.330) as ripe for legislative reevaluation. (Pages 47-48).

⁸ The consultants approve and take comfort in the fact that WSF already recognizes an inherent flexibility in the timing of vessel acquisitions in coming years to be based on actual experience of traffic growth. (Pages 2, 28). The consultant report does not dwell on the vessel acquisition side of the capital program and have not offered specific comments on that area in this letter.

recovery rates achieved for different routes and travel sheds. As the consultants note, there are routes today that are actually recovering more than 100% of route operating costs in fare box revenues. Over 60% of overall system ridership are patrons on those routes. If revenues from fares on those routes were capped at 100% of operating costs, the burden of fare increases to achieve higher system-wide fare recovery targets would fall on the smaller number of users on the other generally more lightly-traveled routes. Although these policy problems are not analyzed in depth in this report, they are familiar concerns to legislators and other long-term observers of the ferry system.

Capital Cost Accounting Practices

Are capital costs being appropriately separated from operating costs?

Everyone agrees that proper differentiation of capital costs from operating costs is the foundation of proper system accounting. Everyone is trying their best to achieve it.

The upshot of the report is that WSDOT, WSF, OFM and the legislature must all agree on the definitions that are being used to separate these two basic categories of expenditure.

Any current discrepancies in definitions should be easy for staff to reconcile -- with just this suggestion offered by us: the reconciliation should keep an eye on consistency and alignment with the definitions used in other areas of transportation budgeting. (This may suggest a slightly different solution than the consultants' apparent approach that the touchstone should be the definitions used by OFM and the legislature in the General Fund Capital Budget.)

Meanwhile, we have attached as Exhibit B a short list of project examples that the consultants' report suggests (pages 40, 64-65) have been mis-characterized as capital expenses when they, or elements within them, should be treated as operating costs. These projects should be carefully reviewed to see if, in fact, they are not appropriately treated as capital costs by any of the available definitions. Including projects like these in the operating budget drives up operating costs and makes fare recovery goals even more difficult to achieve. If they are properly classified as capital projects, they should continue to be carried on that side of the budget.

Within the capital program, are “preservation” expenditures being appropriately differentiated from “improvement” expenditures?

Readers of the report will quickly see that sometimes the two are not easy to separate within the elements of a given project or program, especially in the modernization of major existing assets like the terminals.

The course forward here, again, is agreement among WSDOT, WSF, OFM and the Legislature on the precise wording of suitable definitions (the differences among the candidates are not very great) and then to settle their application to specific projects especially for the terminals. Our only concern, again, is that very similar problems of characterization also can be found on the highway side of the transportation budget. Some attempt should be made to achieve consistency across all features of the overall transportation budget. This should be a staff level effort that does not need further independent outside consulting support, in our view, especially in light of the substantial head start enjoyed by current staff in understanding the details of many of the actual projects.

Within the preservation program, are some capital expenditures being included that should better be characterized with another capital expenditure label – either as “improvement” projects or under a label not yet devised?

The consultants suggest that several expenditures, while not questioned as to their importance or priority, really are misnamed as “preservation.” (Some of these are listed in Attachment C). It is not clear where or how the consultants’ actually believe they should be labeled in the capital budgeting categories. However, they clearly are not “operating” expenditures, so the problem is one of characterization within the capital budget. It will be useful for WSDOT, WSF, OFM and the legislature to sort out this problem by adopting or adapting applicable definitions and agreeing on the conventions of naming and display. This, again, we feel is a staff issue to be worked out in the forthcoming budget process.

Programming for the Capital Upkeep of the Terminals

In 1998, the Booz Allen Hamilton Performance Audit recommended that WSF use life cycle cost models (already under development for WSF’s vessel systems) to help guide terminal preservation investments. In 2001 the Joint Task Force on Ferries used the life cycle cost model concept to set overall performance standards for terminals systems by relation to within- life-cycle status. In the same year an audit conducted for OFM by Taylor, Korvala and Warwick recommended enhancements to the life cycle cost approach. WSF has worked over that entire period to refine the approach and report its results against the performance measures adopted by the Joint Task Force in 2001.

The new consultants’ report basically identifies two concerns.⁹

⁹ These concerns have focused on the terminals, in light of the limited review the consultants performed of the vessels. It is widely recognized that the life cycle cost method for preservation performance measurement and programming has, over the last several years, led to major improvements in the conditions of the vessels in the fleet.

- Is the process being appropriately used and updated as preservation work on the terminals is performed? For example, when a creosote wood piling is replaced by a steel piling, is the longer life cycle of the steel piling being appropriately recorded and reported on in the system?
- Is the process adequately complemented by physical “condition assessment” of the terminal elements themselves? The report suggests that if one actually look at the terminals (as the consultants’ team did for a very small portion of the terminals¹⁰), they are in better shape than would be suggested from the “within-life-cycle” ratings.

In this report, these concerns add up, to the suggestion that condition of the terminals, rather than the within-life-cycle ratings, is a better measure of terminal preservation than the within-life-cycle measures. They recommend that a terminal rating system based on condition assessment now be developed for planning and budgeting purposes (Page 29).

WSDOT/WSF are sensitive that any errors in the bookkeeping of the life cycle cost process should be corrected. A complete review will be made (expanding on the limited sample the consultants’ scope permitted) and appropriate steps taken as soon as possible. We believe the problems are not widespread and would not of themselves lead to material shortcomings in the overall program and budget prognosis to support terminal preservation.

What about the consultants’ larger suggestion, after five years’ experience by WSF, OFM and the Legislature in developing and implementing the life cycle costing methodology following a performance audit recommendation, for a course change to condition assessments as the basis of planning, programming and budgeting for terminal preservation? This is, in our view, a problematic recommendation.

We suggest a better outcome would be for policy-makers to resolve that WSF’s terminal should benefit from a truly contemporary asset management system. A modern asset management system for facilities takes into account a variety of factors to produce a balanced, cost-effective and reliable program for facilities updating and re-investment. Such systems are now widely used in forward-looking organizations that obtain targeted advice in this subject matter from the combined disciplines of engineering and finance. Today, strong facilities asset management programs typically involve:

- System inventories and detailed condition assessment by qualified facilities professionals.
- Reliability, criticality and redundancy assessments to identify appropriate points of intervention and the necessary condition requirements for support of the critical

¹⁰ WSDOT/WSF urge caution concerning the two paragraph conclusion captioned “Terminal Condition” found on page 34 of the report. It is based on a very limited review and that needs immediately to be expanded and refined if it is to be relied upon by policy-makers. As reported below, that work is now being undertaken by WSF through the engagement of an independent expert engineering consulting firm.

customer service business mission (e.g., “run-to-failure” analysis and “reliability centered maintenance” systems).

- Warranty protection and management programs for vendor-supplied elements.
- Risk assessment for life safety and system safety protection and regulatory compliance including environmental standards.
- Life cycle costing and evaluation integrated with the foregoing considerations.

In sum, we believe that the consultants’ analysis in this area has highlighted the important requirement and overdue opportunity for the ferry system to build its last five years of experience with the life cycle cost approach into a systematic evolution toward modern asset management for its terminals. Shifting attention to terminal condition assessments will change the short term focus but not by itself gain WSF the added strength that is needed for long-term improvement.

Meanwhile, we believe that questions suggested by the consultant about current terminal conditions should be addressed by a short-term expert independent engineering evaluation of critical terminal element conditions. This is a relatively modest assignment for an engineering firm with the appropriate tools and expertise. We believe such an evaluation will produce quick results of great value to the legislature in making the most of the new consultant’s report. We have asked our new WSF Director of Terminal Engineering, John White, to immediately set about the task using existing resources to secure an independent validating review of the overall terminal physical conditions. We urge that judgments about the dollar sizing of preservation projections for the terminal should be suspended until more of this information can be provided to augment the limited evaluation made by the Cedar River Group consultants.

Terminal Renovation and Expansion Programming.

Most readers to whom we have spoken believe the chief message in the report is that the current planning and programming for future investments in the terminals at Mukilteo, Edmonds, Anacortes, Bainbridge and Seattle are over scaled.

The report seems to rest this impression on two grounds:

- “Planning for peaks” at WSF has oversized the programs, and indeed the entire question of “peaks” would be dramatically altered if the ferry system adopted the strongly suggested course of demand management fare policies to smooth out the peaks, especially for vehicle traffic.

- The terminal plans have been too generously scoped either to provide for concession space for non-fare revenue opportunities or to meet local community requests for amenities.

These are insights with which everyone concerned with the ferry system must reckon. The sidebar *Planning for Peaks at WSF* may be helpful in focusing the issues for discussion at particular terminals.

The implication of the report – “plan smaller” – really cannot be separated from the suggestion that demand management fare policies should be much more aggressively used on the ferry system to lower peak period vehicle demand, shift peak period ridership to foot passengers and overall achieve a shrinking of the system’s need for investments in more boats or larger terminals. As already noted, this is a fundamental policy question affecting the entire future of the ferry system. Indeed, the consultants have offered no alternative vision for the outcome that capital program requirements can be brought into easier-to-manage scale.

As for terminal by terminal review of sizing assumptions, what is needed now is for OFM and the Legislature (through members or staff) to examine the five indicated terminal programs to determine comfort levels with the sizing assumptions. This is *not* an overly technical or complicated proposition for any of these terminals. Special issues are presented for Keystone that should be considered as a different forum. The questions and insights presented in the report will help suggest the right questions to ask. The balance of judgments that are needed to confirm or revise the current

Planning Vehicle Holding Areas for Peak Holding Needs at the Terminals

The consultants’ report has led to wide discussion of the “peaking” assumptions WSF uses for its terminal modernization planning, especially for holding areas. The planning process must be much better understood.

The process begins by counting vehicle demand for a four-hour period from 3 PM to 7 PM at a particular terminal for a typical day, deemed for purpose of convenience to be a mid-week date in the month of May. This level of demand is then entered into the long-range demand model to develop out-year projections for 2030 and interim dates. For example, for Mukilteo to Clinton, the May mid-week PM four hour demand today is about 1200 vehicles, projected to increase to about 1700 vehicles by 2030.

Next, to help judge the appropriate size for the vehicle holding area, two numbers are calculated for comparison purposes – the likely demand for holding space on the 30th and then the 10th busiest days of the year. This gives the largest number of cars expected to be waiting at one time given the projected vessel schedule and capacity. Thus, for Mukilteo, in the year 2030, the 10th busiest day is projected to be a summer Saturday afternoon and the expected largest number of vehicles expected to be waiting to load at the time of the longest queue would be about 450 vehicles.

This number is used to inform a field review that takes into account what will happen by way of back-ups on adjoining local streets on those days and even busier days, and what scale of holding area can as a practical matter be designed at that locations. All factors must be balanced. At Mukilteo, the outcome has been to plan for vehicle holding space for the terminal expansion of about 260 spaces. This is about two and a half times larger than *today’s* holding space of about 110 vehicles (less than one boat load). It portends that there will be many days in the future when ferry system traffic will queue on local streets, so it is certainly not a “peak of the peak” planning outcome. Even with *significant* reductions in peak period traffic at Mukilteo through the suggested use of demand management fare policies, the holding area proposed for Mukilteo seems not excessive to likely future demand and the desire to minimize disruptions to local streets.

Similar work-ups can be provided for holding area calculations on the other terminal programs.

thinking do not require at this time a further independent consultant review, but rather a review and consensus forming process with policy decision-makers (and the customer communities) to be sought now.

As for some of the ancillary recommendations in this area:

- We agree that the Legislature should have more information on the cost to complete Master Planning programs for terminal projects. (Page 42)
- We agree that transparent accounting should be made of compensatory costs to satisfy local community concerns (and also compensation for duties owed in relation to sovereign Tribal governments). We also agree that costs being borne in ferry system programs for enabling ferry/transit transfers (an important element in enlarging ridership for walk-on passengers) should be the subject of transparent accounting. (Page 42). We are pleased that the consultants have recognized the extensive efforts WSF has undertaken for community outreach and engagement in the terminal planning program.

Operating Finance Plan and Capital Finance Plan

The discussion presented by the consultants is very welcome to WSDOT/WSF because of its stark recognitions of the fiscal challenges facing the system.

- The consultants confirm the unhappy but correct conclusion that with 80% of its expenses attributable to fuel and labor costs, WSF management has little opportunity to control operating costs. (Pages 3, 44, 54)¹¹
- The consultants express a necessary skepticism that the Puget Sound Capital Construction Account can be funded by 2019-2021 with a healthy transfer of earned revenues in excess of operating costs plus a hundred percent of the level of subsidy contribution now projected for the Puget Sound Ferry Operations Account.(Page 46).
- The consultants underscore the main messages presented by Secretary MacDonald in the presentation of WSF Financial Condition to the Senate Transportation Committee in January, 2006:
 - The capital funding available from dedicated tax sources is undoubtedly inadequate to fund the likely magnitude of WSF's capital program.
 - The gap in capital funding is likely to be the largest financing problem facing WSF. (Page 3)

We agree with key recommendations of the consultant:

¹¹ Labor costs are sixty percent of the total. For the period 1996-2006, 67% of this labor amount was for vessel staff, 17% for terminal staff, 13% for maintenance staff and 4% for administrative staff. (Page 49)

- Operating fund transfers should not be planned on to support capital funding (Page 66).
- A larger fund balance should be carried in the Puget Sound Ferry Operations Account to provide for unexpected costs or shortfalls in earned revenue. (Page 66).
- Clearer policy direction on fare setting (requiring amendments to RCW 47.60.300, 47.60.326, and 47.60.330 should be made, including review of pricing strategies for traffic demand management, pricing to encourage non-peak ridership and establishing farebox recovery goals by travel shed and route. (Page 67).
- Cost estimate for tariff policy-making should be refined, and recognition given that operating costs likely will rise faster than the 2.5% per annum now used in projections. (The implications noted by the consultants – this recommendation “will likely result in higher fare increases.” – is not, however, to be overlooked. See page 67).

We hope these comments will be helpful in stimulating additional discussion and consideration of the consultants’ report and the steps necessary to secure the financial future of the ferry system.

Sincerely,



Douglas B. MacDonald
Secretary of Transportation



W. Michael Anderson
Executive Director
Washington State Ferries

DBM:jaa

cc: The Honorable Judy Clibborn, House Transportation Committee Chair- Designate
Robin Rettew, Office of Financial Management
Jennifer Ziegler, Governor’s Policy Office
Jill Satran, Governor’s Policy Office
Kathy Scanlan, Cedar River Group
Janice Baumgart, Senate Staff
Teresa Bernstein, House Staff
Roger Polzin, JTC Staff

Exhibit A

Exhibit A is intended to present the long range travel demand forecast in relation to the scaling assumptions that have actually been incorporated into the program for expansion of the terminal facility at Mukilteo. It will demonstrate that the actual scaling assumptions are so much more limiting to the size of the terminal than the assumptions that would be derived from the long range forecast as to suggest that the likely sensitivity of the long range forecast to the kinds of concerns identified by the consultants in this report would have little if any effect on the terminal sizing.

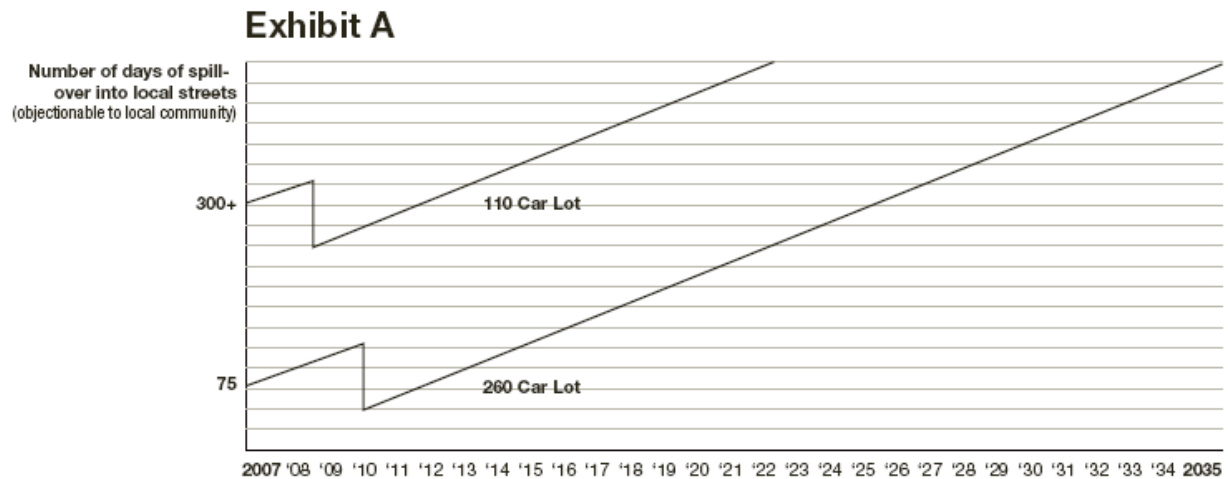


Exhibit B

PIN:	Title	Project Cost	Construction Biennium
902019V	Anacortes Terminal Preservation This project includes design and construction to preserve the Slip 1 and Slip 2 trestles. The purpose of this project is to preserve the trestle until funding is available for complete trestle replacement, currently scheduled for 2013. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.	\$300,000	2007-2009
910413N	Edmonds Terminal Preservation This project includes design and construction work to preserve the trestle. The purpose of this project is to extend the life of the trestle until the terminal is relocated, currently scheduled for 2017. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.	\$500,000	2011-2013
900005L	Fauntleroy Terminal Preservation This project includes design and construction work to preserve the trestle. The purpose of this project is to extend the life of the trestle until the major trestle replacement project, currently scheduled for 2021 can be accomplished. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.	\$500,000	2007-2009
900026L	Orcas Terminal Preservation Due to high bids this project will only be replacing the hoist system with the remaining work being deferred until the replacement project, currently scheduled for 2015 can be accomplished. This preservation project was predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections and is part of a WSF safety initiative to standardize transfer span systems.	\$400,000	2005-2007
900001F	Point Defiance Terminal Preservation This contract is complete. Work included upgrades to the transfer span and transfer span systems. The next preservation work on this transfer span is now scheduled for 2023. This preservation project is part of a WSF safety initiative to standardize transfer span systems.	\$268,000	2005-2007
900010A	Seattle Terminal Preservation This project includes design and construction to preserve the trestle at Seattle. The purpose of this project is to extend the life of the trestle until funding is available for complete trestle replacement, currently scheduled for 2019. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.	\$1,000,000	2007-2009
916008N	Southworth Terminal Preservation Contract complete, work included complete replacement of trestle deck. The purpose of this project was to extend the life of the trestle until funding is available for complete trestle replacement, currently scheduled for 2017. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.	\$1,554,000	2005-2007

900002E Tahlequah Terminal Preservation \$200,000 2005-2007

This contract is complete. Work included upgrades to the transfer span and transfer span systems. The next preservation work on this transfer span is now scheduled for 2019. This preservation project was predicated on a WSF safety initiative to standardize transfer span systems.

900006N Vashon Terminal Preservation \$850,000 2005-2007

Contract is currently underway to preserve the trestle and replace the tie slip gangway. The purpose of this project is to extend the life of the trestle and replace the tie up slip gangway. Funding is available for complete trestle replacement in 2017. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.

999940D Catch-up Preservation (Lopez Island) \$313,000 2011-2013

This project includes design and construction to preserve structural support elements of the trestle. The purpose of this project is to extend the life of the trestle until funding is available for further trestle preservation, currently scheduled for 2021. This preservation project is predicated on findings of the 2006 or latest WSDOT Bridge Condition Report and WSF inspections.

The report at one point suggests that “systemwide projects, such as administrative overhead are placed in the preservation program,” (page 2). The Study equates the system wide projects as overhead. This is not consistent with WSDOT practices, OFM definitions, Federal guidelines or GAAP. Overhead expenses for ferry capital programs are captured and distributed across all projects utilizing approved WSDOT cost allocation methodologies.

It is true (as in the highway program) that certain program-wide costs of the capital program – an appropriate capital cost expenditures – have been designated to the preservation side of the program rather than the improvement side of the program.

Exhibit C

The table below is a partial list of the projects identified by the consultant as ineligible for preservation classification. WSF believes these projects and others identified by the consultant meet the definition of “preservation” projects “Preservation projects change efficiency of use and may enhance program delivery. They do not change program use. Preservation projects maintain, preserve, and extend the life of existing state facilities and assets and do not significantly change the program use of a facility.” 2005-2015 OFM Capital Budget Instructions page 5. The Legislature’s Joint Task Force on Ferries (JTFF) identified four types of preservation projects: emergency repairs, regulatory compliance (protection of people and the environment), continuity of service (protection of assets) and quality of service (governmental efficiency and effectiveness). Legislature’s Joint Task Force on Ferries Final Report, January 15, 2001 page 41.

The consultant’s study reached the conclusion that, in part or in whole, the projects in question should not be classified as preservation projects. They should be classified as improvement. This conclusion seems to be based on a concept of preservation that is much more restrictive than the OFM definition as further refined by the JTFF.

For example, the “Systemwide Terminal Security Infrastructure” project has been totally disqualified in the consultants’ review for treatment as preservation. However the JTFF identified regulatory compliance as preservation. Further, providing passenger security meets the OFM definition of preservation by enhancing delivery without changing the primary use of the facility.

PIN	Project Title	FY 05-21 (Dollars in Thousands)		
		Amount characterized by WSF as capital preservation.	Amount characterized by the consultants as capital preservation.	Amount characterized by the consultants as capital improvement.
989930B	Systemwide Terminal Security Infrastructure Includes surveillance systems, electronic access control to critical restricted areas, barriers and fencing. Largely funded by federal grants.	8,668		8,668
952516H	Clinton Terminal Preservation Funds on-going environmental compliance monitoring required due to expansion of the trestle completed in a prior biennium, preservation of the septic system, retrofit of a transfer span and preservation of dolphins and wingwalls.	10,174	7,000	3,174
900040N	Eagle Harbor Terminal Preservation Includes replacement or renovation of the timber/concrete trestle, the large building trestle, the Trask Pier; Slip E bridge structures and wingwalls, the main maintenance and other buildings; the weld shop, pavements and utilities. Provides part of the funding to acquire property owned by the Winslow Marine Association. Continues EPA Superfund activities and environmental monitoring.	37,368	34,351	3,017
902017J	Keystone Alternative. Replaces this single slip facility in kind based on earlier alternative analysis completed earlier this biennium. This is a placeholder and the ultimate configuration has not been determined	31,231	18,021	13,210
910414N	Kingston Terminal Preservation Includes modification of the overhead loading controls, refurbishment of the seawall, replacement of the Slip 2 transfer span and apron, paving of selected areas, installation of a network generator; and acquisition of property.	25,233	19,843	5,390
900010A	Seattle Terminal Preservation Begins with interim preservation of the north trestle and passenger overhead loadings for Slips 2 and 3, and installation of exit gates. This preservation effort is followed by major work that replaces the north trestle, bulkheads, riprap and retained fill; selected towers, bridge seats, apron, transfer span, dolphins and overhead loadings comprising or associated with Slips 2 and 3; the main terminal building and other buildings; and various utilities.	149,619	140,455	9,164
989930E	Systemwide Terminal Emergency Management Communications Includes acquisition and installation of communication and information technologies that provide effective and secure communications among the WSF Operations Center, the WSF Emergency Operations Center, terminals and vessels as well as state and federal agency operations centers in accordance with Department of Homeland Security regulatory requirements.	408		408

966620C Systemwide Toxic Waste Disposal

440

440

Invests in systemwide surveys, planning, training, design and other pre-construction activities needed to facilitate investments in toxic waste disposal and removal infrastructure that meets regulatory requirements. Provides the foundation for integrating toxic waste disposal into planned construction projects.

Appendix 2

Ferry Finance Advisory Committee Member Comments

To: Members of the Joint Transportation Committee

The Ferry Finance Study has responded in a concise and meaningful way to legislative direction for a review of the financial needs of the Washington State Ferries system. I have been pleased to be part of the steering group as it worked its way through the consultant's findings and recommendations.

It now becomes incumbent upon the Joint Transportation Committee to take the next steps leading to a viable, clearly understood and broadly acceptable funding plan for WSF. That will involve further examination of the study's findings along with new thinking regarding a more robust combination of tax support and user fees (fares) to provide sufficient and more predictable source of financial support.

Presuming formal adoption of the study in its current form, there are a number of tasks that lay before us. Among those are three in particular that I suggest need your immediate attention:

1. So as not to forego any added revenues that will result from a fare increase before the peak summer traffic season, the legislature should endorse an interim, "business as usual" process that would lead to a tariff adjustment to become effective on 01 May, 2007. By "business as usual," however, I do not presume automatic adoption of the legislative planning assumption of a 2.5% across-the-board fare increase if that level is found to result in further fiscal harm to WSF's funding and reserves.

Because of the statutorily mandated timeline, the existing rate-making process involving the Tariff Policy Committee should proceed based on data from WSF and the Department and on the Governor's budget proposal. While it would be preferable to consider more fundamental structural changes to the tariff--such as altering the relationship between vehicle and passenger fares or introducing "value pricing" or demand-related fares--the Tariff Policy Committee timetable has already been delayed by several months and there is insufficient time to consider new ideas of that complexity in time for a May implementation.

2. In parallel with the May 2007 increase, we need a thorough review of the traffic forecasting methodologies and Level of Service assumptions that together inform the size and shape of the capital program and the operating revenue stream. Those are the key determinants of future needs for ferry system infrastructure; an early reconciliation of the outcomes predicted by the so-called "econometric" and "travel demand" models must be achieved, incorporating revisions to the PSRC model and any other differences.

3. A more thorough, clean-slate consideration of tariff structures and levels, focusing on long-term system revenue requirements and questions of "who pays what," needs

to proceed with the broad endorsement of the legislature. Outcomes from such a study will necessarily recommend that some user groups pay more relative to others, and only with legislative support can WSF expect to successfully implement such changes. Ideas generated from the review must be crafted so as to (1) reduce future capital needs, (2) improve system capacity utilization and (3) achieve a meaningful degree of traffic demand management. This effort would be conducted with knowledge gained from an analysis of data from the market survey as suggested in the report.

Pending the forecast and tariff reviews, the Legislature should consider funding WSF's capital plans on an interim basis only, so as to retain maximum flexibility going forward while not unduly hampering necessary work planned for the coming year. At this point we do not have a sufficiently clear and widely agreed picture of future demand--the raw numbers or their distribution by route, by time of day and/or by season--on which to base long-term capital decisions. While any interruption to the capital program's flow carries risk, WSF cannot afford the luxury of building more (or less) than it needs, particularly for those terminals slated for significant expansion.

Items 2 and 3 above involve getting a clearer set of numbers on which to base tariff decisions and assessments of capital needs. The JTC should consider forming an ad hoc committee consisting of members with expertise in these areas from within legislative staff, the Commission (including the Tariff Policy Committee), the Governor's office and OFM, and the Department along with WSF. The group should be tasked, among other things, with formulating fare proposals including any timing or phasing recommendations, that could lead to an October 2007 tariff change as the first step.

The study had an objective of finding ways to better sustain the ferry system based on data-driven decision making. I appreciate your consideration of these steps I have recommended to form a basis to implement the study's recommendations.

Robert S. Distler
Member
Washington State Transportation Commission

Washington State Ferries Financing Study

Technical Appendix 1: Review of Studies and Reports



Prepared For:

Joint Transportation Committee
Washington State Legislature

Consultant Team:

Cedar River Group, LLC
Mirai Associates
Norway Hill Development
RL Collier Company

December 2006

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Executive Summary

This review covers a set of studies and reports prepared for and by Washington State Ferries (WSF) between 1998 and 2006 about WSF strategic planning and finances. The purpose of this review is to compile and assess the studies' recommendations and policy directions. The reports are summarized below and in more detail in Appendices A-D.

Long-Range Plans and Passenger-Only Ferry Studies

This review included two WSF long-range plans (prepared in 1998 for 1999-2018, and a draft updated plan in 2006 for 2006-2030), three passenger-only ferry reports (one in 2005 and two in 2006), and two origin and destination studies (1999 and 2003). See Appendices A and B for details of these studies.

Planning Strategies and Corridors. The two long-range plans and the 2005 passenger-only study identify key strategies that guide ferry system planning. Strategies that all three include are: capacity to meet the adopted level of service standards; inter-modal connections between WSF service and local public transit providers; and having an operationally and financially sustainable system. The 2006-2030 plan, which is the basis for WSF's current long-range capital program, also identifies as key strategies: charging prices that are reasonable and equitable as required by RCW 47.60.326; environmental stewardship; and respect for local government land use and growth management plans.

WSF planning is done systemwide and by four service corridors—Central Puget Sound, North Puget Sound, South Puget Sound and the San Juan Islands. These service corridors serve seven distinct travel sheds or travel markets.

Level of Service and Ridership. The level-of-service standards and ridership projections are the cornerstone of WSF's long-range plan and capital program. For the Puget Sound routes (90 percent of ferry passengers), the level of service standard is no wait to board a ferry for walk-on pedestrians, and one boat-wait for vehicles for all routes except Bainbridge and Mukilteo, which have a two boat-wait standard. For the San Juan Islands (8 percent of passengers), the standard is no wait for pedestrians. For vehicles in peak season on the San Juan routes, the standard is 25 to 40 percent of monthly sailings where demand exceeds capacity, and in off-peak season, 15 to 25 percent where demand exceeds capacity.

Ridership projections are based on WSF's origin and destination studies, and use transportation planning models and population projections of the Puget Sound Regional Council and state Office of Financial Management, along with historic ridership data, applied to the WSF transportation model. The long-range plan from 1999 projected ridership growth of 70 percent. However, with the sharp fare increases instituted in 2001 as a result of loss of funding from the Motor Vehicle Excise Tax (MVET), ridership actually fell by 10 percent from 1999 to 2005.

The 2006-2030 draft plan again projects ridership growth of 70 percent based on current service, and growth of 88 percent with the planned system improvements. The plan notes

three factors affecting ridership growth: demographic growth, fares and service improvements. Like the prior plan, the 2006-2030 plan assumes a shift away from drivers with vehicles on the ferries to more walk-on passengers. This plan projects 62 percent walk-ons in 2030, up from the 2003 actual of 44 percent. The projected increase in ridership varies among service corridors, with the South Sound projected to have the greatest rate of increase, and Central Puget Sound continuing to have the highest percentage of total ridership.

Service and Capital Improvements, Capacity Utilization. The 2006-2030 plan projects capital improvements required to service the projected ridership within the WSF service level standards. These improvements include vessel acquisitions to meet the projected numbers of passengers and vehicles, and terminal improvements to accommodate the vessel changes and passenger growth. The plan assumes a total of fourteen new vessels and fourteen retirements/sales of vessels. While there would still be 28 vessels in 2030, as there are today, there would be more large vessels and more frequent service to serve the projected demand. Major improvements are anticipated at eight terminals, affecting all four corridors (Central – Bainbridge, Colman Dock/Seattle, Edmonds; North – Mukilteo, Clinton, Keystone; South – Southworth, Colman Dock; San Juan Islands – Anacortes).

The ferry system can meet the passenger demand during the afternoon (PM) peak on all routes, with the exception of the “peak of the peak” Seattle-Bainbridge Island sailings. Most of the pressure to expand services and terminals comes from the projected growth in the number of vehicles. The capacity utilization for vehicles is projected to be more than 100 percent during the PM peak on the Bainbridge Island route and the Seattle-Bremerton route (despite additional vessels on this route) by 2030.

Financial Plan. A long-term operating and capital financial plan is included in both long-range plans. The 1999-2018 plan included substantial MVET funding, which was eliminated with I-695 in 1999. The draft 2006-2030 plan projects \$5.6 billion in capital investments to maintain the existing fleet and facilities, deliver the new vessels and terminal improvements, provide funding for emergency repairs, and cover debt service. Operating expenses are projected to be less than revenues available from the farebox, other miscellaneous sources such as concessions, and state gas tax and other revenues dedicated to ferry operations over the twenty-five year period. The plan proposes transferring the net, \$925.5 million, to help meet capital expenses. Farebox recovery in total over the twenty-five year period is 98.6 percent, growing from 78 percent in the 2005-07 biennium to 108.9 percent over the 2029-31 biennium.

For capital funding, transfer of the net income from operations is anticipated to provide 18 percent and dedicated tax support (from gas tax, 2003 Nickel Package, 2005 Transportation Partnership Account, and other dedicated funds) 19 percent. Discretionary funding by the legislature from gas tax distributions is assumed at a rate to meet preservation standards, for a total of \$2.6 billion or 49 percent of all anticipated capital funding. Other sources are bond proceeds (5 percent) and federal funds (9 percent). Capital funding is short \$410.7 million over the life of the program, with no source identified in the plan.

Policy Issues. The 2006-2030 draft plan raises six key policy issues. These are: fares, farebox recovery rate, service constraints for vessel loading and landside needs, impact of ridership and service increases on Colman Dock, third party operation of Seattle-Kingston passenger-only ferries, and moving people vs. vehicles.

Studies and Task Force Reports

This review compiles and compares the recommendations of three studies of WSF operations, management of vessels and capital program (1991, 1998 and 2001), and a Joint Legislative Task Force on Ferries, which produced a report in 2001. The three studies are the Management of Vessel Refurbishment Programs conducted in 1991 for the Legislative Transportation Committee by Booz Allen & Hamilton Inc. and M. Rosenblatt & Son, Inc.; the Department of Transportation Ferry System Performance Audit Report 98-6, conducted in 1998 for the Joint Legislative Audit and Review Committee by Booz-Allen & Hamilton, Inc.; and the Office of Financial Management: Performance Audit of the Washington State Ferry System Capital Program conducted in 2001 by Talbot, Korvola & Warwick. See Appendix C for details.

These reports include fifty-nine recommendations in seven categories: organizational structure; labor relations; operations and maintenance; budget; service levels; long-range and capital planning; and vessel construction. WSF has implemented 31 of these recommendations and partially implemented an additional 10. See the Summary of Recommendations table starting on page 7.

Customer Survey

In 2002 WSF conducted its first-ever survey of riders. The findings are included in a 2002 report, summarized in Appendix B. The survey found that WSF had a significant base of support for its performance, with 75 percent of all riders satisfied or very satisfied, and 25 percent dissatisfied. Full-fare riders were more satisfied (79 percent) than commuters (71 percent). Viewed by route, overall satisfaction ranged from 58 percent for Fauntleroy-Seattle customers, to 86 percent for Keystone-Port Townsend customers.

Regarding fares, 48 percent of all riders felt that the fares represented a good value; 52 percent did not. Full-fare riders were more likely to think the fares were a good value (51 percent) than were commuters (45 percent). Regarding improvements needed, 28 percent of all riders thought fares should be reduced, 16 percent wanted more boats or runs, 14 percent wanted improvements in on-time service, 12 percent wanted better customer service, and 10 percent better food and beverages.

Customers were asked to rank the importance of and their satisfaction with five service elements: on-time performance, route reliability, cleanliness of bathrooms on ferries, cleanliness of the ferry, and friendly/helpful ferry employees. While between 91 and 97 percent ranked each of these elements as important, the percentage of customers satisfied with these elements ranged from 64 percent (for cleanliness of bathrooms) to 76 percent (for route reliability).

Performance Reports and 5+5+5 Plan

WSF has published progress reports in 1999 (on FY 1998-99), and in 2003 (on FY 2001-03). WSF also reports regularly in the Washington State Department of Transportation's quarterly performance report (*Gray Notebook*), which is available on the department's web site. These reports are summarized in Appendix D.

The 1999 Progress Report discussed the completion of the 1999-2018 long-range plan and the 1999 origin and destination study, and indicated that WSF had developed a methodology for a stated-preference survey. (That survey was not conducted.)

The 2001-03 Progress Report dealt primarily with WSF's adaptation to the loss of MVET funding. The report laid out four strategic goals: (1) continually improve and refine business operations; (2) broaden the revenue base and reduce costs; (3) promote and assist in the planning of regional transportation centers; and (4) redefine who we are. To meet these goals, WSF developed a 5+5+5 business plan for the operating budget. This plan aimed to reduce costs by 5 percent, cap fare increases at 5 percent, and generate new revenues of 5 percent through a comprehensive retail, marketing and advertising program. The goal was to cover 90 percent of operating costs with revenues by 2008. The plan assumed there would be additional funding for capital improvements from reductions in preservation work connected with service reductions and vessel retirements.

The WSF quarterly performance reports include information on customer satisfaction, ridership, trip reliability, on-time performance, capital expenditures, operating revenues, and terminals and vessel condition.

Summary of Recommendations from Studies and Task Force Report

Organizational Recommendations

Recommendation	Source	Status
1. Re-organize to have engineering design & construction report to the Assistant Secretary.	1991 Study	Implemented
2. Reduce direct reports to the Assistant Secretary.	1998 Audit	Implemented
3. Evaluate management structure. 4. Evaluate ferry governance structure/create local or regional ferry transit districts.	1998 Audit Task Force	Implemented - 2005 Legislature established WSDOT as a cabinet agency and passed RCW 36.54 allowing for the creation of ferry districts. 2006 Legislature established ferry grant program for districts offering passenger-only service.
5. Continue in-house design engineering capacity.	1991 Study	Implemented
6. Assign ships to single owner & create program manager for ship construction.	1991 Study	Implemented
7. Job description of Assistant Secretary/Director of Operations include shipyard experience.	1991 Study	Not implemented/Current job descriptions properly emphasize strategic capacity.
8. Develop employee training and development system beyond mandatory safety training.	1998 Audit	Not fully implemented - funding constraints

Labor Relations Recommendations

Recommendation	Source	Status
1. Comprehensive job classification & compensation study as basis for collective bargaining.	1998 Audit	Implemented – 2006 SHB 3178
2. Improve Marine Employees Commission.	1998 Audit	Partially implemented– 2006 SHB 3178
3. Align overtime with other state employees (one and a half times hourly rate rather than double).	1998 Audit	Not implemented

Recommendation	Source	Status
4. Remove mandatory cost-of-living adjustment.	1998 Audit	Not implemented

Operations & Maintenance Recommendations

Recommendation	Source	Status
1. Analyze vessel deployment strategies to reduce non-revenue generating boat moves.	1998 Audit	Implemented
2. Extend the International Safety Management effort to include WSF domestic routes.	1998 Audit	Implemented
3. Develop emergency response and contingency plans.	1998 Audit	Implemented
4. Implement a maintenance management system.	1998 Audit	Implemented
5. Restructure Eagle Harbor Repair facilities operation.	1998 Audit	Partially implemented: Master plan complete – Phase I construction nearly complete. Staffing & cost estimating improvements.
6. Maintain an in-house maintenance & preservation facility.	Task Force	
7. Develop an information technology plan.	1998 Audit	Partially implemented: Planning done but still have aging, non-integrated information systems.
8. Continue to adopt operational efficiencies, particularly technology to implement variable pricing.	Task Force	Not fully implemented - Electronic fare system implementation behind schedule.

Budget Recommendations

Recommendation	Source	Status
1. Develop guidelines for project and program budget estimates.	1991 Study	Implemented with life-cycle cost model.
2. Strengthen budget procedures to more closely monitor budget revisions and to evaluate budget revisions against service levels.	1991 Study	Not implemented: Budgets are not compared to the original budget and are not tied to service and performance objectives established in the long-range plan.
3. Communicate to the legislature more clearly the policy implications of schedule and budget adherence.	1991 Study	Partially implemented: WSF has not linked its operating and capital budgets to service levels. The preservation program shows the status of the preservation program against recommended objectives.
4. State needs to do a better job of telling citizens what they are getting for their ferry operating and capital investments.	Task Force	
5. Legislature should exempt ferry tariffs from I-601 to gradually raise tariffs to achieve 80% farebox recovery over six years. <ul style="list-style-type: none"> a. The effect on demand should be evaluated following each tariff increase. <ul style="list-style-type: none"> o Passenger-only ferries (POF) tariffs should be set at double passengers' level on auto ferries. o Implement tariff route equity based on a journey time-based model. 	Task Force	Partially implemented: The Legislature exempted ferry tariffs from I-601. Since 2000, fares have increased between 60% and 108%. Farebox recovery in FY 2005 was at 76%. The report on the effect of tariff increases on demand has not been produced, though elasticity is considered in the revenue forecasts. Tariff route equity has been implemented.

Service Level Recommendations

Recommendation	Source	Status
1. Ferries should remain open with no currently operated ferry routes terminated.	Task Force	Superseded by legislative direction to discontinue WSF passenger-only ferry service.
2. State should continue both auto ferry and passenger-only ferry service.	Task Force	Superseded by legislative direction to discontinue WSF passenger-only ferry service.
3. Ferries should continue reduced level of service through 2001-03 with future service needs to be re-evaluated once WSF is able to more accurately assess the impact of tariff increases on ridership.	Task Force	Implemented. Service increases have not been possible given funding constraints.

Long-Range and Capital Planning Recommendations

Recommendation	Source	Status
1. Develop a life-cycle cost model for terminals.	1998 Audit	Implemented
2. Use a modified version of the current life-cycle cost model to provide an economic condition rating.	2001 Audit	Implemented
3. Build from WSF's corporate strategy to develop a strategic plan down to the section and individual implementation.	1998 Audit	Not implemented
4. Validate the current travel forecast model with a new origin and destination study and update the origin and destination study every five years.	1998 Audit	Partially implemented. A 1999 origin and destination study was done and another is planned for 2006
5. Short- and long-term capital preservation requirements should be met. <ul style="list-style-type: none"> a. Current life-cycle preservation activities do not address the replacement of assets as they reach the end of their useful life. b. Catching up and keeping up with ferry and terminal preservation & maintenance means raising the condition rating for vital systems to between 90% and 100% by 2011, and for non-vital systems to between 60% and 80% by 2011. c. New construction to replace vessels & terminals will result in reduced preservation costs. <ul style="list-style-type: none"> i. Replace four auto ferries. ii. Mukilteo & Anacortes terminal projects should address preservation & multi-modal needs. iii. Replace two POF vessels. 	Task Force	Partially implemented: Life-cycle preservation activities do not address the replacement of assets. System goals should be met by 2015. Funding has been secured for four auto ferries and the terminal projects address multi-modal needs. The POF vessel recommendation has been superseded by subsequent legislative direction to discontinue WSF passenger-only ferry service.
6. WSF should conduct a clean-slate analysis of service.	1998 Audit	Not implemented: Assumed existing landside and vessel paradigms in Draft Long-Range Strategic Plan.

Vessel Construction Policy and Pre-Planning Recommendations

Recommendation	Source	Status
1. Support a policy of renewed shipyard competition and additional shipyard capacity by facilitating renewed shipyard competition and support of out-of-state shipyards.	1991 Study	<ul style="list-style-type: none"> • 1998 Audit reported as implemented. • Implemented legislatively approved revisions to vessel contracting procedures. (see below)
2. Formalize refurbishment decision process.	1991 Study	1998 Audit reported as implemented.
3. Establish a steel maintenance program.	1991 Study	<ul style="list-style-type: none"> • 1998 Audit reported as not implemented and repeated the recommendation. • Implemented since 1998 with formalized program and survey of single-compartment ferries.
4. Establish formal pre-refurbishment inspection program.	1991 Study	Partially implemented. WSF does not remove vessels from service for the recommended stand-alone inspections. WSF has instituted a destructive testing program to inspect hidden areas.

Vessel Construction Specification Development Recommendations

Recommendation	Source	Status
1. Standardize work scoping process.	1991 Study	<ul style="list-style-type: none"> • 1998 Audit reported as implemented. • 2001-02 developed standardized work specification language.
2. Develop a procedure for estimating planned growth.	1991 Study	• 1998 Audit reported as implemented.

Recommendation	Source	Status
		<ul style="list-style-type: none"> Included in 2002 Vessel Engineering Manual.
3. Develop a standard structure for unit pricing.	1991 Study	1998 Audit reported as implemented.
4. Specify bid lots for all planned growth.	1991 Study	1998 Audit reported as implemented.

Vessel Construction Contracting Recommendations

Recommendation	Source	Status
1. Revise standard contract language on the use of unit prices to preclude increased/decreased quantities from negotiation.	1991 Study	1998 Audit reported as implemented.
2. Award planned growth along with base work package.	1991 Study	1998 Audit reported as implemented.
3. Require the shipyard to provide additional management tools.	1991 Study	1998 Audit reported as implemented.
4. Modify legislation controlling firm, fixed pricing contracting practices to allow WSF more discretion and flexibility in its procurement/contracting policy.	1998 Audit	<p>Implemented: SHB 2221 passed in the 2001 legislative session enabled WSF to negotiate single sole-source contracts for vessel maintenance and preservation when there is only one bidder able to accommodate a vessel or class of vessels in their facility. It also streamlined WSF's approval process for utilizing the RFP process.</p> <p>SHB 1680 passed in the 2001 legislative session included authority for WSF to utilize the modified RFP process for new vessel construction.</p>
5. Examine and pursue alternative procurement approaches and statutory authorization regarding procurement of vessel maintenance and repair services.	2001 Audit	
6. Seek legislative changes allowing the procurement of auto ferry equipment and systems through the Request for Proposal -Best Value process without first requesting an exception to the Invitation for Bid process.	2001 Audit	
7. Seek legislative authority to allow the use of a modified Request for Proposal process to procure large-ferry new construction.	2001 Audit	
8. Implement the use of checklists to assure contract coordinators maintain contract files.	2001 Audit	Implemented
9. Modify current contracting procedures manual and update as appropriate.	2001 Audit	Not implemented: WSF plans to complete by Dec. 31, 2006.

Vessel Construction Contract Management Recommendations

Recommendation	Source	Status
1. Improve change order management procedures.	1991 Study	1998 Audit reported as implemented.
2. Modify the change order approval process to reduce change authority.	1991 Study	1998 Audit reported as implemented.
3. Establish an audit function within WSF reporting to the engineering superintendent or the Assistant Secretary.	1991 Study	Not implemented. WSF does not have a separate audit function.
4. Formalize the asbestos abatement program.	1991 Study	Not implemented. The fleet-wide asbestos survey was not undertaken, but in 1991-1996 surveys were done by vessel class. WSF estimates that 5% to 10% of asbestos remains in the fleet. Bainbridge, Seattle and Anacortes are the only terminals with asbestos remaining.
5. Assign a contract administrator from the contracts/legal department to new construction, renovation and preservation contracts over \$10 million.	1998 Audit	Implemented in 2001 for M. V. Yakima Preservation project. Other preservation projects have been below \$10 million.
6. Modify the standard contract language on contract problem reports to require timely submission of proposals to accomplish indefinite-quantity work items.	1998 Audit	Implemented: WSF eliminated indefinite-quantity work clauses from vessel preservation and new construction contracts.
7. Reduce the amount of preplanned indefinite-quantity work included the contract award to no more than 10%.		
8. Increase the length of time between contract and shipyard arrival.	1998 Audit	Implemented. Lengthened to 30 days.

Section One

Introduction

This review covers a set of studies and reports prepared for and by Washington State Ferries (WSF) between 1998 and 2006 about WSF strategic planning and finances. The purpose of this review is to compile and assess the recommendations and policy directions from past studies and audits, focusing on WSF operating programs, and terminal and vessel maintenance and preservation. Studies and reports reviewed include performance audits, Legislative Task Force reports, long-range plans, passenger-only ferry studies, origin and destination studies, a customer survey, and various performance reports. The reports are summarized in the following sections and in more detail in Appendices A-D.

Section Two

Long-Range Plans and Passenger-Only Ferry Studies

The Washington State Transportation Commission (WSTC) adopted the *Washington State Ferries System Plan 1999-2018* in 1998. WSF has updated this plan with a *Draft Long-Range Strategic Plan 2006-2030*, developed as part of the Washington State Department of Transportation's (WSDOT) revision of the Washington State Transportation Plan. The 2006-2030 plan is the basis for WSF's current long-range capital program.

A January 2005 report by Burk & Associates, the *Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System*, reviewed WSF's passenger-only ferry service. A Joint Transportation Committee Passenger-Only Ferry Task Force utilized this report and a *Passenger-Only Ferry Cost Analysis* prepared by Parametrix to issue a *Task Force Report* in January 2006. The 2006 Legislature directed WSF to discontinue WSF passenger-only ferry service in light of the costs of such service, with the Seattle-Vashon passenger-only ferry service authorized to continue through 2007. This legislative direction was incorporated into the 2006-2030 draft plan. Appendix A includes a synopsis of the 1999-2018 plan, the draft 2006-2030 plan and the three passenger-only ferry reports.

The 2006-2030 plan relied on a 1999 origin and destination study documented in the *WSF Travel Survey and Analysis Results Report 2000* by Parsons Brinckerhoff. The *Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System* relied on a 2003 origin and destination study of the south Puget Sound area documented in the *Washington State Ferries South Sound Travel Survey Analysis and Results Report 2004* by Parsons Brinckerhoff. Appendix B includes a synopsis of these origin and destination studies.

A. Planning Strategies

The two long-range plans and the *Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System* identify key strategies that guide ferry system planning. Consistent strategies among the three are: capacity to meet the adopted level of service standards (see Section C for further explanation of the level of service standards); inter-modal connections between WSF service and local public transit providers; and having an operationally and financially sustainable system. The 1999–2018 plan also included as key strategies: traffic demand management strategies to reduce the number of single occupant vehicles driven onto ferries; improving the south Sound routes; and completing terminals to accommodate new vessels. The 2006-2030 plan identifies as key strategies: charging prices that are reasonable and equitable as required by RCW 47.60.326; environmental stewardship; and respect for local government land use and growth management plans. The *Ten-Year Passenger Strategy* included as key strategies efficiency, by helping to mitigate bottlenecks and chokepoints in the ferry system,; and cost-effectiveness in using existing assets and passenger carrying capacity.

Table 1. Planning Strategies

Planning Strategies	1999-2018 Plan	2006-2030 Plan	Ten-Year Strategy (passenger-only ferries)
1. Capacity: meet level of service standard	yes	yes	yes
2. Multi-modal connections	yes	yes	yes
3. Financially sustainable	yes	yes	yes
4. Terminal improvements		yes	
5. Traffic demand management	yes		
6. South Sound routes	yes		yes
7. Prices		yes	
8. Local government plans		yes	
9. Environment		yes	
10. Public consultation		yes	
11. Cost-effectiveness			yes
12. Efficiency – mitigate bottlenecks			yes

B. Service Corridors

WSF planning is done systemwide and by four service corridors—Central Puget Sound, North Puget Sound, South Puget Sound and the San Juan Islands. The variation among the service corridors is important to understanding the proposed ferry service levels, ridership projections and the capital program. The four service corridors serve seven distinct travel sheds or travel markets, which are analyzed in the origin and destination studies.

Table 2. Service Corridors

Corridor	Routes	Travel Sheds	% passengers (03)
Central	Bainbridge-Seattle Bremerton-Seattle Edmonds-Kingston	One	56%
North	Mukilteo-Clinton Pt. Townsend-Keystone	Two	20%
South	Seattle-Vashon POF Fauntleroy-Vashon-Southworth Point Defiance-Tahlequah	Two (Pt. Defiance separate)	16%
San Juan	Anacortes-Friday Harbor routes Inter-island routes International route	Two (International, San Juan Islands)	8%

C. Level of Service Standards

The WSTC adopted level of service standards for ferry service in 1994. These standards are used in the 1999-2018 and 2006-2030 Draft Plan to assess whether the system has adequate capacity to meet ridership demand and are critical determinants of WSF’s capital plan.

For the Puget Sound routes, which provide service to more than 92 percent of the ferry system’s passengers, the level of service standard is based on the afternoon (PM) peak weekday traffic westbound (3:00 – 7:00 PM) assumed as a Tuesday, Wednesday, or Thursday in May. The standard for pedestrians walking onto the ferry is no waits, including not waiting for the “peak of the peak” sailing, that is, the most congested sailing of the day. For vehicles the standard varies from a one-boat wait to a two-boat wait on the Seattle-Bainbridge Island and Mukilteo–Clinton routes, which have shorter times between sailings. (In the 2006-2030

Draft Plan these standards are expressed as hour waits instead of boat waits, but the standards remain the same.)

The San Juan Island routes, which in 2005 had 8 percent of the system's passengers, experience daily and seasonal peaks rather than PM peaks. The level of service standard for walk-ons is that there is no wait. For vehicles, the level of service standard varies between peak and off-peak service expressed as the percentage of monthly sailings where demand exceeds capacity—between 25 percent and less than 40 percent during the peak season and between 15 percent and less than 25 percent during the off-peak season.

Table 3. Level of Service Standards

Area	Category	Level of Service Standard	Measured
Puget Sound	Pedestrian	No wait	PM Peak-westbound weekday 3:00 PM-7:00 PM
	Auto	One boat wait except Bainbridge & Mukilteo – 2 boat	
San Juan Islands	Pedestrian	No wait	% of monthly sailings where demand exceeds capacity
	Auto	Peak – 25% - <40% Off-peak – 15% - <25%	

D. Ridership

Ridership projections and the level of service standards are the cornerstone of WSF's Draft Long-Range Plan and capital program. Ridership projections are partially based on origin and destination studies, with the 1999-2018 relying on a 1993 origin and destination study, and the 2006-2030 plan on the 1999 origin and destination study.¹

The projections for ridership in the Draft Long-Range Plan use the Puget Sound Regional Council (PSRC) transportation planning model to project growth rates for cross-Sound commute periods (PM peak westbound 3:00 – 7:00 PM) for King, Snohomish, Kitsap and Pierce county residents. These projections are then used in a specific WSF transportation model to estimate route choice and mode of access for each trip. Historic ridership data on the relationship between commute-period ridership and annual ridership is used to project annual ridership.

For counties that lie outside the jurisdiction of the PSRC, WSF uses Office of Financial Management (OFM) population projections, which are then applied to the WSF transportation model to estimate route choice and mode of access. For the north Sound corridor the historic relationship of commute-period ridership to annual ridership is used to project annual ridership. For the San Juan Islands, daily ridership is used for service planning.

The 1999-2018 plan projected a system-wide increase in ridership of 70 percent. This projected level of ridership, which was made before the sharp fare increases instituted in 2001 as a result of the loss of Motor Vehicle Excise Tax (MVET) funding, has not materialized. Between 1999 and 2005 system ridership has fallen by 10 percent.²

¹ The 1998 Department of Transportation Performance Audit by Booz Allen recommended that the origin and destination study be updated every five years. (p. 8-20)

² WSF Route Summary Statements 1999-2005.

The 2006-2030 plan projects ridership growth of 70 percent with current service and 88 percent with planned service improvements. The plan notes that three factors affect ridership growth:

1. *Demographic growth:* Growth in Kitsap County is especially important. The choice vehicle commuters make between the expanded Tacoma Narrows Bridge and the ferries (assumed to be 75 percent of growth going to the bridge and 25 percent to ferries) is particularly important.
2. *Fares:* Ferry fares are planned to continue to increase annually, with the rate of increase capped at 2.5 percent per year, assumed to be in line with inflation. As fares stabilize, WSF believes that passenger growth will return to pre-I-695 levels (before loss of MVET funding).
3. *Service related growth:* As service improves with the planned increase of 40 percent in service levels, riders will be induced to use the system who otherwise would not.³

Both plans assume a shift away from drivers and vehicles using the ferries to more walk-on passengers. The 1999-2018 plan, which assumed a shift from 41 percent peak period walk-on passengers to 55 percent walk-on by 2018, notes: “the future system must rely on more people walking on rather than driving on to meet level of service standards” (p. 13). The 2006-2030 draft plan assumes that walk-ons, which increased to 44 percent of peak period passengers in 2003, will increase further to 62 percent by 2030.

Table 4. Ridership Projections

	Ridership Projection	PM Mode Split
1999-2018 Plan	70%	55% walk-on from 41%
2006-2030 Plan	70% current service/88% with additional service	62% walk-on from 44%
2005 Actual	10% decrease (1999-2005)	44% walk-on (2003)

The projected increase in ridership varies among the service corridors, with the 1999-2018 plan anticipating the highest rate of increase in the central Sound corridor and the 2006-2030 draft plan anticipating the greatest increase in the south Sound corridor. It is projected that the central Sound corridor will continue to have the highest percentage of total ridership.

Table 5. Ridership Projections by Service Corridor

Corridor	1999-2018 Projection	1999-2005 Actual	2006-2030 Projection	% of passengers (2030)
Central	136% increase	12% decrease	82% increase	56%
North	43% increase	8% decrease	62% increase	17%
South	68% increase	9% decrease	113% increase	19%
San Juan	77% increase	3% decrease	77% increase	7%

E. Service and Capital Improvements

The 2006-2030 plan projects capital improvements required to service the projected ridership within the established service level standards, starting with vessel acquisitions. Terminal improvements are identified to meet projected ridership and to accommodate anticipated

³ 2006-2030 Draft Long-Range Plan (p. 14)

vessel changes.⁴ These improvements and the capital requirements for preservation of terminals and vessels are the basis of the long-range capital program.

The 2006-2030 Draft Plan assumes three groups of vessel acquisitions and dispositions, with a total of fourteen new vessels and fourteen retirements/sales of vessels. Funding for the first group of new vessels, four 144-car Expanded Issaquah class vessels, has been appropriated by the legislature.

By 2030 the fleet returns to its current size of twenty-eight vessels, with no passenger-only ferries, and an increase in capacity and service additions as noted in Table 7 below on corridor service and capital improvements. By 2030 the fleet would also be more uniform, with sixteen Extended Issaquah class 144-car vessels and six Issaquah class vessels. Standardization of the fleet is anticipated to reduce preservation and maintenance costs.

**Table 6. Fleet Acquisition
Draft Long Range Strategic Plan**

Size cars	Fleet -current	Group 1 (06-13)	Fleet 2013	Group 2 (14-21)	Fleet 2021	Group 3 (22-30)	Fleet 2030
> 200	3 Mark II		3 *		3		3
140-190	4 Super 2 Jumbo	4 new (144 car)	10	4 new (144 car)/ 1 retire Super	13	6 new (144 car) 3 retire Super	16
90-120	6 Issaquah		6		6		6
90	3 Evergreen		3		3	1 retire	2
45-60	6 Steel Elec/others	4 retire	2	1 retire	1		1
Passenger-only	4	Retire/sell					
Total Vessels	28		24		26		28

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* Modified to increase seating but not capacity.

Seven of the new vessels will be used to expand service, while five of the new vessels will replace retired vessels. Additional vessels for more frequent service are planned for the central Sound corridor on the Edmonds-Kingston and Bremerton-Seattle routes; for the north Sound corridor on the Mukilteo-Clinton and the Keystone-Pt. Townsend routes; for the south Sound corridor on a new Seattle-Southworth route; and for the San Juan Islands corridor.

Terminal improvements are planned to match the vessel procurements and service expansions and to meet projected ridership. Major terminal improvements are anticipated in the central Sound corridor at Bainbridge Island, Colman Dock in Seattle and Edmonds; in the north Sound corridor at Mukilteo, Clinton and Keystone; in the south sound corridor at Southworth; and in the San Juan Islands at Anacortes.

⁴ The 1999-2018 Plan included an emphasis on passenger-only ferry service, particularly in the Puget Sound service corridors, as a way to meet service demands. The 2006-2030 draft plan is based on the legislative direction to discontinue WSF provision of passenger-only ferry service and assumes third party operation of passenger-only service.

**Table 7. Corridor Service & Capital Improvements
Draft Long-Range Strategic Plan**

Corridor	Issues	Service Improvements	Vessel Additions	Terminal Improvements
Central	<ol style="list-style-type: none"> 1. Growth in vehicle demand on all three routes. 2. Growth in passenger demand on Bainbridge route. 3. Vehicle traffic at Colman Dock & SR 305. 	<ol style="list-style-type: none"> 1. Balance by improving service on Bremerton & Kingston routes. 2. Assume private passenger-only ferry service Kingston-Seattle. 	<ol style="list-style-type: none"> 1. Kingston – 2 vessels (Groups 1 & 3) 2. Bremerton – 1 vessel (Group 2) 	<ol style="list-style-type: none"> 1. Bainbridge – expansion 2. Colman Dock – Seattle new terminal & add fourth slip. 3. Edmonds – new terminal, two additional slips, overhead pedestrian loading.
North	<ol style="list-style-type: none"> 1. Meeting vehicle demand on routes. 2. Tentative plan until completion of Keystone Harbor Study addressing navigational issues. 	<ol style="list-style-type: none"> 1. Increase vehicle carrying capacity. 2. Review service options with Keystone Harbor Study complete. 	<ol style="list-style-type: none"> 1. Mukilteo – 1 vessel (Group 3) 2. Keystone – 1 vessel summers (Group 3) 	<ol style="list-style-type: none"> 1. Mukilteo – Relocate to new terminal with Sounder station and bus transit center. 2. Clinton – Third slip & overhead loading. 3. Keystone – dependent on harbor study.
South	<ol style="list-style-type: none"> 1. Fauntleroy bottleneck/inability to expand. 2. Route structure convenient for riders. 	<ol style="list-style-type: none"> 1. Add direct Southworth-Seattle service/stop triangular service. 	<ol style="list-style-type: none"> 1. Southworth-Seattle 2 vessels (Group 2) 	<ol style="list-style-type: none"> 1. Southworth – 2nd slip
San Juan Islands	<ol style="list-style-type: none"> 1. Meet vehicle demand on all routes. 	<ol style="list-style-type: none"> 1. Maximize possible service. 	<ol style="list-style-type: none"> 1. San Juan routes- 1 vessel (Group 2). 	<ol style="list-style-type: none"> 1. Anacortes – expand terminal & third slip.

F. Capacity Utilization

The level of service standards are based on the peak PM period and are based on waits for the “peak of the peak” sailings for passengers and the peak period for vehicles. The ferry system can meet the passenger demand during the PM peak on all routes, with the exception of the “peak of the peak” Seattle-Bainbridge Island sailing. Capacity for vehicles is more constrained and drives the need for additional and larger vessels, and correspondingly larger terminals. “[T]here are tensions in terms of how priorities should be established regarding moving people versus moving vehicles. This is a particularly significant issue for this Plan, as most of the pressure to expand services is coming from growth in vehicles” (Draft Long-Range Strategic Plan, p. 68). On some routes as service expands to meet vehicle demand, passenger ridership as a percent of capacity of the vessel declines or stays relatively level as ridership increases. The percent capacity utilization for vehicles is projected to be more than 100 percent during the PM peak on the Bainbridge Island route and the Seattle-Bremerton route (despite additional vessels on this route) by 2030.

**Table 8. Capacity Utilization
Draft Long-Range Strategic Plan**

	Passengers		Vehicles	
	2030	2003*	2030	2003
Central Corridor				
Seattle-Bremerton**	44%-53%	61%	122%	N/A
Seattle-Bainbridge Island	95%	53%	116%	N/A

	Passengers		Vehicles	
	2030	2003*	2030	2003
Edmonds-Kingston**	26%-34%	22%	89%	N/A
North Corridor				
Mukilteo-Clinton**	27-28%	36%	n/a	N/A
Pt. Townsend-Keystone**	13-16%	n/a	n/a	N/A
South Corridor				
Pt Defiance- Tahlequah**	13%	25%	n/a	N/A
Vashon-Southworth	19-22%	4%	n/a	N/A
Fauntleroy-Vashon	21%-22%	33%	n/a	N/A
Fauntleroy-Southworth	55%-59%		n/a	N/A
Seattle-Southworth***	n/a		86%	N/A
** Capacity added ***New service				

* 2030 from 2006-2030 Draft Plan; 2003 from Ten-Year Passenger Strategy

G. Financial Plan

A long-term operating and capital financial plan based on the projected service and capital improvements is included in the 1999-2018 and the draft 2006-2030 plan. The 1999-2018 plan included substantial Motor Vehicle Excise Tax funding, which was eliminated with passage of I-695.

The draft 2006-2030 plan projects \$5.6 billion (in year-of-expenditure dollars) in capital investments to maintain the existing fleet and facilities, deliver the new vessels and terminal improvements, provide funding for emergency repairs, and cover debt service. Sixty percent of total capital expenditures are for vessel preservation and acquisitions; 33 percent for terminal preservation and improvements, and 7 percent for debt service and emergency repairs.

**Table 9. Capital Program
Draft Long-Range Strategic Plan**

Category	06-30 \$ (000s)	%
Vessel Preservation	2,801.0	50%
Vessel Improvements	584.1	10%
Terminal Preservation	1,202.2	22%
Terminal Improvements	614.5	11%
Debt Service	287.9	5%
Emergency Repairs	116.2	2%
Total	5,605.9	

Operating expenses are projected to be less than revenues available from the farebox, other miscellaneous sources such as concessions, and State gas tax and other revenues dedicated to ferry operations over the twenty-five year period. The plan proposes that the net, \$925.5 million, be transferred to help meet capital expenses. Farebox recovery in total over the

twenty-five year period is 98.6 percent, growing from 78 percent in the 2005-07 biennium to 108.9 percent over the FY 2029-31 biennium.

**Table 10. Operating Income & Expense
Draft Long-Range Strategic Plan**

	06-30 (000s)	%	
Operating Income			
Farebox	7,371.1	98%	
Misc Revenue	155.2	2%	
<i>Total Operating Income</i>	<i>7,526.3</i>	<i>88%</i>	<i>of total operating income</i>
Expense			
Vessels	5,171.5	68%	
Terminals	1,148.8	15%	
Management & Support	1,311.4	17%	
<i>Total Operating Expense</i>	<i>7,631.7</i>		
Farebox Recovery	98.6%		
Net	-105.4		
State tax support	1,030.9	12%	of total operating income
Net to capital	925.5		

For capital funding, in addition to the transfer from operating income, the plan anticipates the use of gas tax and other revenues dedicated to ferry capital expenses, including ferry support from the 2003 Nickel Package and 2005 Transportation Partnership Account, plus bond proceeds and federal funds. Discretionary funding by the legislature from gas tax distributions is assumed at a rate to meet preservation standards (90 to 100 percent of vital systems operating within life-cycle and 60 to 80 percent of non-vital systems), for a total of \$2.6 billion or 49 percent of all anticipated capital funding. The transfer of the net income from operations is anticipated to provide 18 percent of capital funding, and dedicated tax support to provide 19 percent. Capital funding is short \$410.7 million over the life of the program, with no source identified in the plan.

**Table 11. Capital Income & Expense
Draft Long-Range Strategic Plan**

	06-30 (000s)	%
Capital Income		
State Distribution of gas tax	615.6	
2003 Nickel funding	164.6	
2005 TPA funding	164.5	
Other dedicated state funds	30.2	
<i>Total dedicated</i>	<i>974.9</i>	<i>19%</i>
Assumed distributions from Motor Vehicle Fund	2,567.0	49%
Transfer from operating	925.5	18%
Bond Proceeds	265.3	5%
Federal funds	462.5	9%
Total capital income	5,195.2	
Total capital expense	5,605.9	
Net	-410.7	

H. Policy Issues

The 2006-2030 draft plan raises six key policy issues:

1. Fares

The projections of ridership and the funding framework assume that fare levels remain close to today's level – increasing at the rate of 2.5 percent annually, which is anticipated to be less than the rate of inflation.

2. Farebox recovery

The plan anticipates that the farebox recovery rate will be over the 80 percent level recommended as a goal by the 2001 Joint Legislative Task Force on Ferries, growing to 109 percent by 2030. If farebox recovery were held to 80 percent, the projections on ridership, operating and capital budgets would change.

3. Service constraints

The plan assumes existing vessel loading (i.e., no double-decker loading) and landside constraints. “[F]or many corridors and terminals the Plan represents the maximum amount of service that can be realized under current terminal and vessel paradigms. . . . To move significantly beyond the service level proposed in the Draft Plan would likely require the construction of new terminals, potentially on both sides of Puget Sound, and possibly in conjunction with introduction of new routes.” (p. 66)

4. Colman Dock

With the proposed new service between Southworth and the Colman Dock and increases in ridership and service on the Bremerton and Bainbridge Island routes, ridership in the PM peak at Colman Dock is expected to increase from approximately 7,500 in 2003 to 19,500 in 2030. The ability of WSF to successfully develop a terminal at Colman Dock that will handle the increase in walk-on and vehicular traffic is a critical issue.

5. Seattle-Kingston passenger-only ferry service

The draft plan relies on third-party operation of a direct Seattle-Kingston passenger-only ferry service to relieve congestion on the Bainbridge Island-Seattle route. Even with this service, it is anticipated that the Bainbridge Island PM peak will be at 95 percent of capacity by 2030 for passengers and at 116 percent for vehicles.

6. Moving people vs. vehicles

“As with the rest of the highway system and the broader transportation system, there are tensions in terms of how priorities should be established regarding moving people versus moving vehicles. This is a particularly significant issue for this Plan, as most of the pressure to expand services is coming from growth in vehicles. There are two principal policy areas where issues of people versus vehicles arise: 1) the Commission congestion (level of service) standards; and 2) fare policies One way to meet the demand for expanded ferry services would be to relax the Commission congestion standards for vehicles An option that would reduce the demand for vehicles and possibly improve the mode shift on ferry routes would be to make vehicle fares relatively more costly than passenger fares over time.” (pp. 68-69)

Section Three

Studies and Task Force Report

In 1991 the Legislative Transportation Committee commissioned a study by Booz Allen & Hamilton and M. Rosenblatt & Son, Inc. on *Washington State Ferries Management of Vessel Refurbishment Programs* (1991 Study). The purpose of the study was to evaluate the ferry vessel refurbishment process and procedures, particularly those related to vessel inspection, engineering, cost estimating, construction management, change order management and budget procedures.

In 1998, the Joint Legislative Audit Review Committee (JLARC) commissioned the *Department of Transportation Ferry System Performance Audit 98-6* by Booz Allen & Hamilton (1998 Audit) to review the implementation of the 1991 recommendations and to provide an independent and comprehensive audit of WSF's overall operation. The audit examined WSF's organizational structure, operations, maintenance and safety programs, vessel construction and refurbishment, and long-range planning. The study included recommendations on public/private partnerships that were not endorsed by JLARC.

In 2001 the Office of Financial Management commissioned a *Performance Audit of the Washington State Ferry System Capital Program* by Talbot, Korvola & Warwick (2001 Audit). The study reviewed WSF's capital investment life-cycle cost models; WSF's contracting and bidding processes; contracting and bidding processes used by other entities; and implementation of the 1998 audit recommendations.

In 2000 a Joint Legislative Task Force on Ferries (Task Force) was formed by the legislature, composed of Legislators, citizens, ferry management and ferry workers with the charge to make recommendations to the full legislature on: establishing goals for farebox recovery; options for different levels of service; feasibility of privatization, public-private partnerships or state and local partnerships; and establishing the short-term and long-term capital needs of the system. The Task Force issued its report in January 2001.

Appendix C includes a detailed review of these studies, including their key findings, recommendations, and the implementation status of the recommendations.

The reports include 59 recommendations in 7 categories: organizational structure; labor relations; operations and maintenance; budget; service levels; long-range and capital planning; and vessel construction.

Table 12. Study Recommendations Summary

Area	# Recommendations
Organizational structure	8
Labor relations	4
Operations & maintenance	8
Budget	5
Service levels	3
Long-range & capital planning	6
Vessel construction	25
Total Recommendations	59

A. Organizational Structure

The 1991 Study found that the need to refurbish aging vessels had transformed WSF from an operations-oriented entity to a more capital and construction intensive organization and that better work definitions for refurbishment specifications developed in-house had contributed to reductions in actual growth of refurbishment project budgets. The study made four organizational recommendations, three of which have been implemented. Those implemented include recommendations to reduce the organization layers between the Assistant Secretary and those directly responsible for engineering design and construction; continuing an in-house design engineering capacity; and assigning ships to a single owner port engineer and creating a program manager for ships under construction or refurbishment.

The 1991 Study also recommended that the Assistant Secretary and Operations Superintendent job descriptions be modified to require previous shipyard and/or vessel maintenance management experience. This recommendation was not implemented. The current job descriptions more appropriately emphasize the strategic and policy roles of these positions and better reflect their current range of responsibilities.

The 1998 Audit found that: the diversity of stakeholder interests impeded the ability of WSF to manage and operate effectively and efficiently; the organizational structure was inverted, with senior management having numerous direct reports and lower management having few; management was characterized by high turnover in key positions, which affected operational continuity and succession planning; and while WSF delivered the required safety-based programs effectively, adequate employee development and leadership training were not available. The audit recommended reducing the number of direct reports to the Assistant Secretary, which has been implemented, and that WSF implement an employee training and development program, which has been hampered by lack of funding.

The key finding of the 1998 Audit regarding management turnover continues to be a problem at WSF, with a very similar pattern to that found in the audit occurring between 1998 and 2006.

Table 13. WSF Management Turnover

Position	# of employees 1990 – 1998*	# of employees 1998 – 2006**	Current Title if different from 1 st column/date changed if known
Assistant Secretary/CEO	3	3	Executive Director/2004
Deputy Director	1	2	Director of Finance/2002
Marine Operations Director	3	3	Director of Operations
Human Resources Director	4	2	Director of Human Resources
Vessel Engineering Manager	3	1	Director of Vessel Engineering
Terminal Engineering Manager	5	3	Director of Terminal Engineering
Director of Administration	3	1	N/A (eliminated)

* from Booz-Allen Report

** from WSF

The 1998 Audit recommended evaluating the management system to identify options to reduce decision cycle time, clarify accountability and responsibility, eliminate conflicts and facilitate access to capital. The 2001 Joint Legislative Task Force recommended that the governance structure of WSF be reviewed as part of the Blue Ribbon Commission on Transportation's recommended overall review of transportation governance. The Legislative

Task Force also recommended the creation of local or regional ferry transit districts as a funding mechanism for expanded passenger-only ferry service. The 2005 Legislature established the Washington State Department of Transportation as a cabinet agency reporting to the Governor rather than to the Washington State Transportation Commission. RCW 36.54 adopted in the 2005 legislative session allows for the creation of county ferry districts. SB 6787 adopted in the 2006 legislative session establishes a ferry grant program for ferry districts offering passenger-only ferry service and requires WSF collaboration in terminal operations to support this service.

Table 14. Organizational Recommendations

Recommendation	Source	Status
1. Re-organize to have engineering design & construction report to the Assistant Secretary.	1991 Study	Implemented
2. Reduce direct reports to the Assistant Secretary.	1998 Audit	Implemented
3. Evaluate management structure. 4. Evaluate ferry governance structure/create local or regional ferry transit districts.	1998 Audit Task Force	Implemented - 2005 Legislature established WSDOT as a cabinet agency and passed RCW 36.54 allowing for the creation of ferry districts. 2006 Legislature established ferry grant program for districts offering passenger-only service.
5. Continue in-house design engineering capacity.	1991 Study	Implemented
6. Assign ships to single owner & create program manager for ship construction.	1991 Study	Implemented
7. Job description of Assistant Secretary/Director of Operations include shipyard experience.	1991 Study	Not implemented/Current job descriptions properly emphasize strategic capacity.
8. Develop employee training and development system beyond mandatory safety training.	1998 Audit	Not fully implemented - funding constraints

B. Labor Relations

The 1998 Audit found that: collective bargaining and dispute resolution processes impacted WSF's day-to-day operations and management and its ability to operate efficiently and effectively; grievances and unfair labor practice charges were disproportionately high compared to other state agencies; and the services provided by the Marine Employees Commission were not fully utilized by WSF management and labor unions.

The audit made four recommendations to improve labor relations. A recommendation to conduct a comprehensive job classification and compensation study to support collective bargaining and a recommendation to evaluate the benefits of improving current Marine Employees Commission services and/or placing WSF marine employees under the Public Employee Relations Commission have been fully or partially implemented. The 2006 Legislature passed SHB 3178, which reformed collective bargaining for WSF by: assigning responsibility to the Governor; modifying the timeframe for negotiations; requiring a determination of financial feasibility by the Office of Financial Management; creating a provision to return to collective bargaining in the event of a revenue shortfall; and including an interest arbitration provision.

The other two recommendations from the 1998 Audit—to align marine employees’ overtime with the rest of state employees to pay time-and-a-half for overtime rather than double time, and to remove the mandatory cost of living adjustments for WSF bargaining unit employees—have not been implemented.

The 1998 Audit also found that labor relations adversely affects the ability of WSF to operate effectively and efficiently, and that the organization experiences an extraordinary number of unfair labor practice charges and grievances. These problems continue today. Both the legislature and WSF anticipate that this situation may be at least partially rectified with the passage of SHB 3178.

Table 15. Labor Relations Recommendations

Recommendation	Source	Status
1. Comprehensive job classification & compensation study as basis for collective bargaining.	1998 Audit	Implemented – 2006 SHB 3178
2. Improve Marine Employees Commission.	1998 Audit	Partially implemented– 2006 SHB 3178
3. Align overtime with other state employees (one and a half times hourly rate rather than double).	1998 Audit	Not implemented
4. Remove mandatory cost-of-living adjustment.	1998 Audit	Not implemented

C. Operations and Maintenance

The 1998 Audit found that: WSF incurred expenses and reduced vessel availability from non-revenue trips that might have been avoided; International Safety Management (ISM) procedures were required for international compliance and for safety and should result in system improvements; WSF did not maintain adequate emergency response documentation to meet situational needs; WSF did not fully utilize technology internally or externally to achieve operational savings and support management decision-making; there was greater oversight, ownership and resources dedicated to vessels than to the terminals; the Eagle Harbor repair facility was antiquated and that its staffing, while comparable in costs to private shipyards, was not aligned with seasonal workload variations; and WSF had not successfully implemented a maintenance management system.

The audit recommended: analyzing vessel deployment strategies to reduce or eliminate the frequency of non-revenue-generating boat moves and refueling operations; extending the International Safety Management effort to include WSF domestic routes and terminal operations; developing emergency response and contingency plans for WSF; and accelerating the implementation of a maintenance management system. These recommendations have been fully implemented. WSF has reduced non-revenue boat moves from 1.8 percent of total moves (1996) to 0.5 percent of total moves due to more efficient fueling practices (1999-1,383 fueling trips/2006-317), vessel retirements and service reductions. A maintenance management system, the Maintenance Productivity Enhancement Tool, is in use for all vessels, terminals, at the warehouse, in the purchasing department and at the Eagle Harbor repair facility.

The 1998 Audit recommended that the Eagle Harbor repair facility be restructured to address facilities, staffing levels, workload management and job cost-estimating problems. The 2001

Legislative Task Force recommended that WSF maintain an in-house maintenance and preservation facility. These recommendations have been partially implemented. An Eagle Harbor master facility plan has been completed, with phase one construction to create a drive-on slip nearing completion. The Maintenance Productivity Enhancement Tool will be used to develop a labor collection cost capability that will permit improved job planning, budget forecasting and accurate job costing. Eagle Harbor staffing has been leveled to some extent through WSF's mission integration program, which permits Eagle Harbor staff to work on a "not to interfere" basis on vessels while they are in commercial shipyards. The Project Planning Office at Eagle Harbor includes two planners/estimators to improve job costing.

The 1998 Audit also recommended that WSF develop an information technology plan to identify future information requirements, achieve operational and organization efficiencies, and support management decision-making. WSF has not had funding to fully implement this recommendation and continues to have aging and non-integrated systems. WSF indicates that it plans to seek funding from the 2007 legislature to improve its information systems.

The 2001 Legislative Task Force recommended that WSF continue to adopt operational efficiencies, including investments in technology to enable WSF to implement time-of-day and time-of-week variable tariffs. This recommendation has been partially implemented. An electronic fare system was funded (\$15.7 million) beginning in the 2003 legislative session. Implementation of the system is behind schedule. Testing on the Port Townsend-Keystone route started in January 2006, with extension of the system to Anacortes in October 2006.

Table 16. Operations & Maintenance Recommendations

Recommendation	Source	Status
1. Analyze vessel deployment strategies to reduce non-revenue generating boat moves.	1998 Audit	Implemented
2. Extend the International Safety Management effort to include WSF domestic routes.	1998 Audit	Implemented
3. Develop emergency response and contingency plans.	1998 Audit	Implemented
4. Implement a maintenance management system.	1998 Audit	Implemented
5. Restructure Eagle Harbor Repair facilities operation. 6. Maintain an in-house maintenance & preservation facility.	1998 Audit Task Force	Partially implemented: Master plan complete – Phase I construction nearly complete. Staffing & cost estimating improvements.
7. Develop an information technology plan.	1998 Audit	Partially implemented: Planning done but still have aging, non-integrated information systems.
8. Continue to adopt operational efficiencies, particularly technology to implement variable pricing.	Task Force	Not fully implemented - Electronic fare system implementation behind schedule.

D. Budget

The 1991 Study found that: inaccurate program budget estimates led to growth in refurbishment capital budgets; no formal guidelines existed to prepare, justify and show linkage of capital budgets to traffic demand; and the system used for accountability and monitoring of the original program budget estimates may have contributed to the continued

inaccuracy of estimating. Financial reports used the current authorized budget not the original budget estimate, and post-program reviews did not include a review of initial budget estimates relative to actual program costs.

The 1991 Study recommended that WSF develop guidelines for project and program budget estimates. This recommendation has been implemented through the vessel and terminal life-cycle cost models.

The 1991 Study recommended that WSF strengthen budget procedures to more closely monitor budget revisions, and that the policy implications of schedule and budget adherence should be more clearly communicated to the legislature in the original budget and subsequent versions. The budget procedures recommendations included: establishing a process for evaluating budget revisions against service objectives prior to approval; comparing major budget revisions against the original budget, as well as the prior budget revision; and limiting budget revision authority.

The Legislative Task Force recommended that the state do a better job of telling citizens what they are getting for their ferry operating and capital investments. The Task Force recommended that budgets be formatted as maintenance, operations, preservation and improvement expenses; ferry capital projects be included in the Transportation Executive Information System (TEIS); information be presented in performance-based budgeting modules; and more information be made available to the public.

Some of the Task Force's recommendations have been implemented, including the inclusion of the ferry capital program in TEIS. Information is presented in a performance-based budgeting module through the use of WSF's life-cycle cost models. The recommended alignment of budget decisions with planned service levels has not been implemented nor has the systematic reporting of expenditures against the original budget. WSF divides its capital budget by preservation and improvements.

The Task Force's findings on tariffs were that: I-601 would limit ferry tariff increases to 2.7 percent annually without a waiver from the legislature; current tariff relationships and route groups were based on the tariff structure WSF inherited from the Black Ball system in 1951; there was no policy rationale for the current relationship among tariffs on routes of different lengths; and WSF had never implemented a tariff increase of a magnitude to cause a decrease in ridership.

The Task Force recommended that the legislature exempt ferry tariffs from I-601 so that tariff increases could be phased in over six years, with the goal of raising farebox recovery systemwide to 80 percent. The Task Force also recommended that: the effect on demand should be evaluated following each tariff increase; passenger-only ferry tariffs be set at double the passenger level on auto ferries; and WSF should implement tariff route equity based on a journey time-based model. These recommendations have been implemented, with the exception of the report on the effect of tariff increases on demand. Farebox recovery rose to 76 percent systemwide in 2005.

Table 17. Budget Recommendations

Recommendation	Source	Status
1. Develop guidelines for project and program budget estimates.	1991 Study	Implemented with life-cycle cost model.
2. Strengthen budget procedures to more closely monitor budget revisions and to evaluate budget revisions against service levels.	1991 Study	Not implemented: Budgets are not compared to the original budget and are not tied to service and performance objectives established in the long-range plan.
3. Communicate to the legislature more clearly the policy implications of schedule and budget adherence. 4. State needs to do a better job of telling citizens what they are getting for their ferry operating and capital investments.	1991 Study Task Force	Partially implemented: WSF has not linked its operating and capital budgets to service levels. The preservation program shows the status of the preservation program against recommended objectives.
5. Legislature should exempt ferry tariffs from I-601 to gradually raise tariffs to achieve 80% farebox recovery over six years. b. The effect on demand should be evaluated following each tariff increase. o Passenger-only ferries (POF) tariffs should be set at double passengers' level on auto ferries. o Implement tariff route equity based on a journey time-based model.	Task Force	Partially implemented: The Legislature exempted ferry tariffs from I-601. Since 2000, fares have increased between 60% and 108%. Farebox recovery in FY 2005 was at 76%. The report on the effect of tariff increases on demand has not been produced, though elasticity is considered in the revenue forecasts. Tariff route equity has been implemented.

E. Service Levels

The Task Force made two recommendations related to passenger-only ferries (POF) that have been superseded by subsequent legislative direction to discontinue passenger-only service in light of the costs of such service. The Task Force recommended that WSF should continue its then reduced level of service through 2001-2003, which was implemented. Service additions, if any, were to be evaluated based in part on specific Task Force findings with regard to the Port Townsend-Keystone and Point Defiance-Talequah routes and in light of experience with the elasticity of demand as tariffs increased.

Table 18. Service Level Recommendations

Recommendation	Source	Status
1. Ferries should remain open with no currently operated ferry routes terminated.	Task Force	Superseded by legislative direction to discontinue WSF passenger-only ferry service.
2. State should continue both auto ferry and passenger-only ferry service.	Task Force	Superseded by legislative direction to discontinue WSF passenger-only ferry service.
3. Ferries should continue reduced level of service through 2001-03 with future service needs to be re-evaluated once WSF is able to more accurately assess the impact of tariff increases on ridership.	Task Force	Implemented. Service increases have not been possible given funding constraints.

F. Long-Range and Capital Planning

The 1998 Audit found that: the WSF mission statement was not supported by detailed standards and performance measures; the cornerstone of long-range planning was the use of the travel forecasting model for demand forecasting; the fleet planning process was scenario-based, focused on service planning by route and region, which may not optimize operating and capital costs; WSF terminals are out-of-date and have insufficient capacity to support future demand; and estimating capital expenditure requirements builds from recent construction costs, the life-cycle cost model and professional experience.

The 1998 Audit recommended that WSF build from its corporate strategy to develop a strategic plan detailing corporate goals and objectives, actions and implementation steps, and timing of actions to department and individual responsibilities. The audit also recommended that the travel forecast model be updated with a new origin and destination study and that the origin and destination study be updated every five years. They recommended that WSF conduct a clean-slate fleet and service optimization exercise to identify and evaluate benefits-costs of an unconstrained fleet and compare it to the twenty-year plan.

These recommendations have been partially implemented. WSF has not developed a detailed strategic plan. The origin and destination study was updated in 1999, but was not updated in 2004. WSF has not conducted a clean slate analysis and, as indicated in the 2006-2030 Draft Long-Range Plan, anticipates maximizing service with the current vessel and landside paradigms by 2030.

The 1998 Audit also recommended that a life-cycle cost model be developed for terminals. The 2001 Audit recommended that the life-cycle cost models be modified to include an economic condition rating. These recommendations have been implemented.

The Task Force recommended that short- and long-term capital preservation requirements be met. They noted that the current life-cycle preservation activities do not address the replacement of assets as they reach the end of their useful life. They recommended that catching up and keeping up with ferry and terminal preservation and maintenance means raising the condition rating for vital systems to between 90 percent and 100 percent by 2011 and for non-vital systems to between 60 percent and 80 percent. The Task Force noted that new construction to replace vessels and terminals will result in reduced preservation costs, and recommended the replacement of four aging auto ferries. They also recommended that the Mukilteo and Anacortes terminal projects address preservation and multi-modal needs, and that two passenger-only ferry vessels be replaced.

These recommendations have been partially implemented, with the exception of the recommendation to replace the two passenger-only ferries, which has been superseded by subsequent legislative direction to discontinue WSF passenger-only service. WSF anticipates that with current funding, the preservation goals will be met by 2015. Funding has been secured for four new ferries. The Mukilteo and Anacortes terminal projects address multi-modal needs. Current life-cycle preservation activities do not address the replacement of assets that are nearing the end of their useful lives.

Table 19. Long-Range and Capital Planning Recommendations

Recommendation	Source	Status
1. Develop a life-cycle cost model for terminals.	1998 Audit	Implemented
2. Use a modified version of the current life-cycle cost model to provide an economic condition rating.	2001 Audit	Implemented
3. Build from WSF's corporate strategy to develop a strategic plan down to the section and individual implementation.	1998 Audit	Not implemented
4. Validate the current travel forecast model with a new origin and destination study and update the origin and destination study every five years.	1998 Audit	Partially implemented. A 1999 origin and destination study was done and another is planned for 2006
5. Short- and long-term capital preservation requirements should be met. <ul style="list-style-type: none"> c. Current life-cycle preservation activities do not address the replacement of assets as they reach the end of their useful life. d. Catching up and keeping up with ferry and terminal preservation & maintenance means raising the condition rating for vital systems to between 90% and 100% by 2011, and for non-vital systems to between 60% and 80% by 2011. c. New construction to replace vessels & terminals will result in reduced preservation costs. iv. Replace four auto ferries. v. Mukilteo & Anacortes terminal projects should address preservation & multi-modal needs. vi. Replace two POF vessels. 	Task Force	Partially implemented: Life-cycle preservation activities do not address the replacement of assets. System goals should be met by 2015. Funding has been secured for four auto ferries and the terminal projects address multi-modal needs. The POF vessel recommendation has been superseded by subsequent legislative direction to discontinue WSF passenger-only ferry service.
6. WSF should conduct a clean-slate analysis of service.	1998 Audit	Not implemented: Assumed existing landside and vessel paradigms in Draft Long-Range Strategic Plan.

G. Vessels

The 1991 Study and the 1998 and 2001 Audits dealt extensively with vessel construction. Their twenty-five recommendations can be divided into policy and pre-planning, specification development, contracting, and construction management recommendations. The 1998 and 2001 Audits reviewed implementation of the 1991 recommendations. The 2001 Audit reviewed implementation of the 1998 recommendations.

The 1991 report made recommendations regarding the vessel refurbishment program, which by 1998 had been transformed into a vessel preservation program. The preservation program features more frequent, less expensive renovations to the vessels rather than waiting for the vessel to need a complete overhaul. The 1998 Audit supported the change to a preservation program, noting that the refurbishment program may not have resulted in the greatest return on capital investments, as expenditures for some refurbishments exceed 67 percent of the new construction costs. “The main advantage of a preservation approach (vs. refurbishment) is that it should permit more cost-effective and targeted investments in vessel systems, passenger spaces and hull with lower project expenditures” (p. 7-13).

1. Vessel Construction Policy and Pre-Planning Recommendations

The 1991 Study found that the decline in the region's shipbuilding and repair industry's ability to provide service left WSF vulnerable to higher-than-normal ship refurbishment costs for large vessel drydocking.

The study examined five vessel refurbishments which represented 95 percent of the vessel refurbishment expenditures from 1985-1990. They found that WSF received value for 81 percent of the expenditures and no value for 19 percent of the expenditures. The 19 percent premium resulted primarily from inadequate planning, inspection, specification and contract development, and poor construction and change management procedures. Forty-one percent of growth came from problems during the planning phase, indicating inadequate planning and control processes that resulted in changes and cost increases. A lack of inspection procedures resulted in "hidden surprises" during refurbishment, causing increases in the scope of work.

The study recommended that the Washington State Department of Transportation and the legislature support a policy of renewed shipyard competition and additional shipyard capacity in the region, including facilitating pre-qualification of shipyards with drydocks capable of handling the WSF fleet and supporting out-of-state shipyards. This recommendation, which was noted as implemented in the 1998 Audit, has also been implemented through revisions to the bidding process noted under the contracting section below.

The study also recommended that WSF formalize its refurbishment decision-making process. The 1998 Audit found that this recommendation had been implemented. They also recommended that a steel maintenance program be implemented. This had not been implemented by the time of the 1998 Audit, which reiterated the recommendation. WSF has since formalized its steel maintenance program and, as recommended by the 1998 Audit, had all single-compartment vessels surveyed.

The study recommended that a formal pre-refurbishment inspection be instituted in coordination with vessel operating, maintenance and drydocking schedules to include the identification of hidden or inaccessible items. This recommendation has been partially implemented. WSF has elected not to take vessels out of service for pre-preservation inspections. They have started a destructive testing program as part of the ongoing maintenance inspection program to inspect interior portions of the vessels.

Table 20. Vessel Construction Policy and Pre-Planning Recommendations

Recommendation	Source	Status
1. Support a policy of renewed shipyard competition and additional shipyard capacity by facilitating renewed shipyard competition and support of out-of-state shipyards.	1991 Study	<ul style="list-style-type: none">• 1998 Audit reported as implemented.• Implemented legislatively approved revisions to vessel contracting procedures. (see below)
2. Formalize refurbishment decision process.	1991 Study	1998 Audit reported as implemented.
3. Establish a steel maintenance program.	1991 Study	<ul style="list-style-type: none">• 1998 Audit reported as not implemented and repeated the recommendation.• Implemented since 1998 with formalized program and survey of single-compartment ferries.
4. Establish formal pre-refurbishment inspection program.	1991 Study	Partially implemented. WSF does not remove vessels from service for the recommended stand-alone inspections. WSF has instituted a destructive testing program to inspect hidden areas.

2. Vessel Construction Specification Development Recommendations

The 1991 Study found that insufficiently detailed specifications allowed shipyards too many loopholes to increase the scope and price of work. They recommended that: WSF standardize its work scoping process; develop a procedure for estimating planned growth using data from pre-refurbishment inspections, vessel maintenance histories, and a change order database from previous refurbishments; develop a standard structure for unit pricing as a basis for change order estimating; and specify bid lots for all planned growth to ensure unit pricing is included in the construction contracts.

The 1998 Audit found that these recommendations had been implemented. WSF reports additional implementation with the development in 2001-02 of standardized work specification language and the inclusion of procedures for estimating planned growth in its 2002 Vessel Engineering Manual.

Table 21. Vessel Construction Specification Development Recommendations

Recommendation	Source	Status
1. Standardize work scoping process.	1991 Study	<ul style="list-style-type: none">• 1998 Audit reported as implemented.• 2001-02 developed standardized work specification language.
2. Develop a procedure for estimating planned growth.	1991 Study	<ul style="list-style-type: none">• 1998 Audit reported as implemented.• Included in 2002 Vessel Engineering Manual.
3. Develop a standard structure for unit pricing.	1991 Study	1998 Audit reported as implemented.
4. Specify bid lots for all planned growth.	1991 Study	1998 Audit reported as implemented.

3. Vessel Construction Contracting Recommendations

The 1991 Study found that: proper contract development is a critical tool for controlling growth; 30 percent of all cost growth on WSF refurbishment contracts included charges for delay and disruption and provided no value to WSF; and at peer ferry systems, work scope and price are controlled by unit prices, shipyards being required to estimate work within two weeks of a change request, and if disputed, being required to proceed on a time-and-material basis with a cost ceiling.

The 1991 Study made three recommendations related to contract development. They recommended that WSF revise its standard contract language on the use of unit prices to preclude increased/decreased quantities from negotiation, with increased work to be covered by bid lots. They also recommended that WSF award planned growth along with the base work package to increase control and reduce the basis for shipyard claims for delay and disruption, and that WSF require the shipyards to provide additional management tools such as critical-path-method networks to track schedules.

The 1998 Audit found that these three recommendations had been implemented. The audit made an additional recommendation that the legislature allow WSF to have more discretion and flexibility in its procurement/contracting policies.

The 2001 Audit found in its review of WSF contract files that some files were incomplete, missing or mis-filed, and that the WSF contracting manual needed to be revised. The 2001 Audit also found that the use of the invitation-for-bid method for dockside and small ferry maintenance services was appropriate and that the request for proposal-best value (RFP) process was best for large auto-ferry construction projects. The RFP process could be implemented only with approval of the Secretary of Transportation, which the audit found to be unnecessary and overly restrictive. The audit also found that invitation to bid was the only process available to WSF for new auto ferry construction, which was a process no longer used by other entities for procurement of large vessels.

The 2001 Audit recommended that WSF implement the use of a checklist to assure contract coordinators maintain contract files. This recommendation has been implemented. They also recommended that WSF modify the contracting manual and update it as appropriate. WSF has not implemented this recommendation, but anticipates doing so by the end of 2006.

The 2001 Audit recommended three changes to the state's procurement policies: examining and pursuing alternative procurement strategies; seeking legislative changes allowing the procurement of auto ferry equipment and systems through the RFP process without first requesting an exception to the invitation-for-bid process from the Secretary of Transportation; and seeking legislative authority to allow the use of a modified RFP process to procure large new ferry construction.

The recommended changes in procurement policies have been implemented through actions of the legislature. SHB 2221 approved in the 2001 legislative session enabled WSF to negotiate single sole-source contracts for vessel maintenance/preservation when there is only one bidder able to accommodate a vessel or class of vessels in their facility, and streamlining the approval process for utilizing the RFP process. SHB 1680 approved in the 2001 legislative session included authority for WSF to utilize the modified RFP process for new vessel construction.

Table 22. Vessel Construction Contracting Recommendations

Recommendation	Source	Status
1. Revise standard contract language on the use of unit prices to preclude increased/decreased quantities from negotiation.	1991 Study	1998 Audit reported as implemented.
2. Award planned growth along with base work package.	1991 Study	1998 Audit reported as implemented.
3. Require the shipyard to provide additional management tools.	1991 Study	1998 Audit reported as implemented.
4. Modify legislation controlling firm, fixed pricing contracting practices to allow WSF more discretion and flexibility in its procurement/contracting policy.	1998 Audit	Implemented: SHB 2221 passed in the 2001 legislative session enabled WSF to negotiate single sole-source contracts for vessel maintenance and preservation when there is only one bidder able to accommodate a vessel or class of vessels in their facility. It also streamlined WSF's approval process for utilizing the RFP process.
5. Examine and pursue alternative procurement approaches and statutory authorization regarding procurement of vessel maintenance and repair services.	2001 Audit	
6. Seek legislative changes allowing the procurement of auto ferry equipment and systems through the Request for Proposal -Best Value process without first requesting an exception to the Invitation for Bid process.	2001 Audit	
7. Seek legislative authority to allow the use of a modified	2001 Audit	
		SHB 1680 passed in the 2001

Recommendation	Source	Status
Request for Proposal process to procure large-ferry new construction.		legislative session included authority for WSF to utilize the modified RFP process for new vessel construction.
8. Implement the use of checklists to assure contract coordinators maintain contract files.	2001 Audit	Implemented
9. Modify current contracting procedures manual and update as appropriate.	2001 Audit	Not implemented: WSF plans to complete by Dec. 31, 2006.

4. Vessel Construction Management Recommendations

The 1991 Study found that: the construction management practices and procedures used by WSF allowed shipyards too much leeway in determining the size, scope and price of changes; the procedure then in use for change orders resulted in loss of negotiating leverage and effective control of the shipyard work; the cost per change order at WSF is between three and four times that of other ferry systems; and some other ferry systems have independent engineering auditors.

The 1991 Study recommended WSF improve its change order management procedures to better negotiate unplanned growth with shipyards. They also recommended that: WSF modify its change order approval authority to reduce change authority with cumulative limits; establish an audit function within WSF by establishing one or more audit functions for construction and cost management reporting directly to the Engineering Superintendent or even the Assistant Secretary; and formalize the asbestos abatement program.

The 1998 Audit found that WSF had implemented appropriate modifications to its change order procedures and management. WSF had not, and still has not, implemented the recommendations for a separate audit function nor formalized its asbestos abatement program. The auditor had recommended a fleet-wide asbestos survey as part of the abatement program. This was not implemented, but WSF did surveys by vessel class in 1991-96. WSF reports that staff at the Eagle Harbor repair facility are updating a 2004 asbestos survey and currently estimate that 5 to 10 percent of asbestos is remaining on vessels. Bainbridge, Anacortes and Seattle terminals have remaining asbestos.

The 1998 Audit recommended that WSF assign a contract administrator from the contracts/legal department to new vessel construction, renovation and preservation contracts over \$10 million. WSF implemented this process in 2001 for the M. V. Yakima Preservation project. Since that time WSF reports that implementation of the fleet preservation program has eliminated shipyard contracts over \$10 million.

The 1998 Audit also recommended that WSF modify the standard contract language on contract problem reports to require timely submission of proposals to accomplish indefinite-quantity work and reduce the amount of pre-planned indefinite-quantity work. WSF has implemented these recommendations by eliminating indefinite-quantity work clauses from vessel preservation and new construction contracts.

The audit recommended that the WSF increase the length of time between contract award and ferry shipyard arrival. This has been implemented, with the length of time increased to thirty days.

Table 23. Vessel Construction Contract Management Recommendations

Recommendation	Source	Status
1. Improve change order management procedures.	1991 Study	1998 Audit reported as implemented.
2. Modify the change order approval process to reduce change authority.	1991 Study	1998 Audit reported as implemented.
3. Establish an audit function within WSF reporting to the engineering superintendent or the Assistant Secretary.	1991 Study	Not implemented. WSF does not have a separate audit function.
4. Formalize the asbestos abatement program.	1991 Study	Not implemented. The fleet-wide asbestos survey was not undertaken, but in 1991-1996 surveys were done by vessel class. WSF estimates that 5% to 10% of asbestos remains in the fleet. Bainbridge, Seattle and Anacortes are the only terminals with asbestos remaining.
5. Assign a contract administrator from the contracts/legal department to new construction, renovation and preservation contracts over \$10 million.	1998 Audit	Implemented in 2001 for M. V. Yakima Preservation project. Other preservation projects have been below \$10 million.
6. Modify the standard contract language on contract problem reports to require timely submission of proposals to accomplish indefinite-quantity work items. 7. Reduce the amount of preplanned indefinite-quantity work included the contract award to no more than 10%.	1998 Audit	Implemented: WSF eliminated indefinite-quantity work clauses from vessel preservation and new construction contracts.
8. Increase the length of time between contract and shipyard arrival.	1998 Audit	Implemented. Lengthened to 30 days.

Section Four Customer Survey

In 2002 WSF conducted its first-ever survey of riders. The objectives of the survey were to test interest in different types of amenities that might be provided on vessels and at terminals; measure the importance of and satisfaction with key elements of WSF's service delivery; measure the importance of and satisfaction with current amenities; and analyze differences in customer satisfaction and interest in new amenities across routes and passenger segments. The findings are included in the *Amenity Concept and Customer Satisfaction Study, 2002* by the Northwest Research Group. The survey results are summarized in Appendix B.

The survey found that WSF had a significant base of support for its performance, with 75 percent of all riders satisfied or very satisfied with WSF, and 25 percent dissatisfied. Full-fare riders were more satisfied (79 percent satisfied/ 21 percent dissatisfied) than commuters (71 percent satisfied/ 29 percent dissatisfied).

Forty-eight percent (48%) of all riders felt that the fares represented a good value; 52 percent did not. Full-fare riders were more likely to think the fares were a good value (51 percent) than were commuters (45 percent). The table below shows systemwide responses to questions about needed improvements.

Table 24. Improvement Needed: Systemwide Responses

Improvement	% all riders	% commuters	% full fare
Reduce fares	28%	25%	32%
Provide more boats/more runs	16%	23%	28%
Keep ferries on schedule	14%	20%	8%
Improve customer service	12%	15%	9%
Improve food and beverages	10%	9%	12%

Respondents were asked to rate the importance of certain ferry services and then to indicate whether or not they were satisfied with each service. Those services that more than 90 percent of respondents believed were important and their satisfaction with those services are shown in Table 25.

Table 25. Satisfaction: Systemwide Responses

Service	% important	% satisfied	% not satisfied
On-time performance	97%	67%	33%
Route reliability	96%	76%	24%
Cleanliness of bathrooms on ferries	95%	64%	26%
Cleanliness of ferry	93%	73%	27%
Friendly/helpful ferry employees	91%	66%	34%

Respondents' overall satisfaction, areas of concern, and satisfaction with ferry and terminal services and with ferry amenities varied by route and service corridor as shown in Table 26 below.

Ferry services that respondents were asked to rate included: route reliability, on-time performance, cleanliness of restrooms on the ferry, cleanliness of the ferry, comfort of onboard seating, friendly/helpful ferry employees, overall appearance of the ferry, enforcement of smoking rules, enforcement of rules on rowdiness, clarity of onboard announcements, ability to contact crew members on the ferry, and enforcement of rules on animals.

Terminal services respondents were asked to rate were different for their point of origin and their destination. For their point of origin, respondents were asked to rate their satisfaction with ease of loading the ferry, clarity of directions from employees loading the ferry, cleanliness of restroom at the terminal, ease of purchasing tickets at the ferry terminal, availability of ferry schedule brochures, cleanliness of terminal, road signage to the terminal, overall appearance of the terminal, and availability of fare brochures. Services at the destination terminal that respondents were asked to rate were ease of exiting the ferry, cleanliness of restrooms, cleanliness of the terminal and overall appearance of the terminal. The average terminal satisfaction rating was based on the terminal destination responses.

For ferry amenities respondents were asked to rate their satisfaction with: the cleanliness of the food service area; cleanliness of the dining area; friendliness of food service staff; price of food; price of the beverages; quality of food and beverages on the ferry; variety of food available; variety of beverages available on the ferry; newspaper vending on the ferry; maps, posters and other onboard decorations; brochure racks and advertising onboard/terminal; price of vending machines on the ferry; price of vending machines at the terminals; food and beverage vending machines on the ferry; and food and beverage vending machines at terminals.

Table 26. Satisfaction: Responses By Route

Service	Satisfied Overall % yes	Good Value % yes	Fares Too High % yes	% Satisfied Ferry Service	% Satisfied Terminal Service *	% Satisfied Ferry Amenities
Central Puget Sound						
Edmonds-Kingston	76%	44%	36%	68%	72%/ 73%	39%
Seattle-Bainbridge	79%	54%	26%	66%	56%/ 58%	38%
Seattle-Bremerton	70%	46%	28%	58%	56%/ 68%	37%
North Puget Sound						
Mukilteo-Clinton	77%	46%	30%	66%	71%/ 74%	37%
Keystone- Pt. Townsend	86%	65%	28%	70%	73%/ 74%	41%
South Puget Sound						
Fauntleroy-Seattle	58%	35%	23%	53%	59%/ 61%	35%
Fauntleroy-Southworth	59%	44%	11%	56%	59%/ 2%	36%
San Juan Islands						
Anacortes-San Juan Islands	79%	57%	29%	58%	68%/ 70%	41%

First % is first terminal listed. 70% for San Juan Islands is percentage for Friday Harbor terminal.

Section Five

Performance Reports and 5+5+5 Plan

In 1999 WSF published a *1999 Progress Report* covering FY 1998-99, and in 2003 published *Maximizing our Resources to Build for the Future: Capitalizing on Change, Washington State Ferries Progress*, covering FY 2001-03. WSF has regular reports in WSDOT's *Measures, Markers and Milestones: The Gray Notebook* quarterly performance report. The progress reports and quarterly Gray Notebook reports are summarized in Appendix D.

The 1999 Progress Report discussed the completion of the 1999-2018 long-range plan and the 1999 origin and destination study, and indicated that WSF had developed a methodology for a stated-preference survey. This survey, which was not done, would ask riders how much they were willing to pay for new services and if they would shift from auto ferries to passenger-only ferries.

The 2001-03 Progress Report dealt primarily with WSF's adaptation to the loss of MVET funding. The report laid out four strategic goals: (1) continually improve and refine business operations; (2) broaden the revenue base and reduce costs; (3) promote and assist in planning regional transportation centers; and (4) redefine who we are.

To meet these strategic goals, WSF developed a 5+5+5 business plan for the operating budget. WSF intended to reduce costs by 5 percent, cap fare increases at 5 percent, and generate new revenues of 5 percent through a comprehensive retail, marketing and advertising program. The goal was to cover 90 percent of operating costs with revenues by 2008.

The capital funding plan that complemented the 5+5+5 plan was based on the premise that service reductions and vessel retirements would reduce funding needed for preservation work. Less preservation work would result in additional funding for capital improvements. Phase one of the capital plan for 2003-05 was to include service reductions and stopping passenger-only ferry service. A Phase two plan from 2005-2013 included retiring four older vessels and purchasing four new ones, upgrading the Keystone terminal, discontinuing service to Sidney for twelve weeks during winter season, eliminating the third vessel on the weekend service on the Fauntleroy-Vashon-Southworth route, and studying alternative sites for the Eagle Harbor repair facility.

The 1999 and 2003 reports both provided information on WSF's customer service initiatives, ridership, trip completion, farebox recovery, human resources and operating, capital, maintenance, and preservation expenditures. The 2003 report discussed ferry safety and security, including the completion of a Federal Transportation Administration security vulnerability assessment and the award of a federal security grant. The 1999 report also reviewed WSF's life safety and security programs, including creation of an automated operations support system to meet federal requirements, and WSF's environmental stewardship efforts.

The quarterly Gray Notebook reports include information on:

- Customer satisfaction: measured as number of complaints
- Ridership: reported quarterly against the budget plan
- Trip completion: trip reliability index report (i.e., number of cancellations per thousand sailings)
- On-time performance: measured by the percentage of trips that sail within ten minutes of schedule
- Capital expenditures: reported against budget
- Operating revenues: reported against budget forecast
- Terminals and vessels: percentage of vital and non-vital systems operating within life cycle

Appendix A: Compendium of Plans

Washington State Ferries (WSF) Portion of the Washington State Transportation Plan

- **Washington State Ferries Systems Plan 1999-2018, Final June 1999** (KJS Associates, Inc., Berk & Associates, Inc., LRS & Associates, Pacific Rim Resources, Reid Middleton, Inc.)
- **Washington State Ferries Draft Long-Range Strategic Plan 2006-2030 Strategic Service & Investment Plan, April 2006**

Passenger Only Ferries (POF) Studies

- **Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System, January 2005** (Ten) (Burke & Associates, Inc.)
- **Joint Transportation Committee Passenger-Only Ferry Task Force Report, January 2006** (Task)
- **Passenger-Only Ferry Cost Analysis, January 2006** (Parametrix)

Objectives- 2004/05 Legislature

- Long-range plan and supporting strategy to provide policy guidance to define and maximize efficient delivery of quality marine transportation services to the traveling public.
- The strategy should identify the most appropriate means of moving foot passengers across central Puget Sound using WSF vessels, alternative operators or a hybrid combination of both in the short and longer-term. Focus on Seattle-Vashon, Seattle-Southworth, Seattle-Kingston & Seattle-Clinton.
- A long-term plan for the existing terminals considering revenue-generating opportunities and potential partnerships with the private sector, including a plan for generating non-operating revenues.
- A more equitable fare structure for the San Juan Islands, especially for Island residents.
- 2005 Task Force: examine issues related to, but not limited to, the long-term viability of different providers, cost to ferry passengers, the state subsidies required by each provider, and the availability of federal funding for the different service providers.

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
Strategies/Factors to Consider	<ol style="list-style-type: none"> 1) Capacity: Increasing the capacity of the ferry system to carry passengers and vehicles to meet the adopted level of service standards. 2) Terminals: Completing improvements to terminals that are needed to accommodate new vessels and increased customer demand, and to improve intermodal connections. 3) South Sound Routes: Improving the route structure to provide more efficient and direct services, especially in the south Sound (Fauntleroy Vashon Southworth) and in the San Juan Islands. 4) Inter-modal Connections: Improving integration of WSF 	<ol style="list-style-type: none"> 1) Capacity: Meet projected customer demand consistent with Washington State Transportation Commission adopted level of service standards. 2) Prices: Charge prices that are reasonable & equitable as required by RCW 47.60.326. 3) Environment: Act responsibly with regard to the natural environment. 4) Finances: Plan within financial constraints, particularly 80% farebox recovery rate determined by the Legislative Joint Task Force on Ferries in 2001. 	Four guiding principles <ol style="list-style-type: none"> 1) Cost-effectiveness: Cost-effectively utilize WSF's existing assets and passenger carrying capacity, including passenger-vehicle vessels and terminals. 2) Inter-Modal Connections: Leverage the region's multimodal transportation infrastructure and investments. 3) Efficiency: Help mitigate bottlenecks and chokepoints in WSF's system, to increase overall network efficiency.

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
	<p>and local transportation facilities and services, especially public transit connections.</p> <p>5) Traffic Demand Management: Increasing the modal share for walk-on passengers and carpools/vanpools and decreasing the modal share for single occupant vehicles.</p> <p>6) Finances: Tying ferry system improvements to a realistic financial plan. (p 32-33)</p>	<p>5) Local Governments: Respect the land use and growth management plans of local governments, while staying mindful of its primary mission and role as state agency.</p> <p>6) Inter-Modal Connections: Plan facility improvements and service to facilitate connections with other modes of transportation.</p> <p>7) Public: Consult with the public as plans are developed and on policy changes. (p 6-8)</p> <p>Policy Issues</p> <p>1) Funding framework assumes fare levels will remain close to today's as adjusted for inflation, i.e., annual increase of 2.5%. (p 51)</p> <p>2) Key question is whether 80% farebox recovery should be the target or a <i>minimum</i> target. (p 62)</p> <p>a) To reach 80% farebox recovery, WSF would need the planned fare increases through 2008, but could hold fares flat for 2009-21, since ridership is projected to increase. (p 63)</p> <p>b) Since ridership is sensitive to fares, holding rates flat would increase ridership. (p 63)</p> <p>c) This increased ridership would result in more crowding on all routes. (p. 64)</p> <p>d) To meet this increased demand would call for capital investments in larger vessels, double-decker vessels and loading, and larger holding areas. (p. 64)</p> <p>e) 80% farebox recovery would eliminate excess operating subsidies, requiring additional tax subsidy for both capital and operating costs. (p. 64)</p> <p>3) Plan represents the maximum service possible with current terminals and vessels. By 2030, WSF will need to either accept lower service levels or make capital investments to expand service. (p. 66)</p> <p>4) Change in Fauntleroy-Southworth-Vashon service adds pressure for redevelopment of Colman Dock and holding areas. (p. 67)</p>	<p>4) Finances: Be operationally and financially sustainable, to enable ferry riders and communities to make long-term employment and location decisions. (Ten p 51)</p> <p>Recommended Goals</p> <p>1) Importance: POF service is an important component of the transportation infrastructure & should be promoted where appropriate.</p> <p>2) Coordinated: Planning for POF service should be coordinated with regional, state & local priorities, carriers, routes, related links and fare policies.</p> <p>3) Subsidy: When POF helps achieve public transportation objectives, reasonable levels of subsidy to fund it should be considered.</p> <p>4) Priorities: Immediate and long-term</p> <p>5) Immediate Priorities: Immediate priorities should receive reasonable levels of state and/or local assistance.</p> <p>6) Immediate Priorities Criteria: POF service currently exists; there is no practical alternative; financial stability, infrastructure exists or is planned & funded; adds cost effective value to the regional transportation system; integrated with local planning & land use requirements.</p> <p>7) Immediate Priorities: POF service between Seattle and Bremerton, Kingston, Southworth & Vashon.</p>

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
		<p>5) Seattle-Bainbridge plans will work only if privately-run Seattle-Kingston POF service draws away enough traffic. Policies might be needed to ensure the private POF provides this service level. (p 67)</p> <p>6) Issues of moving people vs. moving vehicles come to play around congestion standards and fare policies. (p 68)</p>	
Level of Service	<p>Central Sound/North Sound/South Sound Service Areas</p> <ul style="list-style-type: none"> • Defined - Westbound PM Weekday Peak 3 PM-7PM boat-waits • Pedestrians – no wait • Vehicles – 1 boat-wait, except Bainbridge 2 boat-wait <p>San Juan Service Area</p> <ul style="list-style-type: none"> • Defined - % of monthly sailings where demand exceeds capacity • Peak – 25% -<40% • Off-peak – 15%-<25% (p 5) 	<p>Central Sound/North Sound/South Sound Service Areas</p> <ul style="list-style-type: none"> • Defined - Westbound PM Weekday Peak 3 PM-7PM boat-waits • Pedestrians – no wait (measured by most congested sailing) (p 21) • Vehicles – 1 boat-wait, except Bainbridge & Mukilteo 2 boat-wait (measured by average during peak) (p 21) • Translated into wait times (p 7) <p>San Juan Service Area</p> <ul style="list-style-type: none"> • Daily and seasonal capacities are tracked • Service growth to meet traffic growth (p 7) 	
System-wide Ridership Projection/ Capacity	<p>Basis</p> <ul style="list-style-type: none"> • Puget Sound Regional Council Projection • 1993 Origin & Destination Study 	<p>Basis</p> <p>Central Puget Sound & South Puget Sound Corridors</p> <ul style="list-style-type: none"> • 1999 Origin & Destination Study • Puget Sound Regional Council model projects the growth rates for cross-sound commute period trips • WSF transportation model estimates route choice & mode of access for each trip. (p ii) • Uses historic ridership data on the relationship between commute-period ridership to project annual ridership. (p iii) • Use afternoon peak for service planning (p 13) 	<p>Basis</p> <ul style="list-style-type: none"> • POF service plays a small but targeted role in providing passenger service (Ten p. C-6) • 2004: 5.7 million walk-on riders in Puget Sound corridors of which 3.4% on the Seattle-Vashon POF (Ten p 15)

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
	<p>Growth 70% growth in riders (p 3)</p> <p>Capacity Increases if Plan Implemented Vehicles – 55% Passenger – 57% (p 33)</p> <p>Mode Change <ul style="list-style-type: none"> 55% walk-on from 41% during peak period (p 37) ...the future system must rely on more people walking on, rather than driving on to meet level-of-service standards (p. 13)</p>	<p>North Puget Sound and San Juan Islands Corridors <ul style="list-style-type: none"> Office of Financial Management population projections through 2025 (p 11) Use afternoon peak for service planning in North Puget Sound (p 13) Use daily ridership in San Juan Islands Corridor (p 13) <p>Growth 70% growth in riders with current service (p 15) 88% growth in riders with projected service (p 42, Three principal factors affect ridership demand: 1) Demographic growth –particularly Kitsap County with 75% of peak afternoon commutes to expanded Tacoma Narrows Bridge & 25% to ferries 2) Financial – Ferry fares are planned to continue to increase annually, however the rate will be capped at 2.5% in line with inflation. As fares stabilize, growth will return to pre-I-695 levels. 3) Service related growth – As service improves, demand increases. (p 14)</p> <p>Capacity Increases if Plan Implemented Service hours – 40%</p> <p>Mode Change <ul style="list-style-type: none"> 62% walk-on from 44% in 2003 during peak periods (p 14) 39% of total walk on from 27% in 2003 (p 42) ...will make WSF perhaps the most effective people-</p> </p>	<p>Growth 35% Puget Sound routes 2003-2015 during the westbound peak (3:00 -7:00) (Ten, p 18)</p> <p>Capacity Central Sound <ul style="list-style-type: none"> There is expected to be significant passenger-carrying capacity available on the passenger-vehicle ferries through the ten-year study period (2005-2015) (Ten p 16) All routes except POF Vashon & Bainbridge remain at less than 60% utilization during the peak 4-hour period westbound commute. POF Vashon at 118% utilization in 2015/Bainbridge at 73% (Ten p 19-20) <p>Mode Change <ul style="list-style-type: none"> Of total Puget Sound growth, 74% from walk-on segment due primarily to the constraints on vehicle capacity – a greater share of future trips will be made using the interconnected </p> </p>

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
		moving element of the state highway system. (p 14)	multimodal system. (Ten p. 33)
Central Sound Corridor Edmonds-Kingston Seattle-Bainbridge Seattle-Bremerton	Ridership Current <ul style="list-style-type: none"> • % of system- 54% • 38% walk-on (p 42) Ridership Projected <ul style="list-style-type: none"> • 136% increase (p 10) Issues <ol style="list-style-type: none"> 1) Balance the attractiveness of the three routes to get better trip distribution. 2) Meeting total passenger demand vs. meeting projected vehicle demand for vehicles on the ferries. 3) Increasing the proportion of travelers who walk on the ferries and reducing the proportion who drive on. Plan designed to: <ol style="list-style-type: none"> 1) Accommodate doubling of demand. 2) Distribute demand by improving Bremerton service. 3) Reduce % of passengers who drive on-board. 4) Provide quicker service for commuters. (p. 44) 	Ridership Current (2003) <ul style="list-style-type: none"> • % of system- 56% • 40% walk-on (p 42) Ridership Projected <ul style="list-style-type: none"> • 82% increase (p 42) • Impact of private passenger only service on Bremerton route not known and could impact need and service. (p 35) Issues <ol style="list-style-type: none"> 1) Growth in vehicle demand in Kingston, Bremerton & Bainbridge Island routes. (p 34) 2) Growth in passenger demand on the Bainbridge route. (p 34) 3) Maintain manageable levels of vehicle traffic at Colman Dock and on SR-305 on Bainbridge Island. (p 33 Options Analysis) Plan designed to: <ol style="list-style-type: none"> 1) Expand capacity of existing Mark II vessels to increase passenger capacity for Bainbridge runs. 2) Distribute demand by improving Bremerton & Kingston service. Add third vessel to Bremerton and fourth vessel to Kingston, & assume private passenger-only ferry on Kingston route. 	Peak Ridership Current (2003) <ul style="list-style-type: none"> • % of Puget Sound ridership –62% • 12.1 million riders (Ten, p 18) Peak Ridership Projected <ul style="list-style-type: none"> • 35% increase (Ten, p 18) • Diversion impact of Seattle-Bremerton POF service -14.5% annual ridership (Parametrix, p 3-4) • Diversion impact of Seattle-Kingston POV service -1.87% on Bainbridge-Seattle & Kingston-Edmonds passenger-vehicle ferries (Parametrix, p 3-4) Issues <ol style="list-style-type: none"> 1) Kitsap Transit plans to provide POF service from Bremerton to Pier 66 & 48 which could include up to five 149-passenger vessels operating at 15-minute headways. (Ten p 46) 2) Eighty-three percent of ridership on this route will come from existing & future WSF riders. The ridership diversion is significant given the available capacity on WSF's passenger-vehicle routes. In 2015 – 57% on Seattle-Bremerton capacity/73% on Seattle-Bainbridge. (Ten p 46)

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
	<p>Edmonds-Kingston</p> <ul style="list-style-type: none"> • Service every 30 minutes • 3 vessels: 206 car, 160 car, 218 car • Edmonds – new terminal • Kingston – additional POF slip <p>Seattle – Bainbridge</p> <ul style="list-style-type: none"> • Service every 35 minutes • 2 vessels: 218 car, 160 car • Bainbridge – reconfigure & improve terminal. • Seattle – expand existing terminal/add auto-passenger slips. <p>Seattle-Bremerton</p> <ul style="list-style-type: none"> • POF service every 45 minutes/auto-passenger every 60 minutes. • 2 vessels: 218 car, 160 car • Bremerton: reconfigure & improve terminal. • Seattle – expand existing terminal/add POF & auto-passenger slips. (p 44) 	<p>Edmonds-Kingston</p> <ul style="list-style-type: none"> • Service n/a • 4 vessels: 144 cars (p 36) • Assume private passenger only ferry Kingston Seattle (p 36) • Edmonds – new terminal, two additional slips, overhead pedestrian loading complete by 2017 (p 49) <p>Seattle – Bainbridge</p> <ul style="list-style-type: none"> • Service every 35 minutes • 2 vessels: with increased seating capacity (p 36) • Bainbridge-expand terminal not because of new service but to accommodate growth. (p 50) • Seattle – Remodel & add fourth slip by 2014. (p 50) <p>Seattle-Bremerton</p> <ul style="list-style-type: none"> • Service every 50 minutes • 3 vessels: 144 car and 2 with 188-202 cars 	<p>Edmonds-Kingston</p> <ul style="list-style-type: none"> • Operates at 22% of passenger capacity during peak PM in 2003/27% in 2015. (Ten p 19) • WSF should not support private POF service given the ridership diversion from WSF's existing passenger-vehicle routes, the substantial passenger capacity available on these routes, & the regional investments in multimodal transportation linkages between Edmonds & downtown Seattle. (Ten p 34) • State's interest to renew POF service between Kingston & Seattle <ul style="list-style-type: none"> • POF service existed • Infrastructure exists • Part of Kitsap County's land use & transportation planning • Part of Kingston's goals • Relieve pressure on state to provide service (Task p 8-9) <p>Seattle-Bainbridge</p> <ul style="list-style-type: none"> • Edmonds-Kingston POF would relieve pressure on Bainbridge Island peak. (Task p 9/ Parametrix p 3-4) • Operates at 53% of passenger capacity during peak PM in 2003/73% in 2015. (Ten p 19) <p>Seattle-Bremerton</p> <ul style="list-style-type: none"> • Operates at 61% of passenger capacity during peak PM in 2003/57% in 2015. (Ten p 19) • Kitsap Transit plans to provide POF service from Bremerton to Piers 66 & 48, which could include up to five 149-passenger vessels operating at 15-minute headways. (Ten p 46) • Primary state interest in POF service between Seattle & Bremerton. • POF service exists

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
			<ul style="list-style-type: none"> • Service complements WSF service • Infrastructure exists • POF service part of Kitsap County's and Kitsap Transit plans • Helps achieve City of Bremerton & City of Seattle goals. (Task, p 9)
North Sound Mukilteo-Clinton Port Townsend-Keystone	Ridership Current <ul style="list-style-type: none"> • % of system - 21% with 85% of corridor ridership on Mukilteo-Clinton route • 12% walk on/afternoon peak 23% (p 46) Ridership Projection <ul style="list-style-type: none"> • 43% increase in ridership (p 10) Issues <ol style="list-style-type: none"> 1) Meeting increased demand on Mukilteo-Clinton route 2) Develop vessel technology to meet navigational issues on the Port Townsend-Keystone route. (p.46) Plan designed to: <ol style="list-style-type: none"> 1) Address capacity issues on the Mukilteo-Clinton route 2) Address operational & regulatory issues on the Port Townsend-Keystone route. Mukilteo-Clinton <ul style="list-style-type: none"> • Service every 20 minutes • 3 vessels: 130 cars • Mukilteo- New terminal • Clinton – Expansion & improvement to existing terminal. Port Townsend-Keystone <ul style="list-style-type: none"> • Service every 45 minutes • 2 vessels: 110 cars • Port Townsend terminal - No change • Keystone terminal – No change (p 48) 	Ridership 2003 <ul style="list-style-type: none"> • % of system - 20% with 84% of corridor ridership on Mukilteo-Clinton route • 12% walk –on (p 42) Ridership Projection <ul style="list-style-type: none"> • 62% increase in ridership Issues <ol style="list-style-type: none"> 1) Meeting vehicle demand on the routes 2) Tentative plan pending completion of Keystone Harbor Study. (p 37) 3) Keep vessel & terminal costs as low as possible. (p 39 Options Analysis) Plan designed to: <ol style="list-style-type: none"> 1) Increase vehicle carrying capacity 2) Review service options when Keystone Harbor Study complete (p 37) Mukilteo-Clinton <ul style="list-style-type: none"> • Service n/a • 3 vessels: 2- 144 cars and 1- 124 cars • Mukilteo – Relocate with new terminal connected to Sounder station and bus transit center – complete 2010. (p 49) • Clinton – Third slip & overhead loading by 2015. Port Townsend-Keystone <ul style="list-style-type: none"> • Study underway • Plan assumes major harbor reconstruction & widening to allow use of larger vessels with 124-144 vehicle capacity. (p 38) 	Peak Ridership Current (2003) (Mukilteo-Clinton) <ul style="list-style-type: none"> • % of Puget Sound ridership –18% • 3.5 million riders (Ten, p 18) Peak Ridership Projected <ul style="list-style-type: none"> • 29% increase (Ten, p 18) Issues <ol style="list-style-type: none"> 1) Difficult to provide POF service given the relatively low demand and length of the route. (Ten p 32) 2) Clinton corridor has ample capacity to serve passenger demand – 2015 Mukilteo-Clinton will operate at 47% of capacity during the 4-hour P.M. peak. (Ten p 32) Mukilteo-Clinton <ul style="list-style-type: none"> • No POF service (Ten p 32) • Operates at 36% of passenger capacity during peak hours in 2003/47% in 2015. (Ten p 19)

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
South Sound Corridor Seattle-Vashon POF Fauntleroy-Vashon-Southworth Point Defiance-Tahlequah	Ridership Current <ul style="list-style-type: none"> • % of system - 18% • 13% walk on/afternoon peak 33% (p 38) Ridership Projection <ul style="list-style-type: none"> • 68% increase (p 10) Issues <ol style="list-style-type: none"> 1) Constraints on any expansion at Fauntleroy terminal to meet projected demand. 2) Operational inefficiencies and problems associated with the triangle route. 3) Demand for direct service to Seattle from south corridor terminals. (p.40) Plan designed to: <ol style="list-style-type: none"> 1) Accommodate increased total and demand for more direct connections. 2) Divert traffic increases away from Fauntleroy terminal which is currently operating at capacity. 3) Increase the proportion of passengers who walk-on & reduce the proportion that drive-on. 4) Split triangle route into three routes to provide direct 	Ridership Current <ul style="list-style-type: none"> • % of system -16% • 19% walk on (p 42) Ridership Projection <ul style="list-style-type: none"> • 113% increase (p 42) Issues <ol style="list-style-type: none"> 1) Fauntleroy terminal bottleneck primary challenge. (p 31) 2) Create a route structure that is convenient for the greatest number of riders. (p 19 – Options Analysis) 3) Cost-effectiveness of solving Fauntleroy capacity issue. (p 19 Operations Analysis) Plan designed to: <ol style="list-style-type: none"> 1) Divert traffic away from Fauntleroy (p 31) 2) Break-up triangle route and re-direct Southworth route & create three routes Fauntleroy & Vashon, Southworth & Vashon and Southworth & Seattle (p 31) 	Peak Ridership Current (2003) <ul style="list-style-type: none"> • % of Puget Sound ridership –20% • 4 million riders (Ten, p 18) Peak Ridership Projected <ul style="list-style-type: none"> • 43% increase (Ten, p 18) • POF diversion impact of Seattle-Bremerton POF service -14.5% annual ridership (Parametrix, p 3-4) Issues <ol style="list-style-type: none"> 1) Kitsap Transit plans to provide POF service from Bremerton to Piers 66 & 48, which could include up to five 149-passenger vessels operating at 15-minute headways. (Ten p 46) 2) Eighty-three percent of ridership on this route will come from existing & future WSF riders. The ridership diversion is significant given the available capacity on WSF's passenger-vehicle routes. In 2015 – 56% on Fauntleroy-Southworth. (Ten p 46) 3) If Seattle-South Kitsap POF service is implemented by a public-private provider, WSF's South POF Triangle route would not be feasible. Choices for WSF then: <ul style="list-style-type: none"> •Continue service after investing in smaller vessels. •Leave the POF service, limited WSF service to the Vashon market to the Fauntleroy-Vashon passenger-vehicle route. • Allow the Vashon market to be served by a new public sector operator, such as King County. (Ten p 47)

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
	<p>service between Southworth & Vashon, Fauntleroy & Vashon, and Fauntleroy & Southworth.</p> <p>5) Increase capacity of POF between Seattle & Vashon. (p 40)</p> <p>Fauntleroy-Vashon-Southworth</p> <ul style="list-style-type: none"> • No triangular service. • Southworth: Additional POF slip <p>Fauntleroy –Southworth</p> <ul style="list-style-type: none"> • Service every 60 minutes • 1 vessel – 130 cars <p>Seattle/Vashon</p> <ul style="list-style-type: none"> • POF service every 60 minutes • 1 vessel – 350 passengers <p>Fauntleroy-Vashon</p> <ul style="list-style-type: none"> • Service every 30 minutes • 2 vessels – 110/130 cars 	<p>Fauntleroy-Vashon-Southworth</p> <ul style="list-style-type: none"> • No triangular service after 2014. (p 32) <p>Southworth-Seattle</p> <ul style="list-style-type: none"> • Service every 50 minutes • 2 vessels – 144 car, 2,000 passenger (p 33) • New Colman Dock terminal (p 24) • Southworth – add second slip by 2010 (p 50) <p>Seattle-Vashon</p> <ul style="list-style-type: none"> • Non-WSF operation (p 32) <p>Fauntleroy-Vashon</p> <ul style="list-style-type: none"> • Service every 30 minutes • 2 vessels – 124 cars (p 32) 	<p>Fauntleroy-Vashon-Southworth</p> <ul style="list-style-type: none"> • Develop South Sound POF triangle route to serve existing Vashon & Southworth markets evolving toward a Seattle-Southworth passenger-vehicle ferry service. (Ten, p 51) <p>Southworth-Seattle</p> <p>State interest in POF service between Southworth & Seattle:</p> <ul style="list-style-type: none"> • Community does not currently have POF service – must transfer on Vashon. • A growing % of Vashon POF ferry commuters are from Southworth. • Infrastructure exists. (Task p 8) <p>Seattle-Vashon</p> <p>State interest in Seattle-Vashon POF service:</p> <ul style="list-style-type: none"> • Service for last 15 years. • Vashon has no bridges – ferries only alternative. • Constraints on passenger-vehicle service between Vashon & downtown Seattle due to Fauntleroy dock. • Infrastructure exists. • Helps achieve City of Seattle traffic congestion goals. (Task, p 8) • POF service operates at 59% of passenger capacity during PM peak in 2003/118% in 2015 (Ten, p 19) <p>Fauntleroy-Vashon</p> <ul style="list-style-type: none"> • Operates at 33% of passenger capacity during PM peak in 2003/39% in 2015. (Ten, p 19)

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
	<p>Anacortes - Orcas - Shaw</p> <ul style="list-style-type: none"> • Service every 180 minutes. • 1 vessel : 160 car • Anacortes – Expand multi-modal terminal. <p>Anacortes – Orcas & Friday Harbor</p> <ul style="list-style-type: none"> • Service every 120 minutes • 1 vessel: 160 car • Anacortes – Expand multi-modal terminal. • Friday Harbor – Minor improvements to improve loading capacity 2 lanes & pedestrian improvements. <p>Anacortes –Friday Harbor</p> <ul style="list-style-type: none"> • Service every 120 minutes • 1 vessel: 160 car • Anacortes – Expand multi-modal terminal. • Friday Harbor – Minor improvements to improve loading capacity 2 lanes & pedestrian improvements. <p>Interisland Ferry</p> <ul style="list-style-type: none"> • Service every 120 minutes • 1 vessel: 100 car <p>Anacortes –Sidney by 2015</p> <ul style="list-style-type: none"> • Non-WSF carrier (p 50) 	<p>Interisland Ferry</p> <ul style="list-style-type: none"> • 1 vessel – 90 cars (p 40) <p>Anacortes –Sidney by 2015</p> <ul style="list-style-type: none"> • One daily trip • 1 vessel-124 car possibly different (p 40) • Anacortes – Expanded multi-modal terminal to be complete 2015/third slip 2011/tie-up slips re-located. 	
Union Agreements			<ul style="list-style-type: none"> • The peak nature of POF demand is a defining feature of the service, and a critical issue to address in designing a cost-effective and sustainable operating plan. (Ten p 27) • The ability to match service provision to morning and afternoon peaks affected by WSF's ability to work with its labor unions to implement split shifts. WSF has traditionally been tied to continuous 8-hour shifts. Given morning & evening demand, it is necessary to

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
			<p>employ two of these 8-hour blocks, resulting in 16 hours of service. Because demand is low during the mid-day, the result is inefficient service with low vessel utilization and relatively low cost-recovery. (Ten p 29)</p> <ul style="list-style-type: none"> • WSF now has very few part-time employees – about 10 on the vessel side and 35 on the terminal side-and no split shifts. Split shifts are widely used by transit agencies to efficiently match hours of crew service with peak travel demand periods. In Western Washington split shifts are the rule among transit providers. (Ten p 31) • To provide POF service that is financially feasible, WSF & labor will need to agree on a flexible approach to crewing the service. WSF's interest should be to realize the most cost-effective approach to manning the vessels that is still within the requirements set by the Coast Guard. (Ten p 31) • On call practice needs to change, from relief crews guaranteed a minimum of 8 hours pay for call-outs, to work for/work paid practice. (Ten, p 31)
Terminal Revenues			<ul style="list-style-type: none"> • Terminal concession plan – five RFPs issued before responses received. (Ten p F-1) • Colman Dock – project \$538,000 in FY 2006/ WSF contributed \$50 per sq. ft. to develop. • Anacortes – Café fees projected \$47,000 in FY 2006. • Bainbridge – Concessions projected \$58,000 in 2006 (if moved inside). • Clinton – Concessions projected \$10,000 FY 2006. • Edmonds – marginal revenue. • Southworth – Projected \$15,000 FY 2006. • Sidney – summer 2004 concessions \$16,000.

Area	WSF Systems Plan 1999-2018 (Final June 1999)	WSF Draft Long Range Strategic Plan 2006-2030	Passenger-Only Studies
San Juan Fare			<ul style="list-style-type: none"> • Tariff Policy Committee recommended that WSF maintain the current fare structure in the San Juan Islands because the fares are consistent with overall system priorities and have been refined to reflect the unique nature of the San Juan Islands travel corridor. (Appendix p 1) • Tariff Policy Committee has agreed to review the spread between regular fares and frequent user fares in 2005. (Appendix p 2) • Policy basis for WSF fares <ul style="list-style-type: none"> • CUBE – Amount of space occupied by a vehicle on a vessel. (Appendix p 2) • Tariff Route Equity – tariffs related to time on ferry with all routes defined by their relationship to Bainbridge Island. • Relationship of vehicle & passenger fares: 3.5:1 ratio on all routes except San Juan Islands. • Fares set for Seattle-Bainbridge car vehicle driver and then adjusted. • Implementation of Tariff Route Equity scheduled from 2000-2009. • San Juan specific policies <ul style="list-style-type: none"> • Reflect difference from other routes in customer base (few commuters). • Fares in San Juans have different discounts than others/unique time of week discounts etc.

Appendix C: Compendium of Studies

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Office of Financial Management: Performance Audit of the Washington State Ferry System Capital Program 2001 (Talbot, Korvola & Warwick)	14
Report of the Legislature's Joint Task Force on Ferries, January 15, 2001	15



Report on the Management of Vessel Refurbishment Programs, Legislative Transportation Committee, 1991

Booz Allen & Hamilton Inc. and M. Rosenblatt & Son, Inc.

Objectives:

- 1) Evaluate the ferry vessel refurbishment process & procedures, particularly those related to vessel inspection, engineering, cost estimating, construction management, change order management & budget procedures.
- 2) Compare the process used with other marine operators.
- 3) Make recommendations (p. I-1)
 - Impetus for the study: cost overruns in vessel refurbishment program (p. IV-2)
 - Legislative Transportation Committee wanted to know:
 - The role & impact of the budget process on the refurbishment programs.
 - The shortcomings, if any, of the budgeting process that may affect cost management of the vessel refurbishment program.
 - What improvements, if any, are required. (p. VI-1)

Reviews of Audit:

- 1) Recommendations in this audit were reviewed in 1998 Booz Allen & Hamilton JLARC Audit
- 2) WSF: 2006 Status Report on the Recommendations Contained in the 1998 JLARC Audit of the WSF

Area	Key Findings	Recommendations	Status/Questions
Organization Development	<ul style="list-style-type: none"> The WSF refurbishment program has prevented capacity erosion and maintained service at a savings of at least \$12 million. (p. III-7) Need to refurbish aging vessels transformed WSF from an operations-oriented entity to a more capital and construction intensive organization. (p. III-8) 	1) Re-organize by <ul style="list-style-type: none"> reducing the organization layers between the Assistant Secretary and those directly responsible for engineering design and construction management 	1) Implemented: (1998 Audit Appendix D) Changes reflected in 2006 organization chart.

Area	Key Findings	Recommendations	Status/Questions
	<ul style="list-style-type: none"> Better work definition for refurbishment specifications developed in-house has contributed to reductions in actual growth of refurbishment project budgets. (p. VII-9) 	<ul style="list-style-type: none"> creating a senior-level position solely responsible for new construction & refurbishment programs reporting directly to the Assistant Secretary unified vessel operations & maintenance under a single executive terminal design and operations separate from vessel operations and maintenance, & combined at equivalent senior level. (p. VIII-2) <p>2) The Assistant Secretary and Operations Superintendent job descriptions: require previous shipyard and/or vessel maintenance management experience. (p. VIII-4)</p> <p>3) Continue in-house design engineering capacity: with continuing use of outside design consultants as required. (p. VIII-5)</p> <p>4) Assign ships to “single owner” port engineer and create a program manger position for ships under construction or refurbishment. (p. VIII-6)</p>	<p>2) Not implemented/not needed: Job descriptions for Executive Director and Director of Operations appropriately emphasize strategic capacity. Shipyard & vessel maintenance experience at Director of Vessel Engineering level. (Job descriptions)</p> <p>3) Implemented (1998 Audit Appendix D)</p> <p>4) Implemented (1998 Audit Appendix D)</p>
Policy	<ul style="list-style-type: none"> Decline in region’s shipbuilding & repair industry’s ability to provide service – leaving WSF vulnerable to higher-than-normal ship refurbishment costs for large vessel drydocking. (p. III-9) One shipyard available to drydock largest boats – Todd Shipyard. (p. III-10-11) Fourteen shipyards for non-drydock work. (p. III-11) 	<p>5) WSDOT and the legislature should support a policy of renewed shipyard competition & additional shipyard capacity in the region: including facilitating pre-qualification of shipyards with drydocks capable of handling fleet and to support out-of-state shipyards. (p. VIII-7)</p>	<p>5) Implemented (1998 Audit Appendix D)</p>

Area	Key Findings	Recommendations	Status/Questions
Pre-Planning Phase	<ul style="list-style-type: none"> • Five case studies represented 95% of the WSF ferry refurbishment expenditures from 1985-1990. • WSF received value for 81% of the expenditures (78% in original contract/22% growth items that added value). (p. IV-16) • WSF received no value for 19% of the expenditures (42% for growth items where premiums are paid and 58% for delay & disruption penalty charges). (p. IV-16) • The 19% premium results primarily from inadequate planning, inspection, specification & contract development and poor construction and change management procedures. (p. IV-16) • Forty-one percent of growth came from problems during the planning phase, indicating inadequate planning and control processes that result in subsequent changes and cost increases. (p. IV 8-10) • Lack of inspection procedures resulted in "hidden surprises" during refurbishment causing increases in the scope of work. (p. IV-11) 	<p>6) Formalize refurbishment decision process, including:</p> <ul style="list-style-type: none"> ○ justification ○ utilization of maintenance history ○ collection of inputs for conceptual design ○ development of conceptual design ○ development of program estimate ○ impact of changes on program estimate ○ justification for slipping schedule ○ impact of schedule slippage on program estimate ○ translation of program estimate to program budget. (p. VIII-9) <p>7) Establish a steel maintenance program to include:</p> <ul style="list-style-type: none"> ○ scheduled inspections & condition monitoring ○ condition reports on all steel by location using standard forms ○ trend analysis of the condition reports to refine the inspection schedule ○ non-destructive testing as a regularly scheduled part of the condition monitoring ○ evaluation of reports and records to determine <ul style="list-style-type: none"> ▪ most effective coatings ▪ schedules of routine maintenance ▪ work scope identification for refurbishment ○ evaluation of benefits/costs of classifying all vessels under American Bureau of Shipping rules to assist with the steel maintenance program. 	<p>6) Implemented (1998 Audit Appendix D) Note: refurbishment now preservation program.</p> <p>7) Implemented (see # 14 1998 Audit) Steel maintenance program formalized & single-compartment ferries surveyed. (WSF June 06 p. 19)</p>

Area	Key Findings	Recommendations	Status/Questions
		<p>8) Establish formal pre-refurbishment inspection to include:</p> <ul style="list-style-type: none"> o Coordination with vessel operating, maintenance and routine drydocking schedules, even if done in phases rather than at once. o Identification of areas of concern through: <ul style="list-style-type: none"> ▪ Review of vessel maintenance history. ▪ Interviews with operations personnel. ▪ Review of change order data from previous refurbishment. o Complete inspection of all systems and spaces recorded on standard forms developed for each type of system and space. o Identification of location and quantity of any item that was hidden or inaccessible. o Standardized approach to non-destructive testing for steel deterioration. (p. VIII-11) 	<p>8) Partially implemented: WSF does not remove vessels from service for stand alone inspections.</p> <ul style="list-style-type: none"> o Accomplished through life cycle cost model o Monthly vessel condition worksheets implemented o Destructive testing program part of the inspection process – e.g. remove deck tile etc. to inspect interior portions. (WSF Aug.06 response)
Specification Development	<ul style="list-style-type: none"> • Insufficiently detailed specifications allow shipyards too many loopholes to increase scope and price of work. (p. IV-12) 	<p>9) Standardize work scoping process to include:</p> <ul style="list-style-type: none"> o All data from the earlier concept design and strategic planning phases. o Vessel maintenance history, including steel maintenance. o Input from operations including maintenance, masters & deck officers and operating engineers. o Regulatory bodies' input. o Lessons learned from previous refurbishments. o Pre-refurbishment inspection report. o Ship checks. 	<p>9) Implemented: 2001-02 developed standardized work specification language. (WSF June 06 p. 21)</p>

Area	Key Findings	Recommendations	Status/Questions
		<ul style="list-style-type: none"> o Asbestos and toxic paint surveys. o Other sources as appropriate. (p. VIII-12) 10) Develop a procedure for estimating planned growth using data from: <ul style="list-style-type: none"> o Pre-Refurbishment Inspection o Ship Maintenance History o Change order data base for previous refurbishments (p. VIII 013) 11) Develop a standard structure for unit pricing as a basis for: <ul style="list-style-type: none"> o Identification of planned growth at the contract unit price bids. o Development of the engineer's estimate. o Change order estimating during construction. (p. VIII-14) 12) Specify bid lots for all planned growth to ensure that all planned growth that has been estimated is not identified in the specification, but has bid lots included for unit pricing in the contract. (p. VIII-15) 	<p>10) Implemented: Included in 2002 Vessel Engineering Manual. (WSF June 06 p. 22)</p> <p>11) Implemented: (1998 Audit Appendix D)</p> <p>12) Implemented (1998 Audit Appendix D)</p>
Contract Development	<ul style="list-style-type: none"> • Proper contract development is a critical tool for controlling growth. (p. IV-13) • Thirty percent of all cost growth included charges for delay & disruption, & provided no value to WSF. (p. IV-6) • At peer ferries' work scope & price are controlled with growth work covered by unit prices; shipyards required to estimate work within 2 weeks of change request, and if disputed, work must proceed on a time & material basis with a ceiling. (p. V-10) 	<p>13) Revise standard contract language on the use of unit prices to preclude "increased/decreased quantities" from negotiation.</p> <ul style="list-style-type: none"> o For increased work covered by bid lots (planned growth), require payment of unit prices at direction of project engineer. o Allow negotiation of planned growth only if it exceeds some reasonable limit above bid lot quantities. Specifying this limit places it in the control of Washington State Ferries, not the shipyard or claims court. 	<p>13) Implemented (1998 Audit Appendix D)</p>

Area	Key Findings	Recommendations	Status/Questions
		<p>14. Award planned growth along with base work package to:</p> <ul style="list-style-type: none"> o Increase control of the overall budget. o Enable better understanding of vessel out-of-service time. o Improve ability to schedule other assets. o Reduce the basis for shipyard claims for delay and disruption. (p. VIII-17) <p>15) Require the shipyard to provide additional management tools to supplement existing shipyard master construction schedule and progress breakdown reports with:</p> <ul style="list-style-type: none"> o Planned progress curve – to track progress to plan and evaluate responsibility for delay and disruption. o Critical path method network – to maintain schedule and analyze the cause of delay and disruption. o Inspection plan – to ensure that growth work is identified earlier in the construction period. (p. VIII-18) 	<p>14) Implemented (1998 Audit Appendix D)</p> <p>15) Implemented (1998 Audit Appendix D)</p>
Construction Management	<ul style="list-style-type: none"> • Current construction management practices and procedures allowed shipyards too much leeway in determining the size, scope & price of changes. (p. IV-14) • The procedure currently in use for change orders results in loss of negotiating leverage & effective control of the shipyard work. (p. IV-15) • The cost per change order at WSF is between 3 and 4 times that of other ferry systems. (p. V-II) • Some other ferry systems have independent engineering auditors. (p. V-11) 	<p>16) Improve change order management procedures to include:</p> <ul style="list-style-type: none"> o Negotiate unplanned growth with shipyard to provide the following: <ul style="list-style-type: none"> ▪ Impact on schedule, testing, and other work. ▪ A price that would include all delay and disruption. o Allow no work without negotiated fixed price. o For work that must proceed immediately, authorize work not to exceed tight time and cost limits. o Include these procedures in standard 	<p>16) Implemented (1998 Audit Appendix D)</p>

Area	Key Findings	Recommendations	Status/Questions
		<p>contract language. (p. VIII-19)</p> <p>17) Modify change order approval authority by:</p> <ul style="list-style-type: none"> o Reducing change authority. o Establishing cumulative limits in change, which should be enforced at a higher level in the organization than the manager of construction management. o Disallowing grouping of unrelated changes into omnibus change orders. (p. VIII-20) <p>18) Establish an audit function within WSF by establishing one or more audit functions for construction & cost management reporting directly to the Engineering Superintendent or even the Assistant Secretary. (p. VIII-21)</p> <p>19) Formalize the asbestos abatement program including:</p> <ul style="list-style-type: none"> o Conducting fleet-wide survey to locate remaining asbestos. o Planning removal of asbestos as part of scheduled fleet maintenance and refurbishment programs. o Tracking asbestos condition of the fleet until it is asbestos free. (p. VIII-22) 	<p>17) Implemented (1998 Audit Appendix D)</p> <p>18) Not Implemented WSF does not have a separate audit function. Vessel Engineering Manual specifies budget adherence reporting process.</p> <p>19) Not implemented WSDOT Asbestos Operations & Maintenance Manual does not have specific section on WSF. (WSF June 06 p. 22)</p> <ul style="list-style-type: none"> o Fleet wide survey not conducted/but did survey by vessel class 1991-1996. (WSF Aug 06) o Asbestos removal part of fleet preservation program (WSF Aug 06) o Eagle Harbor repair facility updating 2004 asbestos survey – currently estimate 5% to 10% of asbestos is remaining on vessels (WSF Aug 06) o Bainbridge, Anacortes & Seattle terminals have asbestos remaining (WSF Aug 06)

Area	Key Findings	Recommendations	Status/Questions
Budget Recommendations	<ul style="list-style-type: none"> • Inaccurate program budget estimates lay the ground for growth in refurbishment capital budgets. (p. VI-6) • Project prospectus: Defines new projects for inclusion in six-year plan and includes initial budget estimate. <ul style="list-style-type: none"> ○ No formal guidelines to prepare, justify and show linkage to traffic demand – done on ad hoc basis. (p. VI-6) ○ Average variance in initial estimate and final cost in five case studies ranged from 33% to 58%. • Program budget estimates: developed prior to start of project & used in biennium budget request. <ul style="list-style-type: none"> ○ Average variance in program budget estimates and final costs for five case studies is from 12% to 33%. (p. VI-6) • Initial and program budget estimates: <ul style="list-style-type: none"> ○ Based on historical information for similar class ships, not always reliable or accurate. ○ WSF has no detailed cost estimating guideline. (p. VI-6) • The system used for accountability & monitoring of the original program budget estimates may be contributing to the continued inaccuracy of the estimates. (p. VI-7) • Reports use the current authorized budget not the original budget estimate. (p. VI-7) <ul style="list-style-type: none"> ○ Cumulative impacts of budget revisions are not reported against the original budget estimate or explained. (p. VI-7) ○ Post program reviews do not include a review of initial and program budget estimates relative to actual program costs. (p. VI-7) • Budget revisions beyond contingency limits lack some of the controls & formal internal scrutiny reserved for original budget requests. (p. VI-8) • Budget revisions start at the work-order level and are compared to the prior level of authorization rather than to the adopted budget. (p. VI-8) • Work-order level may not be high enough for evaluating tradeoffs in priorities & impact on achievement of long-range service objectives. (p. VI-8) 	<p>20) Strengthen budgetary procedure to more closely monitor budget revisions</p> <ul style="list-style-type: none"> ○ Establish a process for evaluating budget revisions against service objectives. ○ Major budget revisions (i.e., those exceeding 15% contingency) should always be compared to original budget, as well as the prior budget revision. ○ Budget revisions must be evaluated in terms of their impact on service (traffic) and performance objectives prior to approval. ○ Monitor and report budget variances from original budget to top management on a quarterly basis, and the impact on achievement of service and performance objectives. ○ Limit budget revision authority at the Washington State Ferries. All budget/cost growth over contingency (15%) provisions should be scrutinized by an inter-departmental review committee. (p. VIII-23) <p>21) Develop guidelines for project prospectus and program budget estimate development. Include analysis of program budget estimate compared to actuals in post-program review.</p> <ul style="list-style-type: none"> ○ Project prospectus and program budget estimates must be more accurately based on historical refurbishment database. ○ Detailed guidelines should be 	<p>20) Not implemented (1998 Audit indicated it was). Budgets are not compared to the original budget and are not tied to service and performance objectives. Budgets are compared to the biennium budget, which was not done before this study.</p> <p>21) Implemented (1998 Audit Appendix D) life-cycle cost model information used.</p>

Area	Key Findings	Recommendations	Status/Questions
		<p>developed for project cost estimation. (p. VIII-24)</p> <p>22) Policy implications of schedule & budget adherence should be more clearly communicated to the Legislature in the original budget & subsequent versions to include:</p> <ul style="list-style-type: none"> ○ Impact of budget revisions and program progress on attainment of service level commitments to the public. ○ Impact of incremental budget revisions on total program costs. ○ Total actual program costs relative to benefits anticipated at project start. <p>(p. VIII-25)</p>	<p>22) Not implemented (1998 Audit said it was). Budgets and budget revisions are not tied to service projections.</p>

Department of Transportation Ferry System Performance Audit Report 98-6, Oct. 6, 1998

Booz-Allen & Hamilton, Inc. for Joint Legislative Audit and Review Committee (JLARC)

Independent & comprehensive audit of WSF overall operations including:

- Organizational structure & human resources
- Operations
- Maintenance & safety
- Vessel construction & refurbishment
- Long-range planning

Section on public/private partnerships not endorsed by JLARC.

Reviews of Audit:

1. 2001 Office of Financial Management Audit reported on implementation of 1998 recommendations
2. WSF: 2006 Status Report on the Recommendations Contained in the 1998 JLARC Audit of the WSF

Area	Key Findings	Recommendations	Consultants Report on Status
Organizational Structure & Human Resources	<ul style="list-style-type: none">• Diversity of stakeholder interests impedes ability to manage & operate effectively & efficiently. (20 groups) (p. 4-1)• Organizational structure is inverted, with senior management having numerous direct reports and lower management having few. (p. 4-3)• Management characterized by high turnover in key positions, which affects operational continuity and succession planning. (p. 4-7)• Compensation levels of top management are below comparable positions in the region. (p. 4-7)• Compensation of maritime & lower-level administrative support staff is above comparable positions in the region & state. (p. 4-8)• Collective bargaining & dispute resolution process impacts the day-to-day operations and management of WSF & its ability to operate efficiently & effectively. (p. 4-11)• Services provided by the Marine Employees Commission are not fully utilized by WSF management & labor unions. (p. 4-13)• Grievances & Unfair Labor Practice charges are disproportionately high. (p. 4-14)• Required safety-based programs are effectively developed & delivered, but adequate employee development & leadership training are not provided. (p. 4-15)• Training programs are underfunded, understaffed & not centrally	<ol style="list-style-type: none">1) Evaluate management structure system & identify options to reduce decision cycle time, clarify accountability & responsibility, eliminate conflict, & facilitate access to capital. (p. 4-16)2) Develop an employee training & development system. (p. 4-16)3) Conduct a comprehensive job classification & compensation study to support collective bargaining negotiations. (p. 4-17)	<ol style="list-style-type: none">1) Implemented 2005 legislative session established WSDOT as a cabinet agency reporting to the Governor. (WSF June 06 p 3) ➤ Management continues to be characterized by high turnover.2) Not implemented Training programs not funded. (WSF June 06 p. 4)3) Implemented Improved research & analysis supports collective bargaining with additional staffing. Passage of SHB 3178 in the 2006 legislative session, which reformed collective bargaining statutes for WSF assigning responsibility to the Governor, modifying the timeframe for negotiations, including a determination of financial feasibility by Office of Financial Management, a provision to return to collective bargaining in the event of a revenue

Area	Key Findings	Recommendations	Consultants Report on Status
	coordinated. (p. 4-15)	<p>4) Implement recommended organization structure to right the span-of-control situation, create succession planning opportunities, direct focus on "key" strategic areas, and alleviate communication and departmental gaps within the organization. (p. 4-18)</p> <p>5.) Align WSF employee overtime policy to that of state employees, where basic overtime rates will be no greater than 150% of base wage. (p. 4-19)</p> <p>6) Remove mandatory cost of living adjustment for WSF employees resulting from legislative action, and assign responsibility to WSF and WSDOT management to achieve legislative limits on appropriations. (p. 4-19)</p> <p>7) Evaluate the benefits of improving current Marine Employees Commission services or placing WSF employees and labor organizations under the jurisdiction of the Public Employee Relations Commission (PERC) or a similar organization. (p. 4-20)</p>	<p>shortfall & i an interest arbitration provision. (WSF June 06 p. 6)</p> <p>4) Implemented Assistant Secretary has 7 direct reports rather than the 5 recommended due to decision to have terminal engineering & vessel engineering report to Assist Secretary separately & creation of Director of Communications. (org chart)</p> <p>5) Not implemented Collective bargaining agreements not changed. (WSF June 06 p. 7)</p> <p>6) Not implemented (WSF June 06 p. 8)</p> <p>7) Partially implemented Passage of SHB 3178 in the 2006 legislative session lays the groundwork for improved labor relations. There is no plan to pursue movement of maritime union employees or labor organizations to Public Employee Relations Commission (PERC) jurisdiction. (PERC includes non-maritime union employees & labor organizations.) (WSF June 06 p. 9)</p>
Operations	<ul style="list-style-type: none"> • The Operations Center drives WSF's ability to optimize operations, control costs & interact with customers. (p. 5-2) • Systematic & documented procedures are needed to ensure 	8) Develop an information technology plan that leverages current system initiatives, identifies future information &	8) Not implemented WSF technology challenged with aging & non-integrated system. (WSF June 06 p.

Area	Key Findings	Recommendations	Consultants Report on Status
	<p>continuous service & appropriate relief staffing. (p. 5-3)</p> <ul style="list-style-type: none"> WSF incurs expenses & reduced vessel availability from non-revenue trips that might be avoided. (p. 5-4) The lack of documented operating practices & procedures inhibits the sharing of standards & potentially impedes performance. (p. 5-5) Existing operating manuals are neither comprehensive nor kept in a timely manner. (p. 5-5) The existing operating manuals do not coincide with management practices or procedures. (p. 5-6) International Safety Management (ISM) procedures are required for international compliance & for safety, & should result in improvements in documentation, analysis capabilities & performance. (p. 5-6) Documented emergency plans are required to prevent delayed or improper response to a crisis. (p. 5-7) WSF does not maintain adequate emergency response documentation to meet situational needs. (p. 5-7) Documentation to support ship-specific emergency response is needed. (p. 5-7) WSF employs redundant & modern systems to communicate vessel locations & condition. (p. 5-8) The Operations Center information agents use a modern, sophisticated telephone system to communicate with the public. (p. 5-8) Recent WSF computer system development initiatives have had mixed success. (Maintenance Management System and Automated Operations Support System) (p. 5-9) WSF does not fully utilize technology internally or externally to achieve operational savings and support management decision-making. (p. 5-10) 	<p>data requirements, leverages technology to achieve operational & organizational efficiencies, & supports management decision making and operational monitoring. (p. 5-11)</p> <p>9) Analyze vessel deployment strategies to reduce or eliminate the frequency of non-revenue generating boat moves and refueling operations. (p. 5-12)</p> <p>10) Extend the International Safety Management effort to include WSF domestic routes and terminal operations, including the development of documentation defining policies, procedures, and responsibility across the WSF organization. (p. 5-12)</p> <p>11) Develop emergency response & contingency plans for WSF, vessels and terminals. Documents should address field operations, management and support, and communications. (p. 5-13)</p>	<p>10) WSF will seek funding from the 2007 legislature to improve information systems. (WSF Aug 06)</p> <p>9) Implemented Reduced non-revenue boat moves from 1.8% of total moves (1996) to .5% of total moves due to more efficient fueling practices (1999 - 1,383 fueling trips/2006 - 317), vessel retirements and service reductions.</p> <p>10) Implemented 2001 WSF Safety Management System (SMS) evolved from International Safety Management expanded to include all vessels, terminal and Eagle Harbor repair facility. (WSF June 06 p. 13)</p> <p>11) Implemented WSF is in compliance with the new federal regulations in 46 CF W. (WSF June 06 p 13)</p>
Maintenance & Safety	<ul style="list-style-type: none"> Vessels have high level of operating maintenance. (p. 6-2) Terminals older but adequate, but uncertain piling conditions. (p. 6-2) System is reliable in terms of scheduled voyages completed & on-time performance. (p. 6-3) 	<p>12.) Accelerate implementation of Maintenance Management System, & redirect current Maintenance Management System efforts to validate system functionality requirements with</p>	<p>12) Implemented Maintenance Productivity Enhancement Tool (MPET) in use for all vessels, terminals, at the warehouse, in the purchasing department and at Eagle</p>

Area	Key Findings	Recommendations	Consultants Report on Status
	<ul style="list-style-type: none"> • Customers highly satisfied (lowest parking & terminal access). (p. 6-5) • All WSF vessels have Coast Guard certifications of inspection. (p. 6-6) • Cited by Coast Guard for safety infractions less often than other ferry systems. (p. 6-8) • Safety performance statistics compare favorably to other transportation modes. (p. 6-9) • Fleet older than other ferry systems. (p. 6-10) • Greater oversight, ownership & resources dedicated to fleet than to terminals. (p. 6-11) • Eagle Harbor repair facility is antiquated & poorly laid out. (p. 6-14) • Eagle Harbor cost of labor comparable to private shipyards & facilities. (p. 6-15) • Eagle Harbor staffing not aligned with seasonal workload. (p. 6-15) • Eagle Harbor repair facility does not have capability to estimate projected costs for comparison with private-sector bids. (p. 6-17) • Unsuccessful in implementing a Maintenance Management System. (p. 6-17) 	<p>users & identify additional development costs. (p. 6-19)</p> <p>13) Restructure Eagle Harbor repair facility operation, addressing facilities, staffing levels, workload management and job cost-estimating processes. (p. 6-20)</p>	<p>Harbor repair facility. (WSF June 06 p. 16)</p> <p>13) Partially implemented Master facility plan complete, with phase 1 to create a drive-on slip nearing completion. Maintenance Productivity Enhancement Tool developing a labor collection cost capability that will permit improved job planning, budget forecasting & accurate job costing. (WSF June 06 p. 18)</p> <ul style="list-style-type: none"> ○ Eagle Harbor repair facility staffing leveled through mission integration program which permits Eagle Harbor staff to work on a “not to interfere” basis on vessels while in commercial shipyards. (WSF Aug 06) ○ Project Planning Office at Eagle Harbor repair facility includes two planners/estimators. (WSF Aug 06)
Vessel Construction & Refurbishment	<p>(see 1991 report for related findings & recommendations)</p> <ul style="list-style-type: none"> • Refurbishment programs appear to be effective in reducing maintenance costs &, to a lesser degree, in increasing service reliability. (p. 7-5) • Refurbishment programs appear to result in only minor savings in overall operations costs. (p. 7-9) • WSF has planned & implemented a preservation program to replace its historic refurbishment program. (p. 7-10) • Refurbishment program may not result in the greatest return on capital investments as expenditures for some refurbishments have exceeded 67% of new construction costs. (p. 7-10) • Preservation offers an opportunity to maintain WSF vessels in sound operating condition while controlling costs. (p. 7-11) • Preservation program offers potential advantages over the renovation approach. (p. 7-13) 	<p>14) Implement a more systematic and formal Steel Maintenance Program and, as part of this program, the older single-compartment ferries should be subject to an independent survey. (p. 7-19)</p> <p>15.) Continue implementation of other recommendations made by the 1991 Booz Allen report that have not been fulfilled. (p. 7-19)</p> <p>16) Modify legislation controlling ferry firm, fixed-price contracting practices to allow WSF more discretion and flexibility in its procurement/contracting policy. (p. 7-20)</p>	<p>14) Implemented Steel maintenance program formalized & single-compartment ferries surveyed. (WSF June 06 p 19)</p> <p>15) See 1991 above.</p> <p>16) See 2001 study below.</p>

Area	Key Findings	Recommendations	Consultants Report on Status
	<ul style="list-style-type: none"> • Preservation approach needs appropriate management tools to ensure savings are realized (life-cycle cost model– does not help with Maintenance Management System or formalized steel maintenance program. (p. 7-13) • Reduced non-value added contract growth in major shipyard projects completed during the 1990s. (p. 7-15) • Procurement Partnership Process is designed to share more risk with contractors and reduce change orders. (p. 7-17) • In-house vessel design & construction support adequately staffed. (p. 7-18) 	<p>17) Assign a contract administrator from the Contracts/Legal Department to new construction, renovation and preservation contracts over \$10 million. (p. 7-20)</p> <p>18) Modify the standard contract language on Contract Problem Reports to require timely submission of proposals to accomplish Indefinite Quantity Work. (p. 7-20)</p> <p>19) Increase the length of time between contract award and ferry shipyard arrival. (p. 7-21)</p> <p>20) Reduce the amount of preplanned Indefinite Quantity Work included in the contract award to no more than 10% of the base work package. (p. 7-21)</p>	<p>17) Implemented in 2001 for M.V. Yakima Preservation. Fleet preservation program has eliminated shipyard contracts over \$10 million. (WSF Aug 06)</p> <p>18) Implemented Indefinite Quantity Work (IQW) clauses have been eliminated from WSF vessel preservation & new construction contracts. (WSF June 06 p. 25)</p> <p>19) Implemented Lengthened to 30 days. (WSF June 06 p. 25)</p> <p>20) Implemented Indefinite Quantity Work (IQW) clauses have been eliminated from WSF vessel preservation & new construction contracts. (WSF June 06 p 26)</p>
Long-Range Planning	<ul style="list-style-type: none"> • Mission statement is not adequately supported by detailed standards & performance measures. (p. 8-1) • Supporting service standards are proposed by WSF's Planning Department, reflecting community input but are defined by Legislature. (p. 8-2) • Service goals consistent with Alaska State Ferries. (p. 8-3) • Operational service goals & standards should be expanded to address on-time performance, customer satisfaction. (p. 8-3) • Forecasts since 1989 have overstated the passengers and vehicles handled through 1996 by as much as 5.5% and understated them by as much as 4.1% in a given year. (p. 8-5) • Cornerstone of current 20-year planning process is the use of the Travel Forecasting Model for demand forecasting. (p. 8-5) • Current 20-year demand projections are for 66.6% increase for passengers & 49% for vehicles. (p. 8-6) • Fleet capacity insufficient for vehicle demand, but sufficient for passenger demand over next 20 years. (p. 8-7) • Passenger capacity utilization for passenger-vehicle ferries less than 15% in 1997/23% in peak hours. (p. 8-7) 	<p>21) Build from WSF's corporate strategy to develop a strategic plan detailing corporate goals/objectives, actions and implementation steps, timing of actions, department and individual responsibilities, costs/benefits, and broader service standards. (p. 8-19)</p> <p>22) Validate the current Travel Forecast Model forecast with a new origin/destination study and augment the current supply side analysis with demand elasticity and fleet optimization analyses. (p. 8-20)</p> <p>i. Update Origin/Destination study every five years.</p> <p>23) Conduct a clean slate fleet and service optimization study to identify and evaluate benefits-costs of an unconstrained fleet and compare to the current 20-year plan. (p. 8-20)</p>	<p>21) Partially implemented Management turnovers have led to periodic updates of strategic plans. There is not currently a plan that extends to department & individual responsibilities, costs/benefits and broader service standards.</p> <p>22) Partially implemented 1999 Origin/Destination study conducted. South Sound update 2003 & 2004. i. Update Origin/Destination study planned for Oct. 2006. (WSF Aug. 06)</p> <p>23) Not implemented 2006-2030 Long Range Plan based on current fleet & service constraints. (Long-Range Plan p. 66)</p>

Area	Key Findings	Recommendations	Consultants Report on Status
	<ul style="list-style-type: none"> • Vehicle capacity utilization in 1997 71% and on many routes 100% at peak times. (p. 8-7) • Twenty (20)- year plan includes retirement of older vessels, addition of incremental capacity & preservation of current fleet. (p. 8-9) • Fleet planning process is scenario-based, focused on service planning by route & region. May not optimize operating & capital costs. Best practices of shipping companies incorporate fleet & deployment optimization exercises. (p. 8-11) • Attributes of an efficient terminal include safety, multi-modality, adequate capacity, & efficient loading/unloading. WSF terminals generally fall short in one or more areas. (p. 8-12) • Terminals are out-of-date & have insufficient capacity to support current peak demand. (p. 8-13) • Terminal capacity insufficient to support growth over 20 years. (p. 8-14) • Estimating capital expenditure requirements builds from recent construction costs, the life-cycle cost model & professional experience. (p. 8-18) 	<p>24) Develop a life-cycle cost model for terminals. (p. 8-20)</p>	<p>24) Implemented Terminal life-cycle cost model used for terminal preservation program. (WSF June 06 p. 29)</p>

Office of Financial Management: Performance Audit of the Washington State Ferry System Capital Program, 2001

Talbot, Korvola & Warwick

Capital Investments Model (Life-Cycle Cost Model)

1. Assess and validate the Ferries' decision-making process/model for capital investments.
2. Determine/define preservation vs. maintenance.

Contracting/Bidding Process

1. Assess how various state and federal procurement/bidding requirements affect acquiring and preserving assets.
2. Determine: compliance with applicable rules and regulations/effectiveness/fairness/total costs as compared to other bidders /timeliness.

Determine current procurement practices used by other entities.

Reviews of Audit :

1. WSF 2006 Response to 2001 Performance Audit
2. WSF 2006 Response to 1998 Performance Audit includes portions regarding 2001 Audit

Area	Key Findings	Recommendations	Consultants Report on Status
Life Cycle Cost Model	<ul style="list-style-type: none"> The life-cycle cost model can support an economic condition rating provided the models contain all cost data for preservation of vessel, and terminal systems and structures & inventory maintained. An economic condition rating would provide an effective tool for measuring the impact of expenditures. 	1) Use a modified version of the current systems/structures condition rating, weighting it by life cycle costs of systems and structures, to indicate an economic condition rating. (p. 27)	1) Implemented WSF began using economic condition rating in 2002. (WSF 06 p. 2)
Contracting/Bidding	<ul style="list-style-type: none"> Review of contract files found files with incomplete, missing or misfiled information. WSF contracting manual needs to include: <ul style="list-style-type: none"> Process from budget to contract distribution. Procedures & requirements for Request for Proposal process. List of applicable laws, regulations, codes. List of U.S. Department of Transportation manuals for reference. 	<p>2) Implement the use (or modify as appropriate) of current checklist & assure contract coordinators maintain contract files. (p. 53)</p> <p>3) Modify current contracting procedures manual & update as appropriate. (p. 54)</p>	<p>2) Implemented (WSF 06 p. 2)</p> <p>3) Not implemented (WSF 06 p. 3) Plan to complete by Dec. 31, 2006.</p>
Alternative Methods	<ul style="list-style-type: none"> Use of Invitation for Bid method for dockside & small ferry maintenance & repair services is appropriate. For dry dock & related services for large ferries, there is only one local-area shipyard. Navy faced with same situation at Everett, and has entered into multi-year service agreements. Request for Proposal-Best Value process best for auto ferry equipment & systems. Process requires approval from WSDOT Secretary of Transportation. Unnecessary & overly restrictive. Invitation for Bid is only process available to WSF for new auto ferry construction, which is a process no longer used by other entities for procurement of large vessels. Request for Proposal process should be 	<p>4) Examine and pursue alternative procurement approaches and statutory authorization regarding procurement of vessel maintenance and repair services. (p. 64)</p> <p>5) Seek legislative changes allowing the procurement of auto ferry equipment and systems through the Request for Proposal-Best Value process without first requesting an exception to the</p>	<p>4) Implemented SHB 2221 passed in the 2001 legislative session enables WSF to negotiate single sole source contracts for vessel services when there is only one bidder able to accommodate a vessel or class of vessels in their facility.</p> <p>5) Implemented SHB 2221 passed in the 2001 legislative session streamlined WSF's approval process for utilizing the RFP process.</p>

Area	Key Findings	Recommendations	Consultants Report on Status
	<p>allowed to:</p> <ul style="list-style-type: none"> ○ Enhance partnership between builder & owner. ○ Use relative strength of both parties. ○ Involve both in design & equally share design ownership. 	<p>invitation for bid process. (p 65)</p> <p>6) Seek legislative authority to allow the use of a modified Request for Proposal process to procure large ferry new construction. (p. 67)</p>	<p>6) Implemented SHB 1680 passed in the 2001 legislative session included authority for WSF to utilize the modified RFP process for new vessel construction.</p>

Report of the Legislature's Joint Task Force on Ferries, January 15, 2001

Objectives:

1. Establish a goal for farebox recovery.
2. Options for different levels of service.
3. Feasibility of privatization, public-private partnerships or state and local partnerships.
4. Establishing the short-term and long-term capital needs of the system.

Reviews:

WSF Report on Joint Task Force on Ferries Study 2006

Area	Key Findings	Recommendations	Consultants Report on Status
Service Delivery Alternatives	<ul style="list-style-type: none"> Washington State Constitution establishes the state operated ferry system as part of the state's highway system. (p. 19) Focused on alternatives for passenger only ferry (POF) because the Transportation Commission's post I-695 budget proposed eliminating POF service. (p. 20) No provider expressed any interest in providing auto ferries and/or terminal services. (p. 20) Existing laws limit alternative providers: <ul style="list-style-type: none"> Ten-mile rule (RCW 47.60.120) Assume labor agreements (RCW 47.64.090) Contracting-out prohibition (RCW 41.06.380) (p. 20-21) Alternative service providers cannot offer the current level of service as cost effectively, in part because of the need for significant capital investment and would need subsidy. (p. 25) <ul style="list-style-type: none"> More cost effective & less risky to continue WSF operation than a Kitsap Transit Seattle-Bremerton POF. (p.23) Private operation of POF not viable. (p.24) State-local or public-private partnership might be used to expand POF service. (p. 25) <ul style="list-style-type: none"> Viable option for expansion of POF to Kingston might be a state-local or public-private partnership with Kitsap Transit. (p. 24) FY 2000 Eagle Harbor repair facility accounted for 60% of WSF's maintenance program, even though required to contract out projects in excess of \$50,000 by RCW 47.28.030. (p. 24) Access to immediate maintenance & preservation staff crucial for WSF operation. (p. 24) 	<ol style="list-style-type: none"> 1) Ferries are part of the state's highway system and should remain open. No currently operated ferry routes should be terminated. (p. 19) 2) State should continue to provide & maintain both auto ferry and POF. (p. 25) 3) WSF should maintain an in-house maintenance & preservation facility service. (p. 25) 	<p>1 & 2) Changed Through legislative action WSF is discontinuing POF service. In 2003 WSF ceased Seattle-Bremerton passenger only service. In response to the 2005 study, <i>Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System</i>, the Legislature in SB 6787 adopted in the 2006 legislative session required WSF to sell 2 POF vessels, & authorized Vashon-Seattle service to continue until such time as a county ferry district's assumption of the route & required Office of Financial Management to study alternatives to state provision of POF on the Seattle Vashon route. (WSF 06 p. 2/SB 6787)</p> <p>3) Implemented Funding appropriated for preservation of Eagle Harbor repair facility and master plan prepared.</p>

Area	Key Findings	Recommendations	Consultants Report on Status
Operations: Service & Farebox Recovery	<ul style="list-style-type: none"> • I-601 would limit ferry tariff increases to 2.7% annually without a waiver from the legislature. (p. 29) • Current tariff relationships & route groups are based on the tariff structure WSF inherited from the Black Ball system in 1951. (p. 30) • There is no policy rationale for the current relationship among tariffs on routes of different lengths. (p. 30) • WSF Tariff Policy Committee has proposed to adjust ferry pricing between routes to reflect time on the ferry route as a variable component with all riders contributing to the fixed costs. (p. 30) • WSF has never implemented a tariff increase of a magnitude to cause a decrease in ridership. (p. 31) • Phasing in fee increases will allow WSF to gather data on price elasticity in a unique market. (p. 31) • POF service fees have been the same as passenger tariff on auto boats, with much lower farebox recovery on the POF. (p. 32) • Nationwide other ferry services charge a premium for POF service. (p. 32) • Farebox recovery includes maintenance costs as part of operating costs, which is not done for highways. (p. 33) • WSF projects that 80% farebox recovery will reduce ridership from 27 million trips per year to 25.1 million in 2007, therefore Task Force only dealt with 2001-03 service levels. (p. 35) 	<p>4) Legislature should exempt ferry tariffs from I-601 so that tariff increases can be phased in:</p> <ul style="list-style-type: none"> a. Increases to raise farebox recovery to 80%, with tariff increases phased in over six years. b. The effect on demand should be evaluated following each tariff increase. c. POF (passenger only ferries) tariff set at double passengers level on auto ferries. Should be reviewed if: <ul style="list-style-type: none"> o Ridership drops threaten viability of the program; o Bremerton POF loses fast-boat service, d. Implement tariff route equity based on a journey time-based model of time based tariff structure. (p. 34-35) <p>5) Ferries should continue reduced level of service through 01-03, including POF. (p. 38)</p>	<p>4) Implemented The Legislature exempted ferry tariffs from I-601. Since 2000, fares have increased between 60% and 108%. (p. 1 2006-2030 Long Range Plan)</p> <ul style="list-style-type: none"> a. Partially implemented Farebox recovery in FY 2005 76%. (pg. 57 2006-2030 Long Range Plan/Route Statement Summary Fiscal Year 2000-2005) b. Not implemented No annual report on the effect of tariff increases on demand. Elasticity is considered in the fare forecasts. c. Changed POF service is being eliminated. d. Implemented All routes are on distance based fares except San Juan Interisland route (planned May 09) & oversized vehicles on Anacortes-Friday Harbor route (planned May 07). <p>5) Implemented WSF has not restored any of the service cuts made in 1999 in response to I-695. (WSF 06 p. 5)</p>
Capital Program	<ul style="list-style-type: none"> • Three goals define capital program: <ul style="list-style-type: none"> o Set investment level to maintain condition of capital assets. o Set investment level to meet proposed service levels. o Incorporate one-time investment opportunities to preserve, improve, and expand existing terminals to meet current & future service demands. (p. 40) • First priority for the capital program is the maintenance & preservation of existing assets. (p. 42) • WSF capital program information is not included in the Legislative Project List. (p. 47) 	<p>6) Short- and long-term capital preservation program requirements should be met to ensure the delivery of operating services.</p> <ul style="list-style-type: none"> a. Current life cycle preservation activities do not address the replacement of assets as they reach the end of their useful life. (p 48) b. Catching up and keeping up with ferry and terminal preservation & 	<p>6) Delayed implementation</p> <ul style="list-style-type: none"> a. Not implemented The life cycle model does not separate replacement of assets at the end of their useful life. b. Partially Implemented Recommended

Area	Key Findings	Recommendations	Consultants Report on Status
	<ul style="list-style-type: none"> WSF classifies expenses as operating and capital. WSDOT uses maintenance, operation, preservation and improvement categories. (p. 47) 	<p>maintenance means raising the condition rating for:</p> <ul style="list-style-type: none"> i. vital systems to between 90% and 100% by 2011. ii. non-vital systems to between 60% and 80% by 2011. (p. 48) <p>c. New construction to replace vessels & terminals will result in reduced preservation costs. (p. 49)</p> <ul style="list-style-type: none"> i. Replace 4 auto ferries. ii. Mukilteo & Anacortes terminal projects address preservation & multi-modal needs. iii. Replace 2 POF vessels. <p>7) State needs to do a better of job telling citizens what they are getting for their ferry operating & capital investments.</p> <ul style="list-style-type: none"> a. Format presentations under maintenance, operations, preservation & improvements. b. Include ferry capital in Transportation Executive Information System (TEIS). c. Present information in a performance-based budgeting module similar to WSDOT's maintenance accountability program (MAP). d. Increase information available to the public. (p. 49) 	<p>levels of preservation to be reached by 2015 (WSF 06 p. 5) – See Gray Notebook June 05 p. 64 regarding delays in implementation.</p> <p>c. Partially implemented</p> <ul style="list-style-type: none"> i. 4 new vessels funded ii. Anacortes and Mukilteo terminal projects funded iii. Not needed due to legislative direction to eliminate WSF POF service. <p>7) Partially implemented</p> <ul style="list-style-type: none"> a. Not implemented Continuing to use preservation & improvement categories. b. Implemented Ferry projects are in Transportation Executive Information System (WSF 06 p 7) c. Implemented Through the life-cycle model reporting d. Implemented See web site/Gray Notebooks/Advisory Committees. (WSF 06 p. 8 and web site/Gray Notebooks)

Area	Key Findings	Recommendations	Consultants Report on Status
Budget Funding Shortfall	<ul style="list-style-type: none"> • 62% of revenue from tariffs (FY 01-03). (p. 50) • 60% of operational costs labor/88% of positions directly employed in operations & maintenance. (p. 51) • Of staff assigned to vessels, 97.8% are mandated by Coast Guard regulations & 2.2% by union agreements. (p. 51) • WSF eliminated 158 positions in response to I-695 or 8.6% of all positions. (p. 53) • WSF should continue to work with transit systems to coordinate tariff processing equipment & media. (p. 53) • New tariff processing equipment would allow WSF to implement demand pricing, i.e. different tariffs for peak & off-peak periods. (p. 54) 	8) WSF must continue to adopt operational efficiencies. <ul style="list-style-type: none"> a. Continue to implement efficiencies proposed in 1998 JLARC audit. b. Invest in technology to enable WSF to implement time-of-day and time-of-week variable tariffs. (p. 55) 	8) Partially implemented <ul style="list-style-type: none"> a. See 1998 report. b. Electronic fare system funded (\$15.7 million) 2003-05 legislative session. Implementation behind schedule. Testing on Pt. Townsend/Keystone route started Jan. 06 – implement at Anacortes Oct. 06. (WSDOT report to the legislature June 30, 2006 on Electronic Fare System Project) <ul style="list-style-type: none"> ➤ Electronic Fare System implementation will enable WSF to implement variable rate tariffs (WSF Aug 06)
Governance	<ul style="list-style-type: none"> • Task Force determined that service & revenue issues facing the system were most pressing at this time, but that governance should be examined. (p. 56) 	9) The Legislature should review ferry governance options. <ul style="list-style-type: none"> a. Creation of local or regional ferry transit districts as funding mechanism for expanded POF service. b. Once funding stable, legislature could examine options for ferry governance as part of the overall review of transportation governance per the Blue Ribbon Commission. 	9) Implemented <ul style="list-style-type: none"> a. RCW 36.54 adopted in the 2005 legislative session allows for the creation of county ferry districts. SB 6787 adopted in the 2006 legislative session establishes ferry grant program for county ferry districts offering POF service, requires WSF collaboration in terminal operations. b. 2005 Legislative session established WSDOT as a cabinet agency reporting to the Governor.

Washington State Ferries Financing Study

Technical Appendix 2: Legislative Concerns and Directions



Prepared For:

Joint Transportation Committee
Washington State Legislature

Consultant Team:

Cedar River Group, LLC
Mirai Associates
Norway Hill Development
RL Collier Company

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Executive Summary

This review of legislative concerns and directions is to provide context for the Washington State Ferries Financing Study. Included are a summary of consultant interviews with key legislators and legislative staff, conducted in August and September 2006, and a review of the legislative record.

Legislator Interviews

The consultants interviewed state legislators and legislative staff to gather background on areas of concern regarding Washington State Ferries (WSF). See Appendix A for a list of those interviewed.

Each interview began with a review of the purpose of the ferry financing study and the legislation authorizing it. Those interviewed were asked to identify their major concerns and areas they would like to see addressed in the study.

Legislative concerns include a need for greater understanding of WSF. There are also concerns about: management and efficiency; ferry fares and ancillary revenues; ferry financing and costs; labor relations; ferry system planning; terminal and Eagle Harbor repair facility capital projects; and management structure.

Legislative Record

Laws covering Washington State Ferries are found in RCW 47.60, which covers the ferry and toll bridge system, and in RCW 47.64, which deals with marine employees and public employment relations. RCWs 36.54 and 36.57A relate to the provision of passenger-only ferry service by county ferry districts and public transportation benefit authorities respectively. RCW 47.06 includes requirements for the long-range plan for ferries as part of the state transportation plan, and SSB 6241 includes legislative directions with adoption of the biennial budget.

The legislative history partially reflects changes in state law in response to legislative studies. These studies are reviewed in the *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*.

Key laws are as follows:

RCW 47.60 Ferry and Toll Bridge System. Key provisions relate to: the purpose of the ferry system; tariffs and charges; ancillary revenues and partnerships; vessel acquisition; and passenger-only ferry service.

RCW 36.54 County Ferry Districts and RCW 36.57A Public Transportation Benefit Authorities – Passenger-Only Ferry Service. The legislature has modified these laws to encourage development of local passenger-only ferry services.

RCW 47.64 Marine Employees Labor Relations. This chapter includes a statement of public policy; prohibits strikes, work stoppages and lockouts; establishes the Marine Employees Commission; and governs collective bargaining for WSF.

RCW 47.06 Planning. This chapter deals with the statewide multimodal transportation plan, and includes requirements for the ferry portion of the plan.

SSB 6241: Transportation Budget. This legislation provides policy directions for the biennium budget, including direction for the ferry system.

See Appendix B: Summary of Legislation for more detail.

Section One

Introduction

This review of legislative concerns and directions is to provide context for the Washington State Ferries Financing Study. Included are a summary of consultant interviews with key legislators and legislative staff, conducted in August and September 2006, and a review of the legislative record.

Section Two

Legislator Interviews

The consultants interviewed state legislators and legislative staff to gather background on areas of concern regarding Washington State Ferries (WSF). See Appendix A for a list of those interviewed.

Each interview began with a review of the purpose of the ferry financing study and the legislation authorizing it. (See discussion of SSB 6241 starting on page 26.) Those interviewed were asked to identify their major concerns and areas they would like to see addressed in the study. The focus was on concerns, not areas of satisfaction.

Legislative concerns include a need for greater understanding of WSF. There are also concerns about: management and efficiency; ferry fares and ancillary revenues; ferry financing and costs; labor relations; ferry system planning; terminal and Eagle Harbor repair facility capital projects; and management structure.

A. Legislative Understanding

Legislators and staff interviewed indicated that there is a lack of understanding about the problems facing WSF, particularly among those legislators who do not represent ferry districts. Some noted that these legislators tend to regard the system as a drain on gas tax revenues that would otherwise go to highway projects.

The study needs to provide information on the history of WSF, particularly the impact of the loss of the motor vehicle excise tax on ferries' operations and capital funding. The key variables affecting ferries' operating and capital costs—including labor, fuel, and ridership—need to be explained. Legislators are particularly interested in the amount of gas tax money being spent on ferry capital projects.

Legislators hope that the study will provide a reality check on WSF's ridership projections and operations and capital plans.

B. Management and Efficiency

There is substantial concern among those interviewed about the management and efficiency of WSF. Some believe that management lacks credibility with the legislature and attribute that, in part, to frustration with the information provided by WSF. This contributes to a sense that WSF is not being realistic in its ridership and revenue projections or in its capital and operating plans.

Legislators want to be assured that the system is operating at maximum efficiency and if not, to understand the reasons for inefficiency. This is particularly important given large fare increases, decreases in ridership and the goal of 80 percent or better farebox recovery. In particular legislators and staff are concerned that management growth may have resulted in a top-heavy organization and that WSF does not have a clear and

realistic plan for the future. Some believe that WSF does not have staff capable of making sound business decisions or of entering into creative partnerships or otherwise engaging in entrepreneurial activities that might help close the revenue gap.

C. Ferry Fares

Many of those interviewed are concerned about the rising costs of ferry fares. Some believe that the goal of 80 percent farebox recovery recommended by the Joint Legislative Task Force on Ferries in 2001 is too high, and that it has created controversy with ferry users. They also want it to be clear that this recommendation from the Task Force is not, in their view, legislative policy. They would like to know how ferries' farebox recovery compares to transit systems, and how a farebox goal should be set systemwide and by route.

Some have pricing suggestions including discounting non-peak fares to use existing capacity; congestion pricing; and collecting fares both ways to promote greater ridership and reduce those riding for free.

Many of those interviewed expressed concern about the implementation of the electronic fare system, with many frustrated that it has taken so long. Some believe that WSF could have purchased a more easily installed system.

Rates are set by the Washington State Transportation Committee with advice from the Tariff Policy Committee (TPC). The TPC is not a legislatively created body, and there are concerns about the composition and role of this Committee.

There are also questions about: the number of frequent users and the percentage of tariff revenues generated by frequent users; the equity of fare increases; and school bus and other specific charges.

D. Financing and Costs

Those interviewed noted the need for stable funding for ferries, especially in light of the loss of Motor Vehicle Excise Tax (MVET) funding. Several suggested that more stable revenue could come from development partnerships and increased ancillary revenues. This would not eliminate the need for a more stable tax source, but may help to reduce the amount required.

The legislature has commissioned a fuel forecasting study that will be incorporated into this study of ferry financing. Several suggested that ferries should research hedging fuel purchases to help stabilize pricing, provided they can acquire the expertise to do so effectively.

E. Ancillary Revenues

Several of those interviewed noted that more sustainable, non-fare revenues should be generated by WSF, noting the potential for private/public partnerships to help fund development or generate income for ferries. Most questioned the capability of WSF to seek these partnerships.

Several felt that WSF could do a better job of generating advertising and concessions income, noting that at some terminals where there are long vehicle waits, food service is very important. Others felt that WSF should be able to show a reasonable rate of return on any investments made in food service or other concession facilities.

F. Labor Relations

Legislators want to understand the impact of collective bargaining agreements on ferry costs and how they differ from agreements with other state employees. Several mentioned the need to find a win-win situation with labor, with the goal of working together to stabilize ferry ridership and costs. Some noted the need to identify critical areas for negotiation, and others that the Marine Employees Commission is a large cost driver.

G. Ferry System Planning

Several of those interviewed expressed concern about how ferry planning is coordinated with highway planning. In particular they are concerned about the impact of ferry traffic as projected by WSF on roads. Interviewees suggested that since WSF is part of WSDOT, they should be required to plan jointly with highways, noting that there is little mention of ferries and their impacts in the state highway plan.

H. Terminal and Eagle Harbor Repair Facility Capital Projects

There are concerns related to the budgeting, scheduling and management of the terminal and Eagle Harbor repair facility projects and about scope creep. Legislators are concerned about: the integration of these projects with highway projects (i.e., Colman Dock and the Alaskan Way Viaduct); with projected service changes (i.e., impact on the Edmonds terminal re-location of a passenger-only ferry service between Kingston and Seattle); and with each other (i.e., staggering of construction at the Bainbridge Island terminal with construction at the Seattle terminal.)

Several expressed concern about how WSF prioritizes improvement projects, how they spend resources on planning when they have to return to the legislature for funding for the project; and why they continue designing projects if there is not a clearly identified fund source for construction.

Several also expressed concern about scope changes. If the legislature authorizes a project and then WSF decides to expand it, how should they receive approval? For instance, WSF is considering re-locating its warehouse to the Eagle Harbor repair facility, which is a change in the scope of that project.

One interviewee suggested allowing local communities to take a more active role in terminal designs, with WSF providing the key functional requirements. This might reduce friction with local communities and provide a better way to accomplish these projects.

I. Structure

Some of those interviewed raised a question of whether WSF should remain a part of the Washington State Department of Transportation (WSDOT) or be separate. A few suggested that outside review bodies should be created to help WSF. These might include an advisory commission of experts to review ridership forecasts or a panel to review major projects to ensure that they utilize best practices in terms of efficiency, technology, and business analysis of tradeoffs, including cost-benefit analysis.

Section Three Legislative Record

Laws covering Washington State Ferries are found in RCW 47.60, which covers the ferry and toll bridge system, and in RCW 47.64, which deals with marine employees and public employment relations. RCWs 36.54 and 36.57A relate to the provision of passenger-only ferry service by county ferry districts and public transportation benefit authorities respectively. RCW 47.06 includes requirements for the long-range plan for ferries as part of the state transportation plan, and SSB 6241 includes legislative directions with adoption with the biennial budget.

The legislative history partially reflects changes in state law in response to legislative studies. These studies are reviewed in the *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*.

A. RCW 47.60 Ferry and Toll Bridge System

Key provisions of RCW 47.60 dealing with the ferry system are discussed below, including: those provisions relating to the purpose of the system; tariffs and charges; ancillary revenues and partnerships; vessel acquisition; and passenger-only ferry service.

The legislative history reflects WSF's history. The agency was jointly operated by the Washington Toll Bridge Authority and the State Highway Department prior to the creation in 1977 of the WSDOT. RCW 47.01.011 is the statement of legislative intent behind the creation of WSDOT: "Through this chapter, a unified department of transportation is created. To the jurisdiction of this department will be transferred the present powers, duties, and functions of the department of highways, the highway commission, the toll bridge authority, the aeronautics commission, and the canal commission, and the transportation related powers, duties, and functions of the planning and community affairs agency."

1. Purpose of Washington State Ferries

RCW 47.60 identifies the purpose of the ferries as both an extension of the state highway system and as a provider of mass transit. As part of the state highway system, the ferry system may include toll bridges and connecting roadways, although it currently does not have any such facilities as part of the system. Competitive ferry systems within ten miles of the operation of a ferry route are prohibited, with the exception of passenger-only ferries operated by a ferry or public transportation district, providing WSF with a protected market.

WSDOT is authorized to operate, improve and extend a ferry system, connecting with the public streets and highways in the state. The system shall include "such boats, vessels, wharves, docks, approaches, landings, franchises, licenses and appurtenances as shall be deemed . . . necessary or desirable for efficient operation of the ferry system. . . . The department may . . . include in the ferry system such toll bridges, approaches, and

connecting roadways as may be deemed . . . advantageous in channeling traffic to points served by the ferry system.” (RCW 47.60.010)

The ferry system, including any toll bridges, approaches and roadways incidental to the system, may be financed and operated in combination or separately as one or more units of WSDOT as the department may determine. The ferry system, together with any toll bridge constructed by the department across Puget Sound or Hood Canal replacing one or more presently operated ferry routes, is declared to be a continuous project within the meaning of RCW 47.56.070. (RCW 47.60.130) (RCW 47.56.070 provides that no toll facility, toll bridge, toll road, or toll tunnel, shall be combined with any other toll facility for the purpose of financing unless such facilities form a continuous project, to the end that each such facility or project be self-liquidating and self-sustaining.)

The legislature finds and declares that the state ferry system is a public mass transportation system. (RCW 47.60.017)

If WSDOT operates a ferry crossing, there shall not be any other ferry crossing within ten miles of such crossing. This section does not apply to the operation of passenger-only ferry service by public transportation districts meeting the requirements of RCW 36.57A.200 or the operation of passenger-only ferry service by ferry districts. (RCW 47.60.120) (RCW 36.57A.200 deals with the creation of public transportation benefit areas. See Section A.2 for further information.)

Table 1. Purpose of Ferries

RCW	Provision
47.60.010	Authorizes ferries to connect to state highways. Ferry system may include toll bridges, approaches & connecting roadways.
47.60.017	State ferry system is a public mass transportation system.
47.60.120	Prohibits other ferry services within 10 miles of WSF ferry routes, except for passenger-only ferry service by ferry districts or public transportation districts meeting the requirements of RCW 36.57A.200.
47.60.130	Allows operation and financing of the ferry system in conjunction with any toll bridge across Puget Sound that replaces a presently operated ferry route or across Hood Canal.

2. Tariffs and Charges

The legislature has established requirements for revisions to ferry tariffs and charges; authorized the Washington State Transportation Commission (WSTC) to establish ferry tariffs and charges; created Ferry Advisory Committees to provide public input for tariff changes; and required public participation in making changes to ferry tariffs and charges. WSF is authorized to establish special event, promotional and discounted fares.

The department is to conduct a full review of the charges for WSF each year in order to maintain an “adequate, fair, and economically sound schedule of charges for . . . passengers, vehicles and commodities.” The review, with recommended fee changes, is to be sent to the WSTC prior to February 1st of each odd-numbered year. The Commission is to adopt charges for the ensuing biennium by July 1st.

If, during the biennium, it appears that projected revenues and operating subsidies will not meet projected ferry system maintenance and operations costs, the department is directed to undertake a review of charges to determine whether they should be revised and to make recommendations to the WSTC. The WSTC may revise the schedule of charges to meet the maintenance and operations expenditures of the ferry system or defer action until the regular review and revision of ferry charges.

In conducting its biennial tariff review, the department may consider the following factors:

- The amount of subsidy available to the ferry system for maintenance and operation.
- The time and distance of ferry runs.
- The maintenance and operation costs for ferry runs with a proper adjustment for higher costs of operating outmoded or less efficient equipment.
- The efficient distribution of traffic between cross-sound routes.
- The desirability of reasonable rates for persons using the ferry system to commute daily to work and other frequent users who live in ferry-dependent communities.
- The effect of proposed fares in increasing walk-on and vehicular passenger use.
- The effect of proposed fares in promoting all types of ferry use during non-peak periods.
- The estimated revenues that are projected to be earned by the ferry system from commercial advertisements, parking, contracts, leases, and other sources.
- The pre-purchase of multiple fares, whether for a single rider or multiple riders.
- d. Such other factors as prudent managers of a major ferry system would consider. (RCW 47.60.326)

Every three years, subject to the provisions of RCW 47.60.326, WSF is directed to undertake a review of tariffs and charges that shall include, but not be limited to, tariffs for automobiles, passengers, trucks, commutation rates, and volume discounts. The review shall give proper consideration to:

- Time of travel
- Distance of travel
- Operating costs
- Maintenance and repair expenses
- Effect on the debt service requirements
- Allocation of vessels to particular runs
- The scheduling of particular runs
- The adequacy and arrangements of docks and dock facilities
- Any other subject deemed by the department to be properly within the scope of the review. (RCW 47.60.300)

Before increasing ferry tolls, the department is to consider all possible cost reductions, with full public participation regarding the possible reductions, and also to consider adapting service levels equitably on a route-by-route basis to reflect trends in and forecasts of traffic usage. (RCW 47.60.330)

The ferry system is to be efficiently managed, operated and maintained as a revenue-producing undertaking. Subject to the provisions of RCW 47.60.326, the WSTC is required to set a schedule of tolls and charges that allow the Puget Sound capital construction account to meet debt service requirements. (RCW 47.60.440)

In conducting tariff reviews, WSF is directed to solicit advice from Ferry Advisory Committees. The legislative authorities of San Juan, Skagit, Clallam and Jefferson counties each appoint a committee of five members. The legislative authorities of all other counties that contain ferry terminals appoint ferry advisory committees consisting of three members for each terminal area in each county, except for Vashon, which shall have one committee appointed by the Vashon/Murray Island community council. At least one person appointed to each ferry advisory committee shall represent frequent users of the ferry system. Each member has to reside in the vicinity of the terminal that the advisory committee represents. Members serve four-year terms. The chairs of the several committees constitute an executive committee. The executive committee is to meet twice each year with WSF. (RCW 47.60.310)

Before a substantial expansion or curtailment of service or a revision in the schedule of ferry tolls or charges, the department is to consult with affected ferry users by:

- Public hearings in affected local communities, or
- Conducting a survey of affected ferry users, and
- Review with ferry advisory committees pursuant to RCW 47.60.310 (RCW 47.60.330)

The Chief Executive Officer of the ferry system is authorized to use promotional, discounted and special event fares to maximize capacity use and revenues. (RCW 47.60.326) These charges are not subject to the public participation requirements of RCW 47.60.330.

Table 2. Tariffs and Charges

RCW	Provision
47.60.290	Review tariffs for the purpose of establishing a more fair and equitable tariff for passengers, vehicles and commodities, subject to RCW 47.60.326.
47.60.300	The review required by RCW 47.60.326 shall occur every three years & must include: <ul style="list-style-type: none"> a. time of travel b. distance of travel c. operating costs d. maintenance and repair expenses e. effect on debt service requirements f. allocation of vessels to particular runs g. the scheduling of particular runs h. the adequacy and arrangements of docks and dock facilities

RCW	Provision
	i. or factors as decided by the department.
47.60.310	Establishes Ferry Advisory Committees to be appointed by County legislative authorities, except for Vashon Island where a community council appoints the members. The department is to consult with the Ferry Advisory Committees in making tariff recommendations.
47.60.326	The department to review fares by Feb. 1 st of each odd-numbered year. WSTC to adopt fares by July 1 st for the ensuing biennium. Fare review may include: <ul style="list-style-type: none"> a. Subsidy available to the ferry system for maintenance and operation. b. Time and distance of runs. c. Maintenance and operation costs for runs adjusted for use of outmoded or less efficient equipment. d. Efficient distribution of traffic between cross-sound routes. e. Reasonable rates for commuters & other frequent users in ferry dependent communities. f. Increasing walk-on and vehicular passenger use. g. Promote non-peak use. h. Other revenues from advertisements, parking, contracts, leases, etc. i. The pre-purchase of multiple fares. j. Other factors prudent ferry system managers would consider. WSF CEO allowed to set promotional, discounted and special event fees.
47.60.330	Establishes public participation requirements for major service reductions or expansions and for tariff changes. Requires: <ul style="list-style-type: none"> a. Public hearings in local communities, or b. A survey of affected ferry users, and c. Review with Ferry Advisory Committees as required by RCW 47.60.130. Requires the consideration of all possible cost reductions, with full public participation on the cost reductions, and adapting service levels equitably on a route-by-route basis to reflect trends in and forecasts of traffic usage before tolls are increased.
47.60.440	Ferry system is to be operated and maintained as a revenue-producing undertaking. WSTC required to set tolls to meet debt service requirements.

3. Ancillary Revenues/Partnerships

The legislature has authorized the department to charter ferries and to enter into concession and advertising agreements, and joint development agreements with public or private developers.

Chartering of WSF's vessels is authorized when established route operations and normal use requirements are not disrupted. The department is directed to consider the special needs of local communities and interested parties and to be sensitive to the interests of existing private enterprises. Charter rates must be established at actual operating costs plus a market-rate profit margin. (RCW 47.60.135)

The ferry system is to be operated as a revenue-producing and self-liquidating undertaking. WSF has the right to enter into leases and contracts for use and occupancy of spaces on the ferries, wharves, docks, approaches, parking lots and landings, including the selling of commercial advertising space and licenses to use the WSF trademarks. All contracts are limited to ten years except for joint development agreements. The competitive process for the agreements limited to ten years shall be either an invitation for bids as established by RCW 43.19 or a request for proposals in accordance with RCW 47.56.030. All revenues from commercial advertising, concessions, parking, leases and contracts must be deposited in the ferry operations account.

As part of a joint development agreement under which a public or private developer constructs or installs improvements on ferry system property, the department may enter into leases not to exceed fifty-five years (or not to exceed thirty years for those areas located within harbor areas) if the department determines the longer term is necessary for the developer to make reasonable recovery on its initial investment. Any lease that involves state aquatic lands shall conform to the Washington State Constitution and applicable statutory requirements as determined by the Department of Natural Resources. That portion of the lease rate attributable to state aquatic lands shall be distributed in the same manner as other lease revenues derived from state aquatic lands as provided in RCW 79.105.150. (RCW 79.105.150 establishes the aquatic lands enhancement account for the deposit of funds received from sales or leases of state aquatic lands.)

WSF is to include in the strategic planning and performance assessment process, as required by RCW 43.88.090, an analysis of the compatibility of public and private partnerships with the ferry system's core business, and efforts to maximize non-farebox revenues and benefit ferry users. The department shall include an assessment of the need for an open solicitation to identify and select possible public or private partnerships in order to maximize the value of projects and the state's investment in current and future ferry system operations. If an open solicitation is warranted, WSF is to issue a request for proposal with responses to be evaluated based on compatibility with the state ferry system's core business, potential to maximize non-farebox revenue, longevity of the possible partnership commitment, and benefit to ferry users. If no responses are received, or those that are received are incompatible with ferry system operations, WSF may proceed with state ferry system operating strategies designed to achieve state ferry system objectives without established partnerships. (RCW 47.60.140) (RCW 43.88.090 governs budgeting in the State of Washington and requires agencies to establish strategic plans and associated performance measures.)

Table 3. Other Operating Revenues/Public-Private Partnerships

RCW	Provision
47.60.135	Authorizes chartering of ferries when not disruptive to normal operations. Charter fees must be set for full cost recovery plus a market-rate return. Chartering must be sensitive to the interests of existing private enterprises.
47.60.140	Ferries to be operated as revenue-producing and self-liquidating undertaking. Authorized to enter into leases and contracts for concessions & space. Allowed to sell commercial advertising space and use of the WSF trademarks. Unless part of a joint development agreement, leases cannot be longer than ten years and must be entered into through an invitation for bids or RFP process. All concessions and other income from these ten year agreements must be used to support operations. Joint development agreements can be up to 55 years (or 30 for those areas located within harbors) if necessary to allow the developer to make a reasonable recovery on their initial investment. An analysis of the compatibility of public and private partnerships with WSF's core business and the effort to maximize non-farebox revenue is to be included in the strategic planning and performance assessment process required under the state budget law – RCW 43.88.090. If an open solicitation is warranted, public-private partnerships are to be sought via an RFP with the evaluation based on compatibility with WSF's core business, potential to maximize non-farebox revenue, longevity of possible partnership commitment and benefit to ferry users. If no responses are received or the responses to the RFP are rejected, WSF may proceed to implement its operating strategies without established partnerships.

4. Vessel Acquisition

The legislature has authorized three studies related to vessel acquisitions: *Washington State Ferries Management of Vessel Refurbishment Programs* in 1991; *Department of Transportation Ferry System Performance Audit 98-6* in 1998; and *Performance Audit of the Washington State Ferry System Capital Program* in 2001. These reports are reviewed in the *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*. Legislation regarding vessel acquisition has been adopted in conformance with the recommendations of these reports.

In 1993 the Legislature established a process for the construction of Jumbo Mark II class ferries. The process involved prequalification of potential bidders, with the prequalification process to include a summary of the vessel requirements. Any firm requesting them was to receive a copy of the bid documents. Bid documents had to include a bid to deliver vessels constructed by the plans and specifications provided by the department; one bid for the construction of three vessels; a requirement that the vessels be constructed within the state; a requirement that warranty work be done within the state; and a listing of all equipment to be furnished by the state. The contract was to be awarded to the firm submitting the lowest responsible bid. (RCW 47.60.770-778)

An RFP process was authorized in 1994 for acquisition of the Jumbo Mark II class ferry propulsion system, if not acquired as part of the bid process under RCW 47.60.770. The legislature established the criteria for the most advantageous diesel engine as 45% life-cycle costs; 20 percent reliability, 20 percent maintainability and 15 percent engine performance. The life-cycle cost factors shall consist of the costs for engine acquisition and warranty, spare parts acquisition and inventory, fuel efficiency and lubricating oil consumption, and commonality. The fuel efficiency and lubricating oil consumption life-cycle cost factors shall receive not less than 20 percent of the total evaluation weighting and shall be evaluated under a format similar to that employed in the 1992 M.V. Tyee engine replacement contract. The reliability factors shall consist of the length of service and reliability record in comparable uses, and the mean time between overhauls. The mean time between overhauls evaluation shall be based upon the manufacturer's required hours between change of wear components. The maintainability factors shall consist of spare parts availability, the usual time anticipated to perform typical repair functions, and the quality of factory training programs for ferry system maintenance staff. The performance factors shall consist of load change responsiveness, and air quality of exhaust and engine room emissions. (RCW 47.60.780)

The finding and intent notes for RCW 47.60.780 discuss the implementation of the 1991 *Washington State Ferries Management of Vessel Refurbishment Programs* report and that the legislation authorizing the RFP process for the propulsion system is in response to that study. It also states that a steering committee, in carrying out the recommendations of the 1991 study, had determined that the procedure for the procurement of equipment, parts, and supplies for the Jumbo Class Mark II ferry vessels authorized by RCW 47.60.770-778, must take into consideration, in addition to life-cycle cost criteria, criteria that are essential to the operation of a public mass transportation system responsive to the

needs of ferry users, and that assess the reliability, maintainability, and performance of equipment, parts, and supplies to be installed in the Jumbo Mark II ferries.

In 2001 after receipt of the *Performance Audit of the Washington State Ferry System Capital Program*, the Legislature authorized a design-build approach to auto-ferry construction. The contractor is to be selected in a three-phase RFP process. Phase one is to evaluate and select pre-qualified proposers to participate in subsequent development of technical proposals. WSF is to evaluate submitted proposals in phase one under selection criteria which may include but are not limited to:

- Shipyard facilities
- Organization components
- Design capability
- Build strategy
- Experience and past performance
- Ability to meet vessel delivery dates
- Projected workload
- Expertise of project team and other key personnel

Phase two involves preparation of technical proposals by those firms qualified in Phase one. The technical proposals must include:

- Design and specification sufficient to fully depict the ferries' characteristics and identify installed equipment.
- Drawings showing arrangements of equipment and details necessary for the proposer to develop a firm, fixed price bid.
- Project schedule including vessel delivery dates.

The department is to conduct periodic reviews with each of the selected proposers to consider and critique their designs, drawings and specifications. The department is authorized to change the RFP if they determine it to be necessary during the review process.

Phase three consists of the submittal and evaluation of bids and the award of the contract for the final design and construction of the auto ferries. The bids must be in conformance with the approved technical proposal. The department is to select the responsive and responsible proposer that has submitted the lowest total bid price.

The department may provide an honorarium to reimburse each unsuccessful phase three proposer for a portion of its technical proposal preparation costs at a pre-set, fixed amount to be specified in the request for proposals. (RCW 47.60.810-822)

Table 4. Vessel Acquisition

RCW	Provision
47.60.730-780	Authorized Jumbo Mark II class vessel construction. Authorized bid process for vessel construction. Permitted an RFP process to be used for purchase of the propulsion system in response to the findings of the 1991 Washington State Ferries Management of Vessel Refurbishment Programs report. Notes to 47.60.780 reference implementation of the 1991 report with additional criteria for acquisition of equipment, parts, and supplies to be installed in the Jumbo Mark II ferries.
47.60.810-822	Authorized auto-ferry vessel acquisition through a three-phase design-build process in response to the 2001 Performance Audit of the Washington State Ferry System Capital Program.

5. Passenger-Only Ferries

The legislature has authorized two studies related to passenger-only ferries including: *Ten-Year Passenger Strategy for Washington's Multimodal Ferry Transportation System* in 2005 and the *Passenger-Only Ferry Cost Analysis* in 2006. The legislature also convened a Passenger-Only Ferry Task Force that issued a report in January 2006. The work of the Task Force and the reports are reflected in 2006 legislative action directing WSF to discontinue its passenger-only ferry service, except for the Vashon to Seattle route, authorizing a grant program to support transit district passenger-only ferry service, and in modifications to the legislation governing public transportation benefit areas.

In 1998 the legislature authorized the department to proceed with design and permitting processes for passenger-only terminals at Southworth and Kingston and to acquire four passenger-only ferries. (RCW 47.60.649-654)

In 2003 the legislature authorized the department to give its passenger-only ferries and other properties associated with passenger-only service to public transportation benefit areas meeting the requirements of RCW 36.571A.200 or county ferry districts for passenger-only ferry service as a full or part consideration for their assumption of passenger-only ferry service and all associated maintenance and operation costs. The vessels were to return to WSF if not used for passenger-only service. (RCW 47.60.656)

The 2006 legislature directed the ferry system to maintain the level of service existing on January 1, 2006, on the Vashon to Seattle passenger-only ferry route until such time as the legislature approves a county ferry district's assumption of the route, as authorized under RCW 36.54.110(5). (RCW 36.54.110(5) deals with county ferry districts' authorization to operate passenger-only ferry service between Vashon and Seattle. See Section 2.B.1 for further information.) (RCW 47.60.658)

The 2006 legislature also directed the ferry system to collaborate with new and potential passenger-only ferry service providers to Vashon and potentially Southworth, as described in RCW 36.54.110(5) for terminal operations at its existing terminal facilities. (RCW 47.60.662) A passenger ferry account was established by the 2006 legislature to be used for operating or capital grants for ferry systems as provided in RCW 36.54 and 36.57A. (RCW 47.60.645)

Table 5. Passenger-Only Ferry Service

RCW	Provision
47.60.649-654	Directed WSF to proceed with design and permitting processes for passenger-only terminals at Southworth and Kingston. Authorized to acquire 4 passenger-only ferries. Terminal improvements and vessel acquisition contingent on legislative appropriation.
47.60.656	Authorized the department to convey its passenger-only ferries and other properties associated with passenger-only service to public transportation benefit areas or county ferry districts as full or part consideration for the benefit area or ferry district to assume all future maintenance and operations obligations and costs to maintain and operate the vessels and facilities.
47.60.658	Department shall maintain the Jan. 1, 2006 level of service on the Vashon to Seattle passenger-only ferry route until the legislature approves a county ferry district's assumption of the route under RCW 36.54.110(5).
47.60.662	WSF shall collaborate with new and potential passenger-only ferry service providers as described under RCW 36.54.110(5) for terminal operations at its existing terminal facilities.

B. RCW 36.54 County Ferry Districts and RCW 36.57A Public Transportation Benefit Authorities – Passenger-Only Ferry Service

RCW 36.54 governing county ferry districts and RCW 36.57A authorizing public transportation benefit authorities have been modified to encourage development of local passenger-only ferry services.

1. RCW 36.54 County Ferry Districts

RCW 36.54, which governs county ferry districts, was modified in the 2003 and 2006 legislative sessions to deal specifically with passenger-only ferry service between Vashon and Seattle. It allows the legislative authority of any county to create a ferry district, as a separate taxing authority. The legislative body of the affected county would govern the ferry district. (RCW 36.54.110). Ferry districts are permitted to levy an ad valorem tax on all taxable property located in the district not to exceed seventy-five cents per thousand dollars of assessed value to be used for ferry services. (RCW 36.54.130). Ferry districts are also permitted to 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. (RCW 36.54.140)

The 2006 legislative session added the following specific provision with regard to Vashon service:

A county with a population greater than one million persons and having a boundary on Puget Sound, or a county to the west of Puget Sound with a population greater than two hundred thirty thousand but less than three hundred thousand persons, proposing to create a ferry district to assume a passenger-only ferry route between Vashon and Seattle, including an expansion of that route to include Southworth, shall first receive approval from the governor after submitting a complete business plan to the governor and the legislature by November 1, 2006. The business plan must, at a minimum, include hours of operation, vessel needs, labor needs, proposed routes, passenger terminal facilities, passenger rates, anticipated federal and local funding, coordination with Washington state ferry system, coordination with existing transit providers, long-term operation and maintenance needs, and long-

term financial plan. The business plan may include provisions regarding coordination with an appropriate county to participate in a joint ferry. . . . In order to be considered for assuming the route, the ferry district shall ensure that the route will be operated only by the ferry district and not contracted out to a private entity, all existing labor agreements will be honored, and operations will begin no later than July 1, 2007. If the route is to be expanded to include serving Southworth, the ferry district shall enter into an inter-local agreement with the public transportation benefit area serving the Southworth ferry terminal within thirty days of beginning Southworth ferry service. (RCW 36.54.110)

Table 6. County Ferry Districts – Passenger-Only Ferry Service

RCW	Provision
37.54.110	<p>Authorizes the legislative authority to create a ferry district. The ferry district is an independent taxing authority. The members of the county legislative authority shall compose the governing body of any ferry district. Authorizes a ferry district to assume a passenger-only ferry route between Vashon and Seattle, including an expansion to include Southworth provided that the district submits a business plan to the governor and legislature by November 1, 2006. The business plan must include:</p> <ol style="list-style-type: none"> 1. Hours of operation 2. Vessel needs 3. Labor needs 4. Proposed routes 5. Passenger terminal facilities 6. Passenger rates 7. Anticipated federal and local funding 8. Coordination with WSF 9. Coordination with existing transit providers 10. Long-term maintenance and operations needs 11. Long-term financial plan <p>All operations must be provided by the ferry district and cannot be sub-contracted. All existing labor agreements must be honored. Operations must start by July 1, 2007.</p>
36.54.130	<p>Ferry district may levy each year an ad valorem tax on all taxable property in the district not to exceed \$.75 per thousand dollars of assessed value. The levy must be sufficient for the provision of ferry services as shown in the budget of the ferry district. The tax may only be used for providing ferry services.</p>
36.54.140	<p>Ferry district may impose excess levies upon the property included in the district for a one-year period to be used for operating or capital purposes whenever authorized by district electors.</p>

2. RCW 36.57A Public Transportation Benefit Areas

RCW 36.57A, which authorizes public transportation benefit areas, was amended in 2003 to allow public benefit areas with borders on Puget Sound to operate passenger-only ferry service. Before a benefit area may provide passenger-only ferry service, it must develop a passenger-only ferry investment plan including elements to operate or contract for the operation of passenger-only ferry services; purchase, lease, or rental of ferry vessels and dock facilities for the provision of transit service; and identify other activities necessary to implement the plan. The plan must set forth terminal locations to be served, projected costs of providing services, and revenues to be generated from tolls, locally collected tax revenues, and other revenue sources. The plan must ensure that services provided under the plan are for the benefit of the residents of the benefit area. The public transportation

benefit area may enter into contracts and agreements to operate passenger-only ferry service and public-private partnerships and design-build, general contractor/construction management, or other alternative procurement process substantially consistent with chapter 39.10 RCW. (RCW 36.57A.200) (RCW 39.10 authorizes alternative public works contracting procedures.)

In allowing public transportation benefit areas to provide passenger-only service, the legislature made the following finding: “Passenger-only ferry service is a key element to the state’s transportation system and 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. The legislature recognizes that if the state eliminates passenger-only ferry service on one or more routes, it should provide an opportunity for locally sponsored service and the department of transportation should assist in this effort. It is the intent of the legislature to encourage inter-local agreements to ensure passenger-only ferry service is reinstated on routes that the Washington state ferry system eliminates.” (RCW 36.57A.200 notes)

To finance passenger-only ferry service, public transportation benefit areas are allowed to recommend use of a motor vehicle excise tax, as provided in RCW 82.80.130; a sales and use tax, as provided in RCW 82.14.440; tolls for passengers and packages and, where applicable, parking; and charges or licensing fees for advertising, leasing space for services to ferry passengers, and other revenue-generating activities as part of their investment plan. Taxes may not be imposed without voter approval. (RCW 36.57A.210) (RCW 82.80.130 permits public transportation benefit areas in areas where a regional transit authority has not been formed to submit to the voters a tax of up to four-tenths of one percent on the motor vehicles for passenger-only ferry service. RCW 82.14.440 allows these same public transportation benefit areas to submit to the voters a sales and use tax not to exceed four-tenths of one percent for passenger-only ferry service.)

In 2006 the legislature adopted the following with regard to passenger-only ferry service between Kingston and Seattle: “A public transportation benefit area seeking funding for a passenger-only ferry route between Kingston and Seattle shall first receive approval from the governor after submitting a complete business plan to the governor and the legislature by November 1, 2006. The business plan must, at a minimum, include hours of operation, vessel needs, labor needs, proposed routes, passenger terminal facilities, passenger rates, anticipated federal and local funding, coordination with Washington state ferry system, coordination with existing transit providers, long-term operation and maintenance needs, and long-term financial plan.” (RCW 36.57A.220)

Table 7. Public Transportation Benefit Areas – Passenger-Only Ferry Service

RCW	Provision
36.57A.200	Authorizes a public transportation benefit area with a boundary located on Puget Sound to provide passenger-only ferry service. Before providing such service, the benefit area must develop a passenger-only ferry investment plan to include: 1. Elements to operate or contract for the operation of passenger-only ferry service, including

RCW	Provision
	<p>purchase, lease or rental of ferry vessels and dock facilities for the provision of transit service and other activities necessary to implement the plan.</p> <ol style="list-style-type: none"> 2. Terminal locations to be served. 3. Project costs for providing service. 4. Revenues to be generated from tolls, locally collected revenues and other revenue sources. <p>Findings: 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. The legislature recognizes that if the state eliminates passenger-only ferry service on one or more routes, it should provide an opportunity for locally sponsored service and the department of transportation should assist in this effort. It is the intent of the legislature to encourage inter-local agreements to ensure passenger-only ferry service is reinstated on routes that the Washington state ferry system eliminates.</p>
36.57A.210	<p>As part of passenger-only investment plan, benefit areas may recommend some or all of the following revenue sources:</p> <ol style="list-style-type: none"> 1. Motor vehicle excise tax as provided in RCW 82.80.130. 2. Sales and use tax, as provided in RCW 82.14.440. 3. Tolls for passengers and packages, and where applicable, parking. 4. Charges or licensing fees for advertising, leasing space for services to ferry passengers and other revenue-generating activities. <p>Taxes may not be imposed without voter approval.</p>
36.57A.220	<p>A public transportation benefit area seeking funding for a passenger-only ferry route between Kingston and Seattle shall first receive approval from the governor after submitting a complete business plan to the governor and legislature by November 1, 2006. The business plan must include, at a minimum:</p> <ol style="list-style-type: none"> 1. Hours of operation 2. Vessel needs 3. Labor needs 4. Proposed routes 5. Passenger terminal facilities 6. Passenger rates 7. Anticipated federal and local funding 8. Coordination with WSF 9. Coordination with existing transit providers 10. Long-term operations and maintenance needs 11. Long-term financial plan

C. RCW 47.64 Marine Employees Labor Relations

Labor relations for WSF's represented employees are governed under RCW 47.64, which: includes a statement of public policy; prohibits strikes, work stoppages and lockouts; establishes the Marine Employees Commission; and governs collective bargaining for WSF.

In 1975, the then-existing Marine Employees' Commission (created when the state acquired the ferry system in 1957), was disbanded and its functions placed under the Public Employment Relations Commission (PERC). A law passed in May 1981 removed ferry system employees' wages and certain benefits from the scope of collective bargaining. It resulted in a three-day wildcat strike by state ferry employees. This strike prompted then-Governor John Spellman to put together a Blue Ribbon Panel.

The Panel proposed a collective bargaining process to resolve disputes between ferry system management and employee organizations. The Panel recommended the reconstitution of the Marine Employees' Commission and policy goals, which formed the basis for RCW 47.64 governing WSF's labor relations. (www.marineempcom.org)

RCW 47.64 was modified in the 2006 Legislative session by the adoption of SHB 3178 which gave the governor, rather than WSDOT, the authority to negotiate marine employee labor agreements; changed the timing of collective bargaining to ensure its completion prior to the submission of the governor's budget to the legislature; required certification by the Office of Financial Management of the financial feasibility of the agreements; and gave the legislature the discretion to accept or reject the request for funds to pay for the agreements. Key provisions of RCW 47.64 are as follows.

1. Public Policy

The Legislature declares it is the public policy of the state of Washington to:

- Provide continuous operation of the Washington state ferry system at reasonable cost to users.
- Efficiently provide levels of ferry service consistent with trends and forecasts of ferry usage.
- Promote harmonious and cooperative relationships between the ferry system and its employees by permitting ferry employees to organize and bargain collectively.
- Protect the citizens of this state by assuring effective and orderly operation of the ferry system in providing for their health, safety, and welfare.
- Prohibit and prevent all strikes or work stoppages by ferry employees.
- Protect the rights of ferry employees with respect to employee organizations.
- Promote just and fair compensation, benefits, and working conditions for ferry system employees as compared with public and private sector employees in states along the west coast of the United States, including Alaska, and in British Columbia in directly comparable but not necessarily identical positions. (RCW 47.64.006)

2. Strikes, Work Stoppages and Lockouts

Strikes, work stoppages and lockouts are prohibited. Any citizen is allowed to file in Thurston County Superior Court for an injunction restraining an actual or threatened violation of this prohibition. The rules allow emergency passenger service on the waters of Puget Sound in the event of a work slowdown or stoppage. (RCW 47.64.140)

3. Marine Employees Commission

A three-member Marine Employees Commission is created with members appointed by the Governor subject to the consent of the senate. One member is to be appointed from labor, one from industry and one from the public who has significant knowledge of maritime affairs. The public member is the Chair of the Commission. The Commission is to:

- Adjust all complaints, grievances, and disputes between labor and management;
- Provide for impasse mediation; and

- Provide salary surveys (RCW 47.64.280)

The salary survey is to be conducted prior to and for the purpose of collective bargaining. The survey is to compare wages, hours, employee benefits, and conditions of employment of involved ferry employees with those of public and private sector employees in states along the west coast, including Alaska and British Columbia. The survey is to guide but not define or limit collective bargaining. (RCW 47.64.220)

4. Collective Bargaining

Negotiations must commence on or before September 1st of every odd-numbered year, with negotiations to be complete by April 1st of the following year. If negotiations are not concluded by April 1st, the parties shall be deemed to be at impasse and shall proceed to mediation. The agreements must be complete on or before September 1st of the even-numbered year next preceding the biennial budget period during which the agreement should take effect.

The governor shall submit to the legislature a request for funds or legislation necessary to implement the agreement or arbitration award only if the Director of the Office of Financial Management has by October 1st before the legislative session certified that the agreement or arbitration award is financially feasible for the state.

The legislature shall approve or reject the submission of the request for funds necessary to implement the agreement or arbitration award as a whole for each agreement or award. If the legislature rejects or fails to act on the submission, the agreement is not binding and either party may reopen all or part of the agreement.

If a significant revenue shortfall occurs resulting in reduced appropriations to WSF, as declared by the governor or by the legislature, both parties shall immediately enter into collective bargaining for a mutually agreed-upon modification of the agreement. (RCW 47.64.170)

5. Interest Arbitration

If an agreement is not reached by April 15th and upon recommendation of the assigned mediator, all impasse items shall be submitted for arbitration. The issues for arbitration shall be limited to those issues certified by the commission, with final positions on the matters to be submitted to the arbitrator or arbitration panel not later than ten working days before the hearing date. (RCW 47.64.300)

An interest arbitration exercises a state function and is functioning as a state agency. (RCW 47.64.310)

The decision of an arbitrator or arbitration panel is not binding on the legislature. If not funded by the legislature, the arbitrated agreement is not binding on the state, WSDOT or ferry employee organizations. Arbitrators are to take into consideration:

- Past collective bargaining contracts between the parties including the bargaining that led up to the contracts.
- The constitutional and statutory authority of the employer.
- Stipulations of the parties.
- The results of the salary survey.
- Comparison of wages, hours, employee benefits, and conditions of employment of the involved ferry employees with those of public and private sector employees in states along the west coast of the United States, including Alaska, and in British Columbia doing directly comparable but not necessarily identical work, giving consideration to factors peculiar to the area and the classifications involved.
- Changes in any of the foregoing circumstances during the pendency of the proceedings.
- The limitations on ferry toll increases and operating subsidies as may be imposed by the legislature.
- Other factors that are normally or traditionally taken into consideration in the determination of matters that are subject to bargaining. (RCW 47.64.320)

Table 8. Marine Employees Labor Relations

RCW	Provision
47.64.006	Public policy of the state to: <ol style="list-style-type: none"> 1. provide continuous operation of the ferry system at reasonable cost to users. 2. efficiently provide levels of ferry service consistent with trends and forecasts of ferry usage. 3. promote harmonious and cooperative relationships between the ferry system and its employees by permitting ferry employees to organize and bargain collectively. 4. protect the citizens of this state by assuring effective and orderly operation of the ferry system. 5. prohibit and prevent all strikes or work stoppages by ferry employees. 6. protect the rights of ferry employees with respect to employee organizations. 7. promote just and fair compensation, benefits, and working conditions for ferry system employees as compared with public and private sector employees in states along the west coast and B.C.
47.64.140	Prohibits strikes, work stoppages and lockouts.
47.64.280	Establishes the three-member Marine Employees Commission to <ol style="list-style-type: none"> 1. Adjust complaints, grievances and disputes between labor and management 2. Provide for impasse mediation 3. Provide salary surveys Members to be appointed by governor, subject to consent of the senate. One member is to be appointed from labor, one from industry and one from the public. Public member is chair. Salary survey is to be conducted prior to and for the purpose of collective bargaining.
47.64.170	Establishes schedule for collective bargaining. <ol style="list-style-type: none"> 1. Must commence on or before 9-1 of every odd-numbered year. 2. Must be complete by 4-1 of the following year. 3. If not concluded by 4-1, the parties shall proceed to mediation. 4. Agreements must be complete by 9-1 of the even-numbered year preceding the biennial budget. Governor shall submit to the legislature a request for funds or legislation to implement the agreement if the Director of the Office of Financial Management certifies before 10-1 that it is financially feasible. Legislature shall approve or reject the submission of the request for funds or necessary legislation as a whole. If rejected by the legislature, the agreement is not binding.

RCW	Provision
	If a significant shortfall in revenue occurs resulting in reduced appropriations to WSF, as declared by the governor or the legislature, both parties must return to collective bargaining.
47.64.300	If agreement is not reached by 4-15, or upon recommendation of the mediator, all impasse items shall be submitted for arbitration, with issues for arbitration limited to those certified by the Marine Employees Commission. Final positions on matters to go to arbitration must be submitted no later than 10 working days before the hearing date.
47.64.310	An interest arbitration exercises a state function and is functioning as a state agency.
47.64.320	An arbitration decision is not binding on the legislature. Arbitrators are to take into consideration: <ol style="list-style-type: none"> 1. Past collective bargaining contracts. 2. The constitutional and statutory authority of the employer. 3. Stipulations of the parties. 4. The results of the salary survey. 5. Comparison of wages, hours, employee benefits, and conditions of employment of the involved ferry employees with those of public and private sector employees in states along the west coast & BC. 6. Changes in any of the foregoing circumstances during the pendency of the proceedings. 7. The limitations on ferry toll increases and operating subsidies as may be imposed by the legislature. 8. Other factors that are normally or traditionally taken into consideration.

D. RCW 47.06 Planning

RCW 47.06 deals with the statewide transportation plan. The intent of planning is to provide a guide for short-term investment needs and a long-range vision for transportation system development.

The statewide multimodal transportation plan is to: conform with federal requirements; ensure the continued mobility of people and goods within regions and across the state in a safe, cost-effective manner; and include a state-owned facilities component, which shall guide state investment for state highways including bicycle and pedestrian facilities, and state ferries. The plan is also to include a state-interest component, which shall define the state interest in aviation, marine ports and navigation, freight rail, inter-city passenger rail, bicycle transportation and pedestrian walkways, and public transportation.

The plans developed under the state-owned facilities component and the state-interest components:

- Must be consistent with the state transportation policy plan and with each other.
- Reflect public involvement.
- Be consistent with regional transportation planning, high-capacity transportation planning, and local comprehensive plans.
- Include analysis of intermodal connections and choices.

A primary emphasis for these plans shall be the relief of congestion, the preservation of existing investments and downtowns, the ability to attract or accommodate planned population and employment growth, the improvement of traveler safety, the efficient

movement of freight and goods, and the improvement and integration of all transportation modes to create a seamless intermodal transportation system for people and goods.

The plans are to identify and document potential affected environmental resources, including, but not limited to, wetlands, storm water runoff, flooding, air quality, fish passage, and wildlife habitat. (RCW 47.06.010)

The ferry portion of the state plan is to:

- Establish service objectives for state ferry routes.
- Forecast travel demand for the various markets served in the ferry system.
- Develop strategies for ferry system investment that consider regional and statewide vehicle and passenger needs.
- Support local land use plans.
- Assure that ferry services are fully integrated with other transportation services.
- Provide for maintenance of capital assets.
- Provide for preservation of capital assets based on lowest life-cycle cost methodologies.
- Assess the role of private ferries operating under the authority of the utilities and transportation commission.
- Coordinate ferry system capital and operational plans with these private operations.
- Be consistent with the regional transportation plans for areas served by the state ferry system.
- Be developed in conjunction with the ferry advisory committees. (RCW 47.06.050)

The plan is also to set level of service standards for state ferry routes of statewide significance and to consider the necessary balance between providing for the free inter-jurisdictional movement of people and goods, and the needs of local communities using these facilities. (RCW 47.06.140)

Table 9. Planning

RCW	Provision
47.06.010	Statewide multimodal transportation plan to include a state-owned component, including a component on ferries. The state-owned components and the state-interest components are to: <ol style="list-style-type: none">1. Be consistent with the state transportation policy plan and with each other.2. Reflect public involvement.3. Be consistent with regional transportation planning, high-capacity transportation planning, and local comprehensive plans.4. Include analysis of intermodal connections and choices.
47.06.050	The ferry portion of the plan is to: <ol style="list-style-type: none">1. Establish service objectives for state ferry routes.2. Forecast travel demand for the various markets served in the ferry system.3. Develop strategies for ferry system investment that consider regional and statewide vehicle and passenger needs.4. Support local land use plans.

RCW	Provision
	5. Assure that ferry services are fully integrated with other transportation services. 6. Provide for maintenance of capital assets. 7. Provide for preservation of capital assets based on lowest life-cycle cost methodologies. 8. Assess the role of private ferries operating under the authority of the utilities and transportation commission. 9. Coordinate ferry system capital and operational plans with these private operations. 10. Be consistent with the regional transportation plans for areas served by the state ferry system. 11. Be developed in conjunction with the ferry advisory committees.
47.06.140	The ferry plan is to establish level-of-service standards for state ferry routes of statewide significance and to consider the balance between movement of people and goods, and the needs of local communities using these facilities.

E. SSB 6241: Transportation Budget

Policy directions for WSF are incorporated in the transportation budget. SSB 6241 provides policy directions for the FY 2005-07 biennium.

1. Marine Employees Commission (MEC)

To address its growing caseload, the MEC is developing a plan for prioritizing cases to schedule for hearings. The MEC is to report to the transportation committees of the legislature on its case prioritization plan by Dec. 15, 2005.

2. Ferry Financing Study

The purpose of the study is to facilitate policy discussions and decisions by members of the legislature regarding WSF. The legislature recognizes that there is a need within the Washington state ferry system for predictable cash flows, transparency, assessment of organizational structure, verification that the Washington state ferry system is operating at maximum efficiency, and better labor relations. The study must include, at minimum, a review and evaluation of the ferry system's financial plan, including current assumptions and past studies in the following areas:

- Operating program, including ridership, revenue and cost forecasts and the accuracy of those forecasts.
- Capital program, including project scoping, prioritization and cost estimating, project changes including legislative input regarding significant project changes, and performance measures.

The Joint Transportation Committee is to forward the study to the transportation committees of the house and senate by January 1, 2007.

3. Passenger-Only Ferry Service

Established the eighteen-member passenger-only ferry service task force. (See passenger-only service section above.)

4. Sidney Service

WSF is directed to continue service to Sidney.

5. Fuel Costs

WSDOT, the Washington State Economic Revenue Forecast Council and Office of Financial Management are to review and adopt a method of forecasting motor vehicle and special fuel prices, revenue and the amount of consumption. The report, which will deal with ferries' fuel prices, is due December 1, 2006.

6. Security Expenditures

Ferry security operations costs shall not be included as part of the operational costs that are used to calculate farebox recovery. WSF is to track security costs and expenditures.

7. Electronic Fare System

WSF is to implement an electronic fare system, including the integration of the regional fare system (smart card). WSF is required to report each December and June on the implementation of electronic fares, with updates concluding the first December after full implementation.

8. Project Reporting

WSF is required to report, on a quarterly basis beginning July 1, 2005, to the Office of Financial Management and the legislature the status of each project in the project lists regarding project scope, schedule and costs.

Table 10. Budget Policies

SSB	Provision
SSB 6241	<p>Marine Employees Commission: Develop system to prioritize caseload and report to legislature by 12-05.</p> <p>Ferry Financing Study: Authorize Joint Transportation Committee report to facilitate legislative discussions on the ferry system. Report due Jan. 1, 2007.</p> <p>Passenger-Only Ferry Service: Established the eighteen-member passenger-only ferry service task force. (See passenger-only service section above.)</p> <p>Sidney Service: WSF is directed to continue service to Sidney.</p> <p>Fuel Costs: WSDOT, the Washington State Economic Revenue Forecast Council and OFM are to review and adopt a method of forecasting motor vehicle and special fuel prices, revenue and the amount of consumption. The report, is due December 1, 2006.</p> <p>Security Expenditures: Ferry security operations costs shall not be included as part of the operational costs that are used to calculate farebox recovery. WSF is to track security costs and expenditures.</p> <p>Electronic Fare System: WSF is to implement an electronic fare system, including the integration of the regional fare system (smart card). WSF is required to report each December and June on the implementation of electronic fares, with updates concluding the first December after full implementation.</p> <p>Project Reporting: WSF is required to report, on a quarterly basis beginning July 1, 2005, to OFM and the legislature the status of each project in the project lists regarding project scope, schedule and costs.</p>

Appendix A Interviews

Senate

Senator Haugen – Chair Senate Transportation Committee
Senator Benson
Senator Rockefeller
Senator Shin
Senator Spanel
Mike Groesch – Senate Transportation Committee staff
Joseph Backholm – Senate Republican caucus staff

House of Representatives

Rep. Murray
Rep. Flannagan
Rep. Woods
Rep. Morris
Beth Redfield – House Transportation Committee staff
Jay Balasbas – House Republican Caucus staff
Mary Fleckenstein – House Democratic Caucus staff

Appendix B Summary of Legislation

Purpose of Ferries

RCW	Provision
47.60.010	Authorizes ferries to connect to state highways. Ferry system may include toll bridges, approaches & connecting roadways.
47.60.017	State ferry system is a public mass transportation system.
47.60.120	Prohibits other ferry services within 10 miles of WSF ferry routes, except for passenger-only ferry service by ferry districts or public transportation districts meeting the requirements of RCW 36.57A.200.
47.60.130	Allows operation and financing of the ferry system in conjunction with any toll bridge across Puget Sound that replaces a presently operated ferry route or across Hood Canal.

Tariffs and Charges

RCW	Provision
47.60.290	Review tariffs for the purpose of establishing a more fair and equitable tariff for passengers, vehicles and commodities, subject to RCW 47.60.326.
47.60.300	The review required by RCW 47.60.326 shall occur every three years & must include: <ul style="list-style-type: none"> a. time of travel b. distance of travel c. operating costs d. maintenance and repair expenses e. effect on debt service requirements f. allocation of vessels to particular runs g. the scheduling of particular runs h. the adequacy and arrangements of docks and dock facilities i. or factors as decided by the department.
47.60.310	Establishes Ferry Advisory Committees to be appointed by County legislative authorities, except for Vashon Island where a community council appoints the members. The department is to consult with the Ferry Advisory Committees in making tariff recommendations.
47.60.326	The department to review fares by Feb. 1 st of each odd-numbered year. WSTC to adopt fares by July 1 st for the ensuing biennium. Fare review may include: <ul style="list-style-type: none"> a. Subsidy available to the ferry system for maintenance and operation. b. Time and distance of runs. c. Maintenance and operation costs for runs adjusted for use of outmoded or less efficient equipment. d. Efficient distribution of traffic between cross-sound routes. e. Reasonable rates for commuters & other frequent users in ferry dependent communities. f. Increasing walk-on and vehicular passenger use. g. Promote non-peak use. h. Other revenues from advertisements, parking, contracts, leases, etc. i. The pre-purchase of multiple fares. j. Other factors prudent ferry system managers would consider. WSF CEO allowed to set promotional, discounted and special event fees.
47.60.330	Establishes public participation requirements for major service reductions or expansions and for tariff changes. Requires: <ul style="list-style-type: none"> a. Public hearings in local communities, or b. A survey of affected ferry users, and c. Review with Ferry Advisory Committees as required by RCW 47.60.130. Requires the consideration of all possible cost reductions, with full public participation on the cost reductions, and adapting service levels equitably on a route-by-route basis to reflect trends in and forecasts of traffic usage before tolls are increased.

RCW	Provision
47.60.440	Ferry system is to be operated and maintained as a revenue-producing undertaking. WSTC required to set tolls to meet debt service requirements.

Other Operating Revenues/Public-Private Partnerships

RCW	Provision
47.60.135	Authorizes chartering of ferries when not disruptive to normal operations. Charter fees must be set for full cost recovery plus a market-rate return. Chartering must be sensitive to the interests of existing private enterprises.
47.60.140	Ferries to be operated as revenue-producing and self-liquidating undertaking. Authorized to enter into leases and contracts for concessions & space. Allowed to sell commercial advertising space and use of the WSF trademarks. Unless part of a joint development agreement, leases cannot be longer than ten years and must be entered into through an invitation for bids or RFP process. All concessions and other income from these ten year agreements must be used to support operations. Joint development agreements can be up to 55 years (or 30 for those areas located within harbors) if necessary to allow the developer to make a reasonable recovery on their initial investment. An analysis of the compatibility of public and private partnerships with WSF's core business and the effort to maximize non-farebox revenue is to be included in the strategic planning and performance assessment process required under the state budget law – RCW 43.88.090. If an open solicitation is warranted, public-private partnerships are to be sought via an RFP with the evaluation based on compatibility with WSF's core business, potential to maximize non-farebox revenue, longevity of possible partnership commitment and benefit to ferry users. If no responses are received or the responses to the RFP are rejected, WSF may proceed to implement its operating strategies without established partnerships.

Vessel Acquisition

RCW	Provision
47.60.730-780	Authorized Jumbo Mark II class vessel construction. Authorized bid process for vessel construction. Permitted an RFP process to be used for purchase of the propulsion system in response to the findings of the 1991 Washington State Ferries Management of Vessel Refurbishment Programs report. Notes to 47.60.780 reference implementation of the 1991 report with additional criteria for acquisition of equipment, parts, and supplies to be installed in the Jumbo Mark II ferries.
47.60.810-822	Authorized auto-ferry vessel acquisition through a three-phase design-build process in response to the 2001 Performance Audit of the Washington State Ferry System Capital Program.

Passenger-Only Ferry Service

RCW	Provision
47.60.649-654	Directed WSF to proceed with design and permitting processes for passenger-only terminals at Southworth and Kingston. Authorized to acquire 4 passenger-only ferries. Terminal improvements and vessel acquisition contingent on legislative appropriation.
47.60.656	Authorized the department to convey its passenger-only ferries and other properties associated with passenger-only service to public transportation benefit areas or county ferry districts as full or part consideration for the benefit area or ferry district to assume all future maintenance and operations obligations and costs to maintain and operate the vessels and facilities.
47.60.658	Department shall maintain the Jan. 1, 2006 level of service on the Vashon to Seattle passenger-only ferry route until the legislature approves a county ferry district's assumption of the route under RCW 36.54.110(5).
47.60.662	WSF shall collaborate with new and potential passenger-only ferry service providers as described under RCW 36.54.110(5) for terminal operations at its existing terminal facilities.

County Ferry Districts – Passenger-Only Service

RCW	Provision
37.54.110	<p>Authorizes the legislative authority to create a ferry district. The ferry district is an independent taxing authority. The members of the county legislative authority shall compose the governing body of any ferry district. Authorizes a ferry district to assume a passenger-only ferry route between Vashon and Seattle, including an expansion to include Southworth provided that the district submits a business plan to the governor and legislature by November 1, 2006. The business plan must include:</p> <ol style="list-style-type: none"> 1. Hours of operation 2. Vessel needs 3. Labor needs 4. Proposed routes 5. Passenger terminal facilities 6. Passenger rates 7. Anticipated federal and local funding 8. Coordination with WSF 9. Coordination with existing transit providers 10. Long-term maintenance and operations needs 11. Long-term financial plan <p>All operations must be provided by the ferry district and cannot be sub-contracted. All existing labor agreements must be honored. Operations must start by July 1, 2007.</p>
36.54.130	<p>Ferry district may levy each year an ad valorem tax on all taxable property in the district not to exceed \$.75 per thousand dollars of assessed value. The levy must be sufficient for the provision of ferry services as shown in the budget of the ferry district. The tax may only be used for providing ferry services.</p>
36.54.140	<p>Ferry district may impose excess levies upon the property included in the district for a one-year period to be used for operating or capital purposes whenever authorized by district electors.</p>

Public Transportation Benefit Areas – Passenger-Only Ferry Service

RCW	Provision
36.57A.200	<p>Authorizes a public transportation benefit area with a boundary located on Puget Sound to provide passenger-only ferry service. Before providing such service, the benefit area must develop a passenger-only ferry investment plan to include:</p> <ol style="list-style-type: none"> 1. Elements to operate or contract for the operation of passenger-only ferry service, including purchase, lease or rental of ferry vessels and dock facilities for the provision of transit service and other activities necessary to implement the plan. 2. Terminal locations to be served. 3. Project costs for providing service. 4. Revenues to be generated from tolls, locally collected revenues and other revenue sources. <p>Findings: 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. The legislature recognizes that if the state eliminates passenger-only ferry service on one or more routes, it should provide an opportunity for locally sponsored service and the department of transportation should assist in this effort. It is the intent of the legislature to encourage inter-local agreements to ensure passenger-only ferry service is reinstated on routes that the Washington state ferry system eliminates.</p>
36.57A.210	<p>As part of passenger-only investment plan, benefit areas may recommend some or all of the following revenue sources:</p> <ol style="list-style-type: none"> 1. Motor vehicle excise tax as provided in RCW 82.80.130. 2. Sales and use tax, as provided in RCW 82.14.440.

RCW	Provision
	<ul style="list-style-type: none"> 3. Tolls for passengers and packages, and where applicable, parking. 4. Charges or licensing fees for advertising, leasing space for services to ferry passengers and other revenue-generating activities. <p>Taxes may not be imposed without voter approval.</p>
36.57A.220	<p>A public transportation benefit area seeking funding for a passenger-only ferry route between Kingston and Seattle shall first receive approval from the governor after submitting a complete business plan to the governor and legislature by November 1, 2006. The business plan must include, at a minimum:</p> <ul style="list-style-type: none"> 1. Hours of operation 2. Vessel needs 3. Labor needs 4. Proposed routes 5. Passenger terminal facilities 6. Passenger rates 7. Anticipated federal and local funding 8. Coordination with WSF 9. Coordination with existing transit providers 10. Long-term operations and maintenance needs 11. Long-term financial plan

Marine Employees Labor Relations

RCW	Provision
47.64.006	<p>Public policy of the state to:</p> <ul style="list-style-type: none"> 1. Provide continuous operation of the ferry system at reasonable cost to users. 2. Efficiently provide levels of ferry service consistent with trends and forecasts of ferry usage. 3. Promote harmonious and cooperative relationships between the ferry system and its employees by permitting ferry employees to organize and bargain collectively. 4. Protect the citizens of this state by assuring effective and orderly operation of the ferry system. 5. Prohibit and prevent all strikes or work stoppages by ferry employees. 6. Protect the rights of ferry employees with respect to employee organizations. 7. Promote just and fair compensation, benefits, and working conditions for ferry system employees as compared with public and private sector employees in states along the west coast and B.C.
47.64.140	Prohibits strikes, work stoppages and lockouts.
47.64.280	<p>Establishes the three-member Marine Employees Commission to</p> <ul style="list-style-type: none"> 1. Adjust complaints, grievances and disputes between labor and management. 2. Provide for impasse mediation. 3. Provide salary surveys. <p>Members to be appointed by governor, subject to consent of the senate. One member is to be appointed from labor, one from industry and one from the public. Public member is chair. Salary survey is to be conducted prior to and for the purpose of collective bargaining.</p>
47.64.170	<p>Establishes schedule for collective bargaining.</p> <ul style="list-style-type: none"> 1. Must commence on or before 9-1 of every odd-numbered year. 2. Must be complete by 4-1 of the following year. 3. If not concluded by 4-1, the parties shall proceed to mediation. 4. Agreements must be complete by 9-1 of the even-numbered year preceding the biennial budget. <p>Governor shall submit to the legislature a request for funds or legislation to implement the agreement if the Director of the Office of Financial Management certifies before 10-1 that it is financially feasible. Legislature shall approve or reject the submission of the request for funds or necessary legislation as a whole. If rejected by the legislature, the agreement is not binding. If a significant shortfall in revenue occurs resulting in reduced appropriations to WSF, as declared by</p>

RCW	Provision
	the governor or the legislature, both parties must return to collective bargaining.
47.64.300	If agreement is not reached by 4-15, or upon recommendation of the mediator, all impasse items shall be submitted for arbitration, with issues for arbitration limited to those certified by the Marine Employees Commission. Final positions on matters to go to arbitration must be submitted no later than 10 working days before the hearing data.
47.64.310	An interest arbitration exercises a state function and is functioning as a state agency.
47.64.320	An arbitration decision is not binding on the legislature. Arbitrators are to take into consideration: <ol style="list-style-type: none"> 1. Past collective bargaining contracts. 2. The constitutional and statutory authority of the employer. 3. Stipulations of the parties. 4. The results of the salary survey. 5. Comparison of wages, hours, employee benefits, and conditions of employment of the involved ferry employees with those of public and private sector employees in states along the west coast & BC. 6. Changes in any of the foregoing circumstances during the pendency of the proceedings. 7. The limitations on ferry toll increases and operating subsidies as may be imposed by the legislature. 8. Other factors that are normally or traditionally taken into consideration.

Planning

RCW	Provision
47.06.010	Statewide multimodal transportation plan to include a state-owned component, including a component on ferries. The state-owned components and the state-interest components are to: <ol style="list-style-type: none"> 1. Be consistent with the state transportation policy plan and with each other. 2. Reflect public involvement. 3. Be consistent with regional transportation planning, high-capacity transportation planning, and local comprehensive plans. 4. Include analysis of intermodal connections and choices.
47.06.050	The ferry portion of the plan is to: <ol style="list-style-type: none"> 1. Establish service objectives for state ferry routes. 2. Forecast travel demand for the various markets served in the ferry system. 3. Develop strategies for ferry system investment that consider regional and statewide vehicle and passenger needs. 4. Support local land use plans. 5. Assure that ferry services are fully integrated with other transportation services. 6. Provide for maintenance of capital assets. 7. Provide for preservation of capital assets based on lowest life-cycle cost methodologies 8. Assess the role of private ferries operating under the authority of the utilities and transportation commission. 9. Coordinate ferry system capital and operational plans with these private operations. 10. Be consistent with the regional transportation plans for areas served by the state ferry system. 11. Be developed in conjunction with the ferry advisory committees.
47.06.140	The ferry plan is to establish level-of-service standards for state ferry routes of statewide significance and to consider the balance between movement of people and goods, and the needs of local communities using these facilities.

Budget Policies

SSB	Provision
SSB 6241	Marine Employees Commission: Develop system to prioritize caseload and report to legislature by 12-05. Ferry Financing Study: Authorize Joint Transportation Committee report to facilitate legislative discussions on the ferry system. Report due Jan. 1, 2007.

SSB	Provision
	<p>Passenger-Only Ferry Service: Established the eighteen-member passenger-only ferry service task force. (See passenger-only service section above.)</p> <p>Sidney Service: WSF is directed to continue service to Sidney.</p> <p>Fuel Costs: WSDOT, the Washington State Economic Revenue Forecast Council and OFM are to review and adopt a method of forecasting motor vehicle and special fuel prices, revenue and the amount of consumption. The report, is due December 1, 2006.</p> <p>Security Expenditures: Ferry security operations costs shall not be included as part of the operational costs that are used to calculate farebox recovery. WSF is to track security costs and expenditures.</p> <p>Electronic Fare System: WSF is to implement an electronic fare system, including the integration of the regional fare system (smart card). WSF is required to report each December and June on the implementation of electronic fares, with updates concluding the first December after full implementation.</p> <p>Project Reporting: WSF is required to report, on a quarterly basis beginning July 1, 2005, to OFM and the legislature the status of each project in the project lists regarding project scope, schedule and costs.</p>

Washington State Ferries Financing Study

Technical Appendix 3: Capital Program Prioritization and Terminal and Repair Facility Capital Projects Review



Prepared For:

Joint Transportation Committee
Washington State Legislature

Consultant Team:

Cedar River Group, LLC
Mirai Associates
Norway Hill Development
RL Collier Company

December 2006

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Executive Summary

This review of Washington State Ferries' (WSF) capital program prioritization process and of the terminal and repair facility capital projects is part of the Washington State Ferries Financing Study. The review is based on the 2005-07 biennium capital program, as adopted by the 2006 Legislature, and was conducted in association with staff from the Senate Transportation Committee, the House Transportation Committee, the Joint Transportation Committee and the Office of Financial Management (OFM).

Capital Program Prioritization Process

WSF's capital program provides funding for the preservation and improvement of twenty terminals, the Eagle Harbor repair facility and WSF's twenty-eight vessels. WSF has a sixteen-year capital program, with a legislatively approved project list adopted each biennium. WSF's capital program is part of the Washington State Department of Transportation's (WSDOT) capital budget. The only funds appropriated in the capital program are for the current biennium.

Capital Funding

The legislature appropriated \$244.2 million for the WSF capital program for the 2005-07 biennium. The anticipated capital expenditures in the 2005-21 time period are \$2.2 billion. WSF capital projects are one of three types: terminal, vessel or emergency repairs. Terminal and vessel projects are defined by WSF as either preservation or improvement projects.

Preservation Program

WSF's preservation program is designed to protect assets: "preserving the structural, mechanical and electrical integrity of infrastructure." Within the preservation program, WSF may replace an entire facility or vessel when it is not economically prudent to continue replacing the systems of the terminal or vessel or the asset's characteristics are no longer suited to meet service plan requirements. The preservation program also includes projects that:

- are necessary for regulatory compliance;
- improve program efficiency and effectiveness;
- result in cost savings or cost avoidance; and
- benefit customers and the public.

Life-Cycle Cost Model: WSF uses a life-cycle concept to identify investments needed to ensure its vessels and terminals are preserved. Systems and structures on vessels or at terminals are divided into two groups: vital systems (vital to the protection of people, the environment and infrastructure), and non-vital systems (all other systems). An estimated life is determined for each system and structure based on: (1) the date of initial installation or last major refurbishment, (2) a standard anticipated life for the type of

system or structure, and (3) modifications for actual condition based on location and inspections.

Life-Cycle Rating: WSF identifies a life-cycle rating for vital and non-vital systems to track performance. The life-cycle rating is the percentage of a vessel's or terminal's systems that are operating within their life-cycles at a particular point in time. This percentage is weighted by the cost of replacement so that the percentage reflects the overall cost of replacing the system when due. WSF tracks performance against measures recommended by the 2001 Joint Legislative Task Force on Ferries, which are to have by 2011 (now estimated to be 2015):

- 90 to 100 percent of vital systems operating within their life-cycle, and
- 60 to 80 percent of non-vital systems operating within their life-cycle.

Improvement Program

WSF's improvement program is designed to increase the ability of the ferry system to meet changes in demand. Improvement investments may be made to:

- increase the capacity of a terminal or vessel, as measured by the terminal's throughput capacity, and the vessel's vehicle and passenger carrying capacity; and
- provide riders with more mobility options.

WSF's improvement program is based on the premise that operations and ridership drive fleet size and deployment, which in turn drive terminal shoreside infrastructure.

Emergency Repairs

WSF's emergency repair program is designed to address unanticipated regulatory requirements or damage to a terminal or vessel.

Prioritization

WSF's Capital Committee, which includes the Chief Executive Officer and five other directors, is responsible for selecting projects to include in the capital program and oversees management of WSF's capital program.

To prioritize the discretionary elements of WSF's capital program, the Capital Committee utilizes the Priorities of Government, and what it considers expressions of legislative intent, particularly the recommendations of the 2001 Legislative Joint Task Force on Ferries. The legislature does not give WSF discretion in using Nickel and Transportation Partnership Act funds; these funds are available only for projects named by the legislature.

Terminal/Repair Facility Projects

WSF's 2005-21 biennia terminal capital program includes 67 projects with separate project identification numbers (PINs) with a total budget of \$142.6 million for the 2005-07 biennium and \$1.2 billion for the 2005-21 biennia. Forty-three of the projects are for

specific facilities and 24 are systemwide projects. Of the 67 projects, 24 are classified as improvement projects and 43 as preservation projects.

Terminal/Repair Facility Projects

Projects	# PINs	Improvement	Preservation	05-07 (\$000s)	05-21 (\$000s)
Terminals/Repair Facility*	43	22	21	\$118,266	\$1,091,310
Systemwide Projects	24	2	22	24,382	124,663
Total	67	24	43	\$142,648	\$1,215,973

*Includes systemwide catch-up preservation project

Appendix A includes a review of projects at each terminal.

Preservation Projects

There are 43 preservation projects with a budget of \$79.2 million in the 2005-07 biennium and \$699.7 million in the 2005-21 biennia.

Budget Affecting Life-Cycle of Systems and Structures: WSF reports that in 2005, 73 percent of terminal vital systems and 44 percent of non-vital systems were operating within their life-cycle. WSF uses these life-cycle ratings and the impact of the preservation budget on these measures as a key budget justification. The preservation program includes systemwide projects and expenses within terminal projects (i.e., right-of-way acquisition and interim preservation) that do not affect life-cycle ratings. In the 2005-07 biennium, 58 percent of the budget as shown in the WSF life-cycle model affects life-cycle ratings and 42 percent does not. For the 2005-21 biennia, 74 percent of the budget affects life-cycle ratings and 26 percent does not.

Life-Cycle Cost Model: A key element in the life-cycle model is keeping the inventory up-to-date to reflect condition inspections and the life-cycle of new steel and concrete structures that are replacing older timber structures. These updates have not been regularly done, with WSF showing life-cycles as low as 25 years for steel piling as an example. Also, when developing the initial inventory, WSF did not have the ability to inspect each of the 254 items in the “systems and utilities” category (such as water systems, sewer systems, etc.). So it arbitrarily assigned them all (except the point-of-sale system) a standard life of twenty years. In most cases, the system or utility is not ready to be replaced at the end of twenty years even though the results are being calculated into the percentage of systems operating within their life-cycle.

Not updating the inventory and including items that are not replaced at the end of the “standard” life-cycle make the model less useful as a tool for budget planning or performance reporting, which runs the risk of presenting inaccurate and overstated preservation projections. For example, the consultants asked WSF to run various scenarios adjusting, for example, the standard life of steel structures from 25 to 30 years. This adjustment alone makes a 3 percent difference in the percentage of vital systems operating within their life-cycle.

The consultants also reviewed the actual condition of the terminals based on WSDOT bridge inspections. These inspections indicate that the terminals are in good condition, and present a different picture from that suggested by the life-cycle model.

Preservation Replacement Projects: The preservation projects include replacement or significant additions to six facilities: Anacortes, Bainbridge Island, the Eagle Harbor repair facility, Keystone, Port Townsend and Seattle Colman Dock.

The preservation replacement project budgets include 64 percent of the terminal related non-life-cycle expenses in the 2005-07 biennium and 74 percent in the 2005-21 biennia. The high percentage of non-life-cycle expenses in these projects is because they share expenses with companion improvement projects, or are similar to improvement projects. Also, the replacement of structures before their due date to accommodate an improvement project is categorized by WSF as a life-cycle rather than a non-life-cycle expenditure. In addition, although not identified separately in the budget and thus not counted as non-life-cycle costs, some replacement project budgets include expenses for master plans and studies.

Systemwide Projects: The preservation program includes 22 systemwide preservation projects with budgets totaling \$24 million for the 2005-07 biennium and \$122.4 million for the 2005-21 biennia. The systemwide preservation projects are all for non-life-cycle costs and include all of the overhead expenses for terminal projects. None of the overhead expenses are attributed to the improvement program.

Budgets: The budgets for preservation projects that are intended to preserve systems and structures, are based on the life-cycle cost model. These budget projections become the project budget and are then categorized into preliminary engineering, right-of-way, and construction budgets. The amount being spent on preservation that affects the life of structures and systems is overstated in the life-cycle cost model because the model does not include expenditures for master planning and other non-life-cycle expenses, which can be substantial.

Improvement Projects

There are 22 terminal improvement projects with a budget of \$63.4 million in the 2005-07 biennium and \$516.3 million in the 2005-21 biennia. The improvement budget is primarily devoted to the Anacortes, Bainbridge Island, Edmonds, Mukilteo and Seattle terminals.

Connection to Draft Long-Range Strategic Plan: WSF's improvement program is based on the premise that operations and demand for ferry service drive fleet size and deployment, which, in turn, drive terminal shoreside infrastructure. The Draft Long-Range Strategic Plan 2006-30 provides a ridership forecast and a fleet deployment and terminal improvement plan to accommodate the projected ridership.

Flexibility: The Draft Long-Range Strategic Plan includes a staggered approach to increasing the capacity of the fleet. Unlike the vessel projects, the terminal improvement projects have limited flexibility; they are being planned for the projected ridership with large capital infrastructure investments that are not intended in most cases to be phased with actual ridership but rather with funding availability.

Vehicular Demand: The increase in capacity of the system for terminals is primarily driven by the projected increases in vehicular demand. The primary impact on the terminals is on the size of the vehicle holding areas, many of which are on trestles over water, which are expensive to construct and maintain.

The level of service standard for vehicles in the Draft Long-Range Strategic Plan is expressed as boat waits, except for the San Juan Island routes where the level of service standard is expressed as percentage of daily capacity. The design guidelines used for terminal improvement and replacement projects is based on a different level of service standard, characterized by the minutes of delay for a vehicle on the approach roadways prior to passing the tollbooth. This design guideline has resulted in larger vehicle holding areas than would be needed under boat wait scenarios.

“Peak of the Peak” Planning: The Draft Long-Range Plan also anticipates a larger percentage increase in walk-on passengers, especially during commute periods. The level of service standard for walk-on passengers is a zero boat-wait throughout the system, which means that passenger service is planned on a “peak of the peak” basis, i.e., for the most congested sailing of the day. The terminal buildings are also being sized to accommodate anticipated increases in ridership and are based on the “peak of the peak” basis.

Life-Cycle Costs: WSF has not done life-cycle costing for all of the proposed terminal improvement or replacement projects, with total operating and capital maintenance costs projected over the life of the terminal. Operating costs of the new terminals will be higher than for the current smaller terminals. The Draft Long-Range Strategic Plan includes assumptions about increases in operating costs, but does not provide detailed information about these costs. So it is not clear to what extent those assumptions are in line with the terminal plans.

Cost-Benefit Analysis: WSF has not undertaken a cost-benefit analysis of systemwide operating changes that might reduce capital investments, such as a modification to the first-come-first-served loading policy. They have also not considered tariff policy and level of service standard adjustments as ways to manage demand. WSF has undertaken limited cost-benefit analysis on individual projects.

Ancillary Revenues: Ancillary revenues from concessions and leases at terminals help improve WSF’s operating income and are part of the revenue calculation in determining farebox recovery. In some of the terminal projects, WSF is allocating additional space for concessions in anticipation of additional operating revenue. WSF’s analysis also includes

the period in which anticipated revenues would pay back the initial capital investment. These are risky investments with paybacks that may or may not materialize.

Community Requirements: As with the preservation replacement projects, local community requirements are impacting ferry terminal planning and costs.

Joint Use Transit Facilities: WSF is investing in joint use transit facilities to encourage increased walk-on ridership by providing terminal access to other transit agencies. The costs incurred are in most cases being borne by WSF.

Recommendations

The consultants have developed the following recommendations for consideration by the legislature. These recommendations are based on the goals established in SSB 6241, which mandated this ferry financing study.

1. Capital Program Prioritization Process Recommendations (see chart, p.8)

- a. WSF capital projects should conform to the OFM definition of a capital project, with maintenance excluded.
- b. WSF preservation and improvement capital projects should conform to the OFM definitions of these categories.
- c. WSF should develop a clear capital prioritization process.

2. Terminal Preservation Project Recommendations

- a. Update the terminal life-cycle cost model to make it a better planning tool.
- b. Develop a WSF terminal condition rating performance measurement system.
- c. Allocate systemwide overhead projects between preservation and improvement projects.
- d. Include only life-cycle related expenses in facility-specific preservation projects.
- e. Exclude non-life-cycle costs from the catch-up preservation project.

3. Terminal Replacement and Improvement Projects

- a. Replacement preservation and improvement projects should be combined as one improvement program category.
- b. Priority should be given to flexible terminal improvement plans and projects.
- c. A ridership performance measure tied to the capital plan should be developed.
- d. WSF should be required to undertake systematic cost-benefit analysis.
- e. WSF should be required to provide a complete life-cycle cost analysis.
- f. WSF should be required to provide a business plan supporting investments intended to generate ancillary revenues.
- g. WSF should identify funding required to complete construction when master plans are developed.

- h. WSF should make the legislature aware of costs incurred to meet local concerns.
- i. WSF should make the legislature aware of costs incurred for joint use transit facilities.
- j. The legislature should require expert review of WSF projects.

4. Recommendations for Improvement and Preservation Projects

- a. WSF should comply with OFM requirements for a predesign study.

Implications for Ferry Financing

1. In order to proceed with ferry financing, an estimate of capital resources needed to preserve and improve terminals is necessary. Given the findings and recommendations in this report, it is difficult to assess these financing needs until the life-cycle cost model is updated and the recommended cost-benefit analysis for terminal improvement projects is completed.
2. Several of these recommendations will affect the actual and projected farebox recovery percentage.

Recommendation 1: Proposed Modifications to WSF Capital Program Definitions

		Current	Proposed
Capital Project Definition		Interim preservation included	Project to construct either new facilities or significant long-term renewal improvements to existing facilities.
Capital Project Category Definitions	Preservation	<ol style="list-style-type: none"> 1. Preserve the structural, mechanical and electrical integrity of infrastructure 2. Improve program efficiency and effectiveness 3. Regulatory compliance 4. Cost saving or cost avoidance 5. Benefit customers and the public 	<ol style="list-style-type: none"> 1. Maintain, preserve and extend the life of facilities and assets, and does not meet the definition of an improvement.
	Improvement	<ol style="list-style-type: none"> 1. Meet changes in demand and increase capacity 2. Provide mobility options 	<ol style="list-style-type: none"> 1. Meet changes in demand and increase capacity 2. Provide mobility options 3. Improve program efficiency and effectiveness 4. Cost saving or cost avoidance 5. Benefit customers and the public
	Emergency Repair	Address damage and/or unanticipated regulatory requirements.	Address damage and/or unanticipated regulatory requirements.
Capital Project Type Definitions	Preservation	<ol style="list-style-type: none"> 1. Life-Cycle Cost Model or Condition Rating 2. Non-life-cycle costs such as: <ul style="list-style-type: none"> • Master plans • Property acquisition • Interim preservation • Emergency generators • Placeholder preservation 3. Replacement projects 4. Systemwide administrative projects 5. Systemwide revenue enhancement projects 	<ol style="list-style-type: none"> 1. Life-Cycle Cost Model or Condition Rating 2. Proportionate share of systemwide administrative projects
	Improvement	<ol style="list-style-type: none"> 1. Master plans 2. Terminal expansions 	<ol style="list-style-type: none"> 1. Terminal expansions and replacements 2. Master plans 3. Property acquisition 4. Emergency generators 5. Proportionate share of systemwide administrative projects 6. Systemwide revenue enhancement projects

Section One Introduction

This review of Washington State Ferries' (WSF) capital program prioritization process and of the terminal and repair facility capital projects is part of the Washington State Ferries Financing Study. The review is based on the 16 year capital program from the 2006 legislature, and includes the consultants' observations and recommendations.

This review was conducted in association with staff from the Senate Transportation Committee, the House Transportation Committee, the Joint Transportation Committee and the Office of Financial Management (OFM). It included interviews with WSF Finance and Administration, and Terminal Engineering staff; and a review and assessment of the systems inventory, annual condition reports, and life-cycle model for each facility. We also reviewed the budgets, schedule, and scope modifications for each project.

Section Two

Capital Program Prioritization Process

WSF's capital program provides funding for the preservation and improvement of WSF's twenty terminals, the Eagle Harbor repair facility, and WSF's twenty-eight vessels.

WSF has a sixteen-year capital program, with a legislatively approved project list adopted each biennium. The project list, maintained by the Legislative Evaluation and Accountability Program (LEAP) Committee,¹ includes all prior project expenditures for those projects still on the list, project appropriations for the current biennium, and projected project budgets for the next seven biennia. The only funds appropriated are for the current biennium.

WSF's capital program is part of the Washington State Department of Transportation's (WSDOT) capital budget. The WSDOT capital (and operating) budget is submitted to the Governor through OFM for review and approval prior to its submittal to the legislature.

A. Capital Funding

The legislature appropriated \$244.2 million for the WSF capital program in the 2005-07 biennium. The anticipated capital expenditures in the 2005-21 time period are \$2.2 billion. Fifty-eight percent of the 2005-07 biennium capital budget and 54 percent of the 2005-21 biennia budget is for terminal projects. Forty percent of the 2005-07 biennium budget and 43 percent of the 2005-21 biennia budget is for vessels. Terminal and vessel projects are defined by WSF as either preservation or improvement projects. The remainder of the capital program is for emergency repairs.

Table 1. WSF Capital Project Definitions

Preservation Projects	Improvement Projects	Emergency Repairs
1. Preserve the structural, mechanical and electrical integrity of infrastructure 2. Improve program efficiency and effectiveness 3. Regulatory compliance 4. Cost saving or cost avoidance 5. Benefit customers and the public	1. Meet changes in demand and increase capacity 2. Provide mobility options	Address damage and/or unanticipated regulatory requirements.

¹ LEAP is a joint, bipartisan legislative committee created by the Washington State Legislature in 1977. It is the Legislature's independent source of information and technology for developing budgets, communicating budget decisions, tracking budget and revenue activity, consulting with legislative committees, and providing analysis on special issues in support of legislative needs. (www.leg.wa.gov)

Terminal preservation projects account for 32 percent of the total capital program for the 2005-07 biennium and 31 percent for the 2005-21 biennia, and vessel preservation projects 40 percent and 43 percent respectively. No vessel improvement funds are included in the 2005-21 biennia capital program. (The four new vessels in WSF's capital program are categorized by WSF as preservation projects.) Terminal improvements account for 26 percent of the 2005-07 biennium budget and 23 percent of the 2005-21 biennia budget.

Table 2. 2006 LEAP Project List

	(\$000s)				
	Prior	05-07	%	05-21	%
Terminal Preservation	55,833	78,895	32%	699,342	31%
Vessel Preservation	85,378	97,532	40%	967,675	43%
Terminal Improvements	29,634	63,753	26%	516,631	23%
Vessel Improvements	0	0	0%	0	0%
Emergency Repairs	2,579	4,000	2%	56,795	3%
WSF Capital Program	173,424	244,180		2,240,444	

Source: WSF Legislative Tour Notebook

Sources of funding for WSF's capital program include:

- **The 2005 Transportation Partnership Act:** The 2005 Transportation Partnership Act is expected to provide 9 percent of WSF's capital funding for the 2005-21 biennia with no funding for the 2005-07 biennium.
- **The 2003 Nickel package:** Fourteen percent of all funding during the 2005-21 time period is anticipated to come from Nickel funds, including 20 percent of the 2005-07 biennium appropriation.
- **Pre-existing Funds:** Ongoing funds from sources other than these packages are referred to as pre-existing funds.² Seventy-seven percent of WSF's capital program for the 2005-21 biennia is funded through pre-existing funds, including 80 percent of the 2005-07 biennium appropriation.

Table 3. 2006 LEAP List Funding

	(\$000s)				
	Prior	05-07	%	05-21	%
Pre-Existing Funds	158,379	195,940	80%	1,734,000	77%
Nickel	15,045	45,240	20%	320,534	14%
Transportation Partnership Act			0%	185,910	9%
Total	173,424	244,180		2,240,444	

Source: WSF Legislative Tour Notebook/March 2006 LEAP list

² The 2003 Transportation Funding Package (Nickel) enacted by the 2003 Legislature increased the gas tax by \$0.05 per gallon. The Nickel package also included an additional 0.3% sales tax on new and used vehicles and a \$20 license plate number retention fee, with the funds generated added to the Multimodal Account. The 2005 Transportation Funding Package (Transportation Partnership Act) passed by the 2005 Legislature increased the gas tax by \$0.095 per gallon phased in over four years.

B. Preservation Program

WSF's preservation program is designed to protect assets, with WSF's definition being "preserving the structural, mechanical and electrical integrity of infrastructure. Preserving means replacing or refurbishing terminal and vessel systems when they reach the end of their life-cycles or replacing the terminal or vessel with an asset of similar characteristics" (WSF Construction Program W Description, March 7, 2006).

Within the preservation program WSF may replace an entire facility or vessel. WSF states in its budget materials: "A terminal or vessel may be replaced in its entirety when it is not economically prudent to continue replacing the systems of the terminal or vessel or the asset's characteristics are no longer suited to meet service plan requirements" (WSF Construction Program W Description, March 7, 2006). Service plan requirements are established by WSF's long-range plan.

WSF's definition of its preservation program also includes projects necessary for regulatory compliance. WSF also includes projects that: (1) improve program efficiency and effectiveness ("These investments control the quality of the delivery of the capital program; for example, using life-cycle analysis to allocate capital preservation resources."); (2) result in cost savings or cost avoidance ("for example, installing more fuel-efficient engines"); and (3) benefit customers and the public ("for example, making wireless internet access available at terminals and on vessels") (WSF Construction Program W Description, March 7, 2006).

1. Preservation: Life-Cycle Cost Model

WSF uses a life-cycle concept to identify investments needed to ensure its vessels and terminals are preserved. The life-cycle cost models used by WSF, one for vessels and one for terminals, were reviewed in the 2001 *Washington State Ferries Capital Program Performance Audit*. (See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for further information.)

The terminal and vessel life-cycle cost models rely on the same concepts and are based on an inventory of the systems and structures on a vessel or at a terminal. Systems and structures are divided into two groups:

- Vital systems, defined as those "determined by regulatory agencies as vital to the protection of people, the environment and infrastructure" (WSF Construction Program W Description, March 7, 2006); and
- Non-vital systems (all other systems).

An estimated life is determined for each system and structure based on: (1) the date of initial installation or last major refurbishment, and (2) a standard anticipated life for the type of system or structure. Important factors in the life-cycle cost model are as follows.

- The ***anticipated life*** of a particular system or structure is to be modified based on actual condition, as determined by maintenance or inspection reports and/or by

the vulnerability of the location of the structure or system (i.e., an outer dolphin is subject to more wear than an inner dolphin).

- A **cost for the replacement** of the structure or system at the end of its anticipated life is estimated in the model based on standard engineering estimates adjusted to the year of anticipated expenditure.
- A **life-cycle rating** is the percentage of a vessel's or terminal's systems that are operating within their life-cycles at a particular point in time. This percentage is weighted by the cost of replacement so that the percentage reflects the overall cost of replacing the system when due. This is in conformance with the recommendations of the 2001 performance audit. (See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for a summary of the 2001 performance audit.)

WSF has used the life-cycle ratings for vital and non-vital systems to track performance against measures recommended by the 2001 Joint Legislative Task Force on Ferries. The Task Force recommended that the legislature provide sufficient funding to allow WSF, by 2011 (now estimated to be 2015), to have:

- 90 to 100 percent of its vital systems operating within their life-cycle, and
- 60 to 80 percent of non-vital systems operating within their life-cycle.

(See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for a summary of the Task Force report.)

As noted in the 2001 Capital Program Performance Audit, "the integrity of the information developed from the models is directly related to the accuracy of the models' inventory" (p.23). The performance audit indicated that "vessels and terminals are subject to various third party inspections and are also routinely inspected by WSF personnel. . . . When planned inspections or incidents occur that impact lives of a specific system or structure, this information is updated in the life-cycle cost model" (p. 24).

WSF demonstrates its implementation of this key element of the life-cycle cost model process in the narrative and graphic (Figure 1) on the next page.

2. Preservation: Replacement

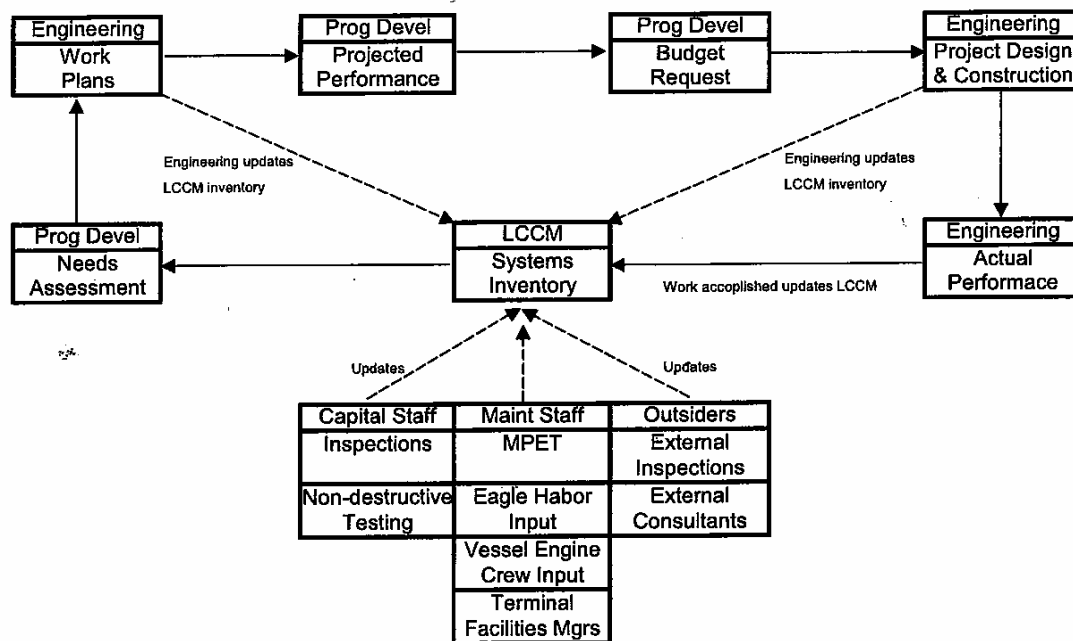
Under its preservation program, WSF replaces an asset when it is no longer economically prudent to replace systems or structures or when the characteristics of the asset are no longer suited to meet service plan requirements. Under WSF's definition of preservation, replacement projects may add additional capacity to meet service requirements. For example, as a preservation project, WSF is planning to replace four steel electric vessels that have a 65-vehicle capacity with four new expanded-Issaquah-class vessels that accommodate 144 vehicles³. Service requirements are established in WSF's Draft Long-Range Strategic Plan, which is also used to determine the scope of improvement projects.

³ WSF states that these larger vessels are intended to replace capacity lost from the retirement of five vessels and the installation of Sub-chapter W life-saving equipment throughout the fleet. (WSF Dec. 2006)

Figure 1. WSF Preservation Using Performance-Based Budgeting

- The engineering staff conducts inspections of assets and performs non-destructive testing to verify the accuracy of the life-cycle cost model data in portraying the status of systems.
- The maintenance staff provides input that adjusts life-cycle cost model data to the actual status of the systems.
- WSF employs external inspectors and consultants to evaluate the accuracy of life-cycle cost model data.

Life Cycle Cost Model Quality Cycle



Source: Washington State Ferries, Construction Program W Capital Preservation Using Performance-Based Budgeting, Sept. 2005, p. 13

3. Preservation: Other Projects

WSF also includes in its preservation program projects necessary for regulatory compliance. In addition, WSF includes projects that improve program efficiency and effectiveness, result in cost savings, and/or provide benefits to customers and the public. These include a number of systemwide projects, such as implementation of the electronic fare system.

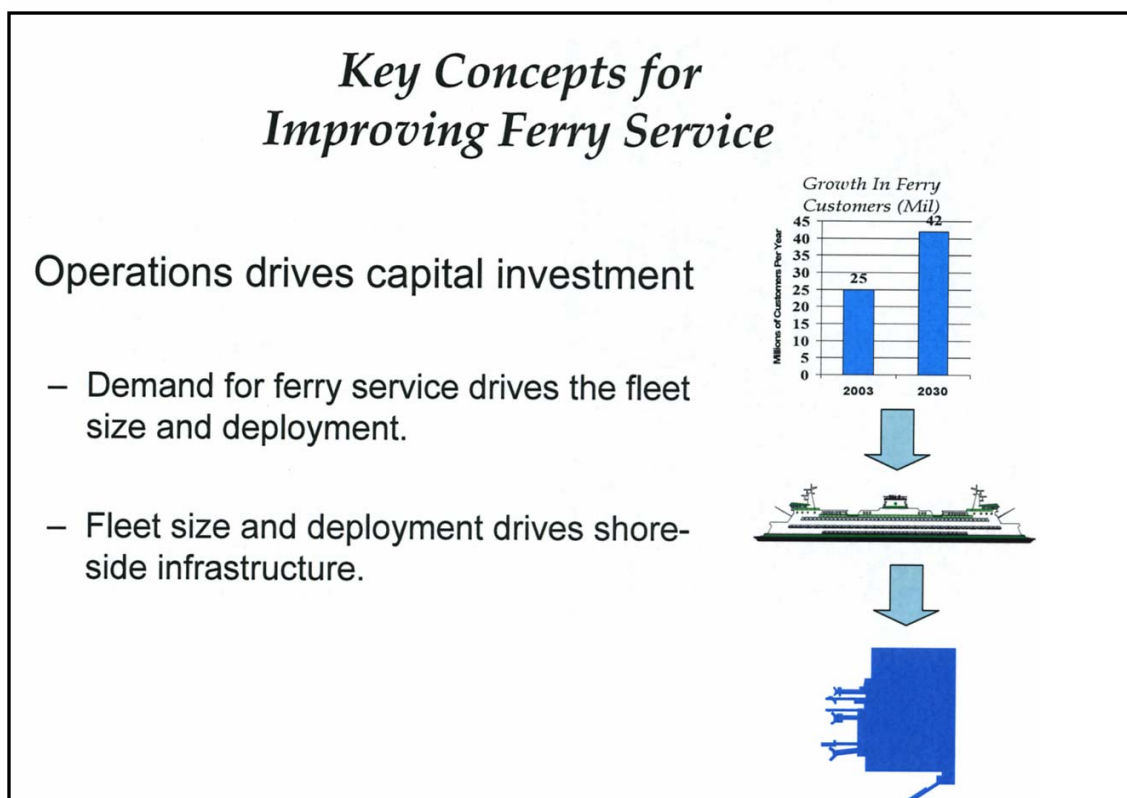
C. Improvement Program: Long-Range Strategic Plan

WSF's improvement program is designed to "increase the ability of the ferry system to meet changes in demand. . . . Improvement investments may be made to increase the capacity of a terminal or vessel. Capacity increases are measured in terms of the terminal's throughput capacity and the vessel's vehicle and passenger carrying capacity. Improvement investments may be made to provide riders with more mobility options" (WSF Construction Program W Description, March 7, 2006, p. 9).

WSF uses its long-range plan to determine the need for improvement investments that increase capacity and to determine the scope of the projects. The 2005-21 biennial capital program was developed prior to the release of the *Washington State Ferries Draft Long-Range Strategic Plan 2006-2030*. (See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for a review of the Draft Plan.) The Plan's ridership and service projections should be more fully reflected in the FY 2007-23 capital program that will be presented to the legislature in January 2007.

WSF's improvement program is based on the premise that operations and ridership demand for ferry service, as determined by the long-range plan, drive fleet size and deployment. Fleet size and deployment in turn drive terminal shoreside infrastructure. WSF demonstrates this concept in Figure 2, below.

Figure 2. Improvement Program



D. Emergency Repairs

WSF's emergency repair program is designed to "address unanticipated regulatory requirements or damage to a terminal or vessel that is not the result of deterioration or wear that could be reasonably anticipated" (WSF Construction Program W Description, March 7, 2006). The emergency repairs budget serves as a reserve account, with the allocated amount based on increases for inflation.

E. Prioritization

WSF's Capital Committee is responsible for selecting projects to include in the capital program. The Committee includes WSF's Chief Executive Officer, Chief Financial Officer, Director of Operations, Director of Maintenance, Director of Terminal Engineering and Director of Vessel Engineering. This same committee oversees management of WSF's capital program.

The projects selected by this Committee are placed on a proposed project list, which is submitted to OFM and the governor, and then to the legislature for consideration in the transportation budget. To prioritize the discretionary elements of WSF's capital program, the Capital Committee utilizes the Priorities of Government and what it considers expressions of legislative intent, particularly the recommendations of the 2001 Legislative Joint Task Force on Ferries. The legislature does not give WSF discretion in using Nickel and Transportation Partnership Act funds; these funds are available only for projects named by the legislature.

WSF uses information from its life-cycle cost models to prioritize preservation work intended to preserve structures and systems. A 2004 WSF report notes that this prioritization process "is presently more an art than a science, requiring an understanding of several factors: the service needs of individual routes; the anticipated . . . level of funding that will be available . . . ; the possibility of securing permits in a timely manner . . . ; the ability to deliver a project within a specified time frame . . . ; and reconciliation of the project delivery cycle . . . and the state's two year funding cycle" (Life-Cycle Based Programming of Ferry Terminal Preservation, July 8, 2004, pp. 8-9).

Project selection (among projects intended to preserve systems and structures) is also guided by a preservation strategy that places top priority on failed structures or systems, the second priority on preserving vital systems and structures, and the lowest priority on preserving non-vital systems and structures. These priorities are balanced to ensure progress toward the Joint Legislative Task Force on Ferries preservation goals of 90 to 100 percent of vital systems and structures and 60 to 80 percent of non-vital systems and structures operating within their life-cycles.

For replacement and improvement projects, prioritization is based in part on the recommendations of the 2001 Joint Legislative Task Force on Ferries. For the 2001-03 biennium, the Task Force recommended funding the Mukilteo and Anacortes terminal

projects that address preservation and multimodal needs (Joint Task Force Report, p. 14). The priorities also reflect Nickel and Transportation Partnership specified projects.

Section Three

Terminal/Repair Facility Projects

WSF's 2005-21 biennia terminal capital program includes 67 projects with separate project identification numbers (PINs) with a total budget of \$142.6 million for the 2005-07 biennium and \$1.2 billion for the 2005-21 biennia. Forty-three of the projects are for specific facilities and 24 are systemwide projects for items such as server infrastructure. Of the 67 projects, 24 are classified as improvement projects and 43 as preservation projects.

Table 4. Terminal/Repair Facility Projects

Projects	# PINs	Improvement	Preservation	05-07 (\$000s)	05-21 (\$000s)
Terminals/Repair Facility*	43	22	21	\$118,266	\$1,091,310
Systemwide Projects	24	2	22	24,382	124,663
Total	67	24	43	\$142,648	\$1,215,973

*Includes systemwide catch-up preservation project

As illustrated in Table 5, more than half of the 2005-07 biennium capital budget and the 2005-21 biennia budget is for projects at Anacortes, Bainbridge Island, Mukilteo, Seattle Colman Dock, Eagle Harbor repair facility, and systemwide projects.

**Table 5. Terminal Capital 2005-07 Budget,
By Location***

(\$000s)					
	05-07	%	05-21	%	
Anacortes	30,844	22%	119,857	10%	
Systemwide	24,382	17%	124,663	10%	
Bainbridge	21,867	15%	178,277	15%	
Eagle Harbor	15,617	11%	37,368	3%	
Mukilteo	14,528	10%	130,873	11%	
Seattle	9,043	6%	228,912	19%	> ½ budget
Friday Harbor	7,521	5%	22,676	2%	
Southworth	3,704	3%	31,493	3%	
Keystone	2,200	2%	31,231	3%	
Lopez	3,279	2%	17,092	1%	
Port Townsend	2,959	2%	37,293	3%	
Edmonds	1,500	1%	57,607	5%	
Kingston	987	1%	29,334	2%	
Orcas	967	1%	12,851	1%	
Tahlequah	1,443	1%	5,334	0%	
Vashon	850	1%	44,723	4%	
Bremerton	90	0%	30,602	3%	

	05-07	%	05-21	%
Clinton	289	0%	38,792	3%
Fauntleroy	150	0%	24,802	2%
Point Defiance	368	0%	4,338	0%
Shaw	60	0%	7,855	1%
Total	142,648		1,215,973	

*Distributes the catch-up preservation project to affected terminals

The 24 improvement projects for the 2005-07 biennium have budgets of \$63.4 million (44% of the total), and the 43 preservation projects have budgets of \$79.2 million (56% of the total). For the 2005-21 biennia the improvement project budgets are \$516.3 million (42% of the total), and the preservation budgets are \$699.7 million (58% of the total).

Table 6. Preservation and Improvement Capital Budgets

(\$000s)				
Type	05-07	%	05-21	%
Improvement	\$63,443	44%	\$516,321	42%
Preservation	79,205	56%	699,652	58%
Total	\$142,648		\$1,215,973	

Appendix A includes a review of projects at each terminal. Over several weeks in August and September 2006, the consultants, along with legislative staff, conducted a series of interviews with the project management team for various terminal projects. The appendix includes for each terminal the 2005-21 biennia capital projects, a review of scope, schedule and budget changes for the projects, a summary of project life expenditures to date, issues or risks identified by WSF, the condition rating of each terminal from the WSDOT bridge inspections, and consultant observations.

As an overview, the consultants note that:

- Design work is typically done in-house by WSF engineers for smaller terminal projects. Consulting engineers and architects are retained for larger projects but overseen and managed by WSF staff.
- Project management is typically performed by WSF staff except for projects of significant size and/or complexity, where a combined team of WSF staff and outside consulting project managers may be used.
- At the project management level, the scope appears to be largely pre-determined by the capital planning process. Mid-project scope changes are approved internally by the WSF Capital Committee.
- Cost estimates are typically performed internally by WSF staff at 15 percent, 30 percent, 60 percent and 90 percent completion of design documents. Where an outside architect or engineer is used, that professional may perform these cost estimates.
- Value engineering is typically performed by WSF and driven by findings from the cost estimates.

A. Preservation Projects

There are 43 preservation projects with a budget of \$79.2 million in the 2005-07 biennium and \$699.7 million in the 2005-21 biennia (see Table 7 below). of the 2005-07 biennium preservation budget, sixty-five percent (65%) is for systemwide projects, the Eagle Harbor repair facility, and the Bainbridge Island terminal. Of the 2005-21 biennia preservation budget, thirty-nine percent (39%) is for the Seattle terminal and systemwide projects.

Table 7. Terminal Preservation Projects

(\$000s)					
PIN	Project	05-07	%	05-21	%
902019V	Anacortes Terminal Preservation	300	0%	42,699	6%
930513B	Bainbridge Island Terminal Preservation	11,225		65,436	
930513D	Bainbridge Terminal Food Service Improvement	310		310	
	<i>Bainbridge Total</i>	<i>11,535</i>	<i>15%</i>	<i>65,746</i>	<i>9%</i>
930410R	Bremerton Terminal Preservation	90	0%	22,746	3%
952516H	Clinton Terminal Preservation	289	0%	10,174	1%
900040N	Eagle Harbor Terminal Preservation	15,617	20%	37,368	5%
900005F	Fauntleroy Ferry Terminal Preservation			24,302	
900005L	Fauntleroy Terminal Preservation	150		500	
	<i>Fauntleroy Total</i>	<i>150</i>	<i>0%</i>	<i>24,802</i>	<i>4%</i>
900028Q	Friday Harbor Terminal preservation	7,121	9%	21,676	3%
902017J	Keystone Alternative	2,200	3%	31,231	4%
910414N	Kingston Terminal Preservation	987	1%	25,233	4%
900022G	Lopez Terminal Preservation		0%	11,933	2%
900026L	Orcas Terminal Preservation	917	1%	7,857	1%
900001F	Point Defiance Terminal Preservation	368	0%	4,032	1%
900012D	Port Townsend Terminal Preservation	2,959	4%	23,865	3%
900010A	Seattle Terminal Preservation	2,521	3%	149,619	21%
900024E	Shaw Terminal Preservation	60	0%	5,839	1%
916008N	Southworth Terminal Preservation	1,554	2%	16,122	2%
90002E	Tahlequah Terminal Preservation	200	0%	4,091	1%
900006N	Vashon Terminal Preservation	850	1%	33,978	5%
999940D	Catch-up Preservation	7,465	9%	38,199	5%
966620D	Systemwide ADA Support	75		809	
966640D	Systemwide Aerial Photos	78		762	
989930F	Systemwide Customer Travel Inquiry	300		2,113	
989930E	Systemwide Emergency Management Comm	240		1,505	
989920X	Systemwide Miscellaneous Terminal Projects	5,626		48,235	
9829920K	Systemwide Movable Bridge Modifications	700		1,050	
966620E	Systemwide Operations Construction Support	1,323		12,422	
977731A	Systemwide Planning and Special Studies	1,367		14,105	
966640Q	Systemwide Point of Sale/Regional Fare	3,492		3,492	
966640I	Systemwide Revenue Control System	107		1,313	
989930A	Systemwide Server Infrastructure	125		1,102	

PIN	Project	05-07	%	05-21	%
989930D	Systemwide SMS Enhancements	725		1,950	
999920A	Systemwide steel piling inventory account	54		514	
966640F	Systemwide Terminal Design Standards	234		2,089	
966650A	Systemwide Terminal Phone System Replace	200		988	
989930B	Systemwide Terminal Physical Security Infra	7,894		21,661	
989930G	Systemwide Terminal Physical Security Planning	550		2,254	
999940C	Systemwide Terminal Planning/Design	326		3,183	
999976T	Systemwide Terminal Work Orders by Auditors	96		871	
966620C	Systemwide Toxic Waste Disposal	50		440	
966650B	Systemwide WSF Staff Relocation	300		300	
966650C	Systemwide Terminal Communications (IT)	160		1,284	
	<i>Systemwide Total</i>	<i>24,022</i>	<i>30%</i>	<i>122,442</i>	<i>18%</i>
	Total	79,205		699,652	

1. Terminal Preservation Projects – Life-Cycle and Non-Life-Cycle

As discussed in Section 2.b.(1) above, WSF's performance measure for terminal preservation is the percentage of vital and non-vital systems and structures that are operating within their life-cycle. WSF's performance goal is to have 90 to 100 percent of vital systems and structures, and 60 to 80 percent of non-vital systems and structures, operating within their life-cycle by 2015.

WSF uses life-cycle ratings as a key justification for the preservation budget, projecting the impact on life-cycle ratings of planned projects. For example, as shown in Table 8 below, the percentage of vital systems operating within their life-cycle at the Eagle Harbor repair facility is projected to increase from 29 percent in the 2005-07 biennium to 100 percent in the 2007-09 biennium with the planned preservation project.

Table 8. Life-Cycle Rating Projections: Vital/Non-Vital Systems

Facility	Start		05-07		07-09		09-11		11-13		13-15	
	Vital	Non	Vital	Non	Vital	Non	Vital	Non	Vital	Non	Vital	Non
Anacortes	72%	19%	82%	19%	84%	77%	83%	98%	87%	99%	98%	98%
Bainbridge	95%	23%	92%	28%	97%	35%	97%	93%	97%	90%	97%	88%
Bremerton	79%	92%	78%	92%	78%	98%	84%	98%	95%	98%	87%	97%
Clinton	100%	74%	100%	75%	100%	97%	100%	89%	100%	89%	99%	89%
Eagle Harbor	57%	53%	29%	26%	100%	59%	100%	55%	100%	55%	100%	55%
Edmonds	98%	66%	98%	66%	85%	86%	84%	81%	72%	81%	62%	81%
Fauntleroy	73%	11%	73%	9%	73%	31%	73%	31%	73%	31%	38%	31%
Friday Harbor	82%	86%	86%	90%	85%	95%	85%	84%	83%	73%	91%	83%
Keystone	26%	45%	30%	45%	30%	66%	100%	95%	100%	100%	100%	100%
Kingston	96%	77%	96%	77%	96%	83%	93%	85%	94%	85%	95%	85%
Lopez	72%	51%	58%	51%	66%	51%	65%	9%	71%	3%	71%	3%
Mukilteo	63%	65%	63%	63%	63%	88%	100%	100%	100%	100%	100%	100%
Orcas	75%	98%	69%	72%	93%	55%	93%	34%	90%	37%	100%	62%

Facility	Start		05-07		07-09		09-11		11-13		13-15	
	Vital	Non	Vital	Non	Vital	Non	Vital	Non	Vital	Non	Vital	Non
Point Defiance	99%	42%	89%	45%	96%	72%	86%	72%	86%	66%	89%	37%
Port Townsend	61%	63%	58%	59%	98%	81%	100%	90%	100%	90%	100%	90%
Seattle	55%	7%	55%	7%	54%	13%	51%	13%	51%	18%	78%	18%
Shaw	75%	46%	79%	46%	72%	46%	76%	46%	90%	29%	90%	29%
Southworth	58%	14%	59%	12%	59%	31%	59%	31%	59%	31%	100%	87%
Tahlequah	78%	52%	78%	52%	76%	52%	76%	52%	76%	52%	76%	7%
Vashon	49%	66%	50%	70%	57%	70%	54%	74%	46%	48%	88%	58%
All Terminals	73%	44%	73%	37%	79%	60%	81%	67%	81%	66%	87%	68%

Source: WSF Construction Program W 2007 LEAP (Proposed), v 2007-4

Preservation projects include a number of expenses that do not affect life-cycle ratings, which WSF refers to as non-life-cycle expenses. There are two main types of such expenses:

1. Non-life-cycle expenses within individual terminal preservation projects. Examples include property acquisition, interim preservation (maintenance) projects, purchase of emergency generators to support the electronic fare system, environmental mitigation, and placeholder preservation allowances.
2. Non-life-cycle systemwide projects intended to meet other preservation criteria, such as efficiency and effectiveness, cost savings, and regulatory compliance. Examples of these expenditures include the electronic fare system implementation, terminal physical security infrastructure and miscellaneous terminal projects.

In the 2005-07 biennium, 58 percent of the budget affects life-cycle ratings and 42 percent does not. For the 2005-21 biennia, 74 percent of the budget affects life-cycle ratings and 26 percent does not. See Table 9.

Table 9. Life-Cycle and Non-Life-Cycle Preservation Projects

(\$000s)

PIN	Project Title	05-07			05-21		
		Life Cycle	Non-Life Cycle	Total	Life Cycle	Non-Life Cycle	Total
902019V	Anacortes Terminal Preservation		300	300	37,925	4,774	42,699
930513B	Bainbridge Island Terminal Preservation	11,075	150	11,225	58,935	6,501	65,436
930513D	Bainbridge Terminal Food Service Improvement		310	310		310	310
	<i>Bainbridge Total</i>	<i>11,075</i>	<i>460</i>	<i>11,535</i>	<i>58,935</i>	<i>6,811</i>	<i>65,746</i>
930410R	Bremerton Terminal Preservation	90		90	22,746		22,746
952516H	Clinton Terminal Preservation	50	239	289	7,000	3,174	10,174
900040N	Eagle Harbor Terminal Preservation	12,600	3,017	15,617	34,351	3,017	37,368
900005F	Fauntleroy Ferry Terminal Preservation				24,302		24,302
900005L	Fauntleroy Terminal Preservation		150	150		500	500
	<i>Fauntleroy Total</i>		<i>150</i>	<i>150</i>	<i>24,302</i>	<i>500</i>	<i>24,802</i>

PIN	Project Title	05-07			05-21		
		Life Cycle	Non-Life Cycle	Total	Life Cycle	Non-Life Cycle	Total
900028Q	Friday Harbor Terminal preservation	6,436	685	7,121	20,991	685	21,676
902017J	Keystone Alternative	1,265	935	2,200	18,021	13,210	31,231
910414N	Kingston Terminal Preservation	535	452	987	19,843	5,390	25,233
900022G	Lopez Terminal Preservation				11,933		11,933
900026L	Orcas Terminal Preservation		917	917	6,940	917	7,857
900001F	Point Defiance Terminal Preservation		368	368	3,664	368	4,032
900012D	Port Townsend Terminal Preservation	2,659	300	2,959	20,599	3,266	23,865
900010A	Seattle Terminal Preservation	2,519	2	2,521	140,455	9,164	149,619
900024E	Shaw Terminal Preservation		60	60	5,781	58	5,839
916008N	Southworth Terminal Preservation	1,554		1,554	14,568	1,554	16,122
90002E	Tahlequah Terminal Preservation	200		200	3,891	200	4,091
900006N	Vashon Terminal Preservation	850		850	33,128	850	33,978
999940D	Catch-up Preservation	6,222	1,243	7,465	33,972	4,227	38,199
966620D	Systemwide ADA Support		75	75		809	809
966640D	Systemwide Aerial Photos		78	78		762	762
989930F	Systemwide Customer Travel Inquiry		300	300		2,113	2,113
989930E	Systemwide Emergency Management Comm		240	240		1,505	1,505
989920X	Systemwide Miscellaneous Terminal Projects		5,626	5,626		48,235	48,235
9829920K	Systemwide Movable Bridge Modifications		700	700		1,050	1,050
966620E	Systemwide Operations Construction Support		1,323	1,323		12,422	12,422
977731A	Systemwide Planning and Special Studies		1,367	1,367		14,105	14,105
966640Q	Systemwide Point of Sale Repl/Regional Fare		3,492	3,492		3,492	3,492
9666401	Systemwide Revenue Control System		107	107		1,313	1,313
989930A	Systemwide Server Infrastructure		125	125		1,102	1,102
989930D	Systemwide Safety Management System		725	725		1,950	1,950
999920A	Systemwide steel piling inventory account		54	54		514	514
966640F	Systemwide Terminal Design Standards		234	234		2,089	2,089
966650A	Systemwide Terminal Phone System Replace		200	200		988	988
989930B	Systemwide Terminal Physical Security Infra		7,894	7,894		21,661	21,661
989930G	Systemwide Terminal Physical Security Planning		550	550		2,254	2,254
999940C	Systemwide Terminal Planning/Design		326	326		3,183	3,183
999976T	Systemwide Terminal Work Orders by Auditors		96	96		871	871
966620C	Systemwide Toxic Waste Disposal		50	50		440	440
966650B	Systemwide WSF Staff Relocation		300	300		300	300
966650C	Systemwide Terminal Communications (IT)		160	160		1,284	1,284
	<i>Systemwide Total</i>		<i>24,022</i>	<i>24,022</i>		<i>122,442</i>	<i>122,442</i>
	Total	46,055	33,150	79,205	519,045	180,607	699,652
	Percentage	58%	42%		74%	26%	

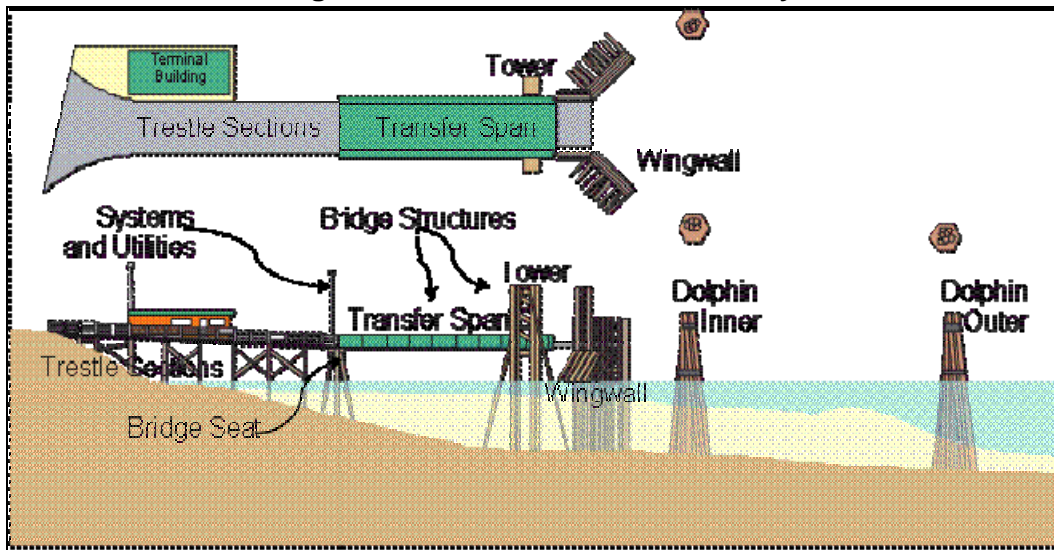
2. Life-Cycle Cost Model

The terminal life-cycle cost model is the basis for that portion of the preservation budget that preserves structures and systems.

a) Inventory

The terminal life-cycle cost model categorizes terminal structures and systems into nine categories. The location of these types of structures and systems is shown below in Figure 3, and the list of the nine structures and systems in Table 10.

Figure 3. Terminal Structures and Systems



Source: WSF

Table 10. Terminal Life-Cycle Cost Model Categories

Categories	#
Systems & Utilities	254
Bridge	195
Dolphin	168
Trestle	92
Paved Area	80
Terminal Building	74
Overhead Loading	65
Wingwall	33
Passenger-Only Facilities	5
Total	966

Source: WSF

For each terminal, the life-cycle cost model includes:

- each system or structure within the nine categories,
- the inventory number,

- description,
- priority (vital or non-vital),
- standard life-cycle,
- adjustment for location,
- adjustment for condition,
- revised life-cycle (the net of the standard life-cycle and the two adjustments),
- the last year the system or structure was installed or modified,
- the contract number,
- year due for replacement (taking the revised life-cycle and the year installed or modified to project year due for replacement), and
- the remaining useful life (the net of current year and the year due for replacement).

The model then projects the cost of replacing the asset in the year due based on year of expenditure dollars.

An example of the inventory of structures and systems for the Bainbridge Island terminal is shown below.

Table 11. Life-Cycle Inventory Sample: Bainbridge Island (Partial)

Inven- tory #	Description	Priority*	Standard Life Cycle	Adjust for Location	Adjust for Condition	Adjusted Life-cycle	Last Year Completed	Contract Number	Year Due	Remaining Useful Life
Dolphins										
Slip 1 (Main N.)										
2137	Left Inner, 6 Steel, Main N 1	3a	25			25	2002	6293	2027	22
2138	Left Outer, 13 Steel Main N 1	3a	20			20	2002	6293	2022	20
2139	Right Inner, Double-sided, 12 Steel, Main N 1/Aux Ctr 2	3a	25			25	2002	6293	2027	25
2140	Right Outer, Double-sided, 25 Steel, Main N 1/Aux Ctr 2	3a	20			20	2002	6293	2022	20
Wingwalls										
2148	Wingwalls, Steel, Main N 1	3a	25			25	1998	5341	2023	18
2149	Wingwalls, Steel, Aux Ctr 2	3a	25							
Bridge Seats										
2158	Bridge Seat, Concrete, Main N 1	3a	50			50	1995	4513	2045	40
2159	Bridge Seat, Timber, Aux Ctr 2	3a	30			30	1976	0278	2006	1
Trestles										
2161	Trestle, South, Steel/Concrete	3a	40			40	1966	8000	2006	1
2162	Trestle, Slip 2 Extension, Timber 1976	3a	40		(10)	30	1976	0278	2006	1
2163	Trestle, Tie-Up Slip, Steel/Concrete	3c	40		(10)	30	1982	2274	2012	7
2165	Trestle North Concrete, 1984	3a	50			50	1995	4513	2045	40
Paved Areas										
2177	Pavement on Concrete Trestle (North)	3c	20			20	1984	2791	2004	(1)
2178	Pavement on Steel/Concrete Trestle	3c	10			10	2003	6423	2013	8
2179	Traffic Lanes, upland	3c	15			15	1984		1999	(6)
2180	Holding Area, upland	3c	20			20	2003	6423	2023	18
Systems										
2181	Power	3a	20			20	1997	5061	2017	12

Inven- tory #	Description	Priority*	Standard Life Cycle	Adjust for Location	Adjust for Condition	Adjusted Life-cycle	Last Year Completed	Contract Number	Year Due	Remaining Useful Life
2182	Lighting	3a	20			20	1984	?	2004	(1)
2183	Cathodic Protection, currently nonfunctional	3c	20		(19)	1	1990	3758	1991	(14)
2184	Vessel Backfeed	3a	20			20	1999	?	2019	14
2185	Backup Generator	3a	20			20	1997	5061	2017	12
2186	Communications	3a	20			20	1984	?	2004	(1)
2187	Point of Sale System	3c	10			10	1994	?	2004	(1)
2188	Traffic Controls	3c	20			20	1984	?	2004	(1)
2189	Storm Drainage	3c	20			20	1984	?	2004	(1)
2190	Water Supply	3c	20			20	1955	?	1975	(30)
2191	Sewer	3c	20			20	1955	?	1975	(30)
2192	Signage	3c	20			20	1984	?	2004	(1)
2193	Fire Protection	3a	20			20	1984	?	2004	(1)
2194	HVAC	3c	20			20	1984	?	2004	(1)
Terminal Buildings										
2196	Main Terminal Building (TO BE RETIRED)	3c	40			40	1955	Pre-1955	1995	(10)
2197	Emergency Generator Shelter	3c	20			20	1997	5061	2017	12
2198	Storage Buildings (On Trestle)	3c	20			20	1995	4513	2015	10
2195	Toll Booths (4)	3c	20			20	1992	4170	2012	7

* Priority 3a is preservation of vital systems; 3c preservation of non-vital systems.

Source: WSF

b) Standard-life-cycles: steel and concrete structures

WSF's preservation program replaces older timber structures with steel and concrete structures. The standard life-cycles used in the terminal life-cycle model do not reflect the longer lives of these steel and concrete structures, and are much shorter than the design standards used by WSF terminal engineers. See Table 12 below.

The consultants reviewed the terminal inspection reports provided by WSF. In the review of those reports it was noted that steel pilings vary in wall thickness from 0.605 inches to 1.00 inches. At Bremerton, for example, steel pilings placed in service prior to 1999 were 0.75 inches, and those after, 1.00 inch. WSF staff indicated that the change to thicker wall piling was to replace corrosion protection measures that had proven unsatisfactory. It would seem reasonable that the standard life-cycle for thicker wall piling in the same service would vary due to the pile thickness. All pilings are listed as 25-year standard life-cycle.

Table 12. Design Life vs. Life-Cycle Cost Model Replacement
(years)

Structure	Design Life (1)	Planned Replacement (2)	Gap	% of Design Life
Bulkhead	75	40	35	53%
Trestle	75	40	35	53%
Transfer Span	75	40	35	53%
Transfer Span Substructure	75	40	35	53%
Wingwalls	50	25	25	50%
Inner Dolphins	50	25	25	50%
Floating Dolphin pontoons	50	25	25	50%
Floating Dolphin Anchors	25	25	0	100%
Pedestrian Facilities	75	40	35	53%
Building	75	40	35	53%
Retaining Wall	75	75	0	100%
(1) Design life based on deterioration due to corrosion or fatigue. (2) Planned replacement based on Life-Cycle Cost Method for purposes of planning and budgeting. Replacement life of structures may be reduced due to functional obsolescence. Replacement life of berthing structures also may be reduced due to damage from vessel Type II or Type III impact.				

Source: WSF

It is not clear why WSF has the life-cycle of some of its steel and concrete structures at 50 to 53 percent of the design life. Assuming that the structures are reasonably maintained, there is no reason to believe that they will not last well beyond 50 percent of their design life.

At the request of the consultants, WSF provided a life-cycle cost model condition projection based on the assumption that steel structures such as wingwalls and inner

dolphins will last thirty years instead of the standard twenty-five. See Table 13, below. The percentage of vital systems operating within their life-cycle increased by 3 percent in the later years of the capital plan with just this one modification. The difference would increase even more in later years, since only the very first steel structures installed by WSF will come due for replacement during this capital program period. (The steel structures are primarily in vital systems. There is no impact on the non-vital system life-cycle ratings from changing the steel systems to a thirty-year standard life.)

Table 13. Steel Structures: 25-Year Standard Life vs. 30-Year

(% operating within their life-cycle)

Vital Systems	Current/Steel Structures at 25 Years	Steel Structures at 30 Years	Diff.
Start	73%	73%	0%
05-07	73%	73%	0%
07-09	79%	80%	1%
09-11	81%	81%	0%
11-13	81%	82%	1%
13-15	87%	88%	1%
15-17	94%	94%	0%
17-19	92%	94%	2%
19-21	93%	96%	3%
21-23	93%	96%	3%

Source: WSF Life-Cycle Model V2007-4

c) Standard life-cycles: systems and utilities

The life-cycle model includes 254 inventory items under the category “systems and utilities” accounting for 26 percent of all the inventory items. As shown in Table 11 for Bainbridge, these systems include power, lighting, cathodic protection, vessel backfeed, backup generator, communications, traffic controls, storm drainage, water supply, sewer, signage, fire protection and HVAC systems—all with a standard life of 20 years. The point-of-sale system has a standard life of 10 years.

When developing the initial terminal inventory, WSF did not have the ability to inspect each of these systems and so arbitrarily assigned them all, except the point-of-sale system, a life-cycle of twenty years. In most cases, the system is not ready to be replaced at the end of twenty years unless the entire facility is being replaced (i.e., storm drainage and water supply systems are not generally replaced at the end of twenty years.) Despite this, the life-cycle model carries “overdue” systems into the calculation of vital and non-vital systems that are operating within their life-cycle; i.e., a twenty-five-year-old storm drain would show as operating outside its twenty-year life-cycle even though it does not need to be replaced.

At the request of the consultants, WSF provided a life-cycle cost model condition projection that eliminates the system and utilities category. See Table 14, below. The

percentage of vital systems operating within their life-cycle increased by 3 percent in the later years of the capital program and 4 percent for non-vital systems.

**Table 14. Life-Cycle Model With “Systems and Utilities”
Category and Without**
(% operating within their life-cycle)

	Current/ With Systems & Utilities	Without Systems & Utilities	Diff.
Vital Systems			
Start	73%	74%	1%
05-07	73%	74%	1%
07-09	79%	80%	1%
09-11	81%	82%	1%
11-13	81%	82%	1%
13-15	87%	87%	0%
15-17	94%	94%	0%
17-19	92%	92%	0%
19-21	93%	93%	0%
21-23	93%	94%	1%
Non-Vital Systems			
Start	44%	48%	4%
05-07	37%	39%	2%
07-09	60%	58%	-2%
09-11	67%	65%	-2%
11-13	66%	64%	-2%
13-15	68%	66%	-2%
15-17	87%	87%	0%
17-19	84%	87%	3%
19-21	84%	87%	3%
21-23	85%	89%	4%

Source: WSF Life-Cycle Model V2007-4

d) Adjustment for condition

As discussed in Section 2.B.(1), the 2001 Capital Program Performance Audit noted the importance of the life-cycle models’ inventory, and particularly, the importance of updating the inventory through periodic inspections. WSF’s quality cycle chart (see Figure 1) indicates that the life-cycle cost model is kept current through inspections, the Maintenance Performance Evaluation Tool (tracking maintenance work), terminal facilities managers’ reports, outside inspections (the terminals have annual bridge, electrical system and dive inspections), and consultations.

Interviews with WSF staff indicate that the inventory has not been regularly updated with condition adjustments, and that the model has not been updated during the 2006-07 biennium to date. (The consultants’ review found that the inventory had been updated

from the 2005 inspections. It did not appear that an update was done from the 2004 inspections.) WSF's model indicates that 20 percent of the structures and systems in the inventory have received condition adjustments, but when the adjustments were made is not clear.

To conform to the performance audit and WSF's policies, the condition for each item should be assessed and modified on a regular basis from the available inspection and maintenance reports. Without this update, the life-cycle cost model is not as useful a tool for budget planning or performance reporting as it could be, and runs the risk of presenting inaccurate projections.

Mechanical and electrical inspections: The consultants reviewed the mechanical and electrical inspection reports for all terminals. These reports deal with maintenance matters. There are three groups of issues.

- Priority one deficiencies are those that are severe enough to compromise public safety or system reliability. These include such items as: disconnect and reconnect ground wires on ground bus in Panel A; replace the fluid in transfer span gearbox; replace the suction hose that leads from reservoir to pump; and replace undersized feeder conductors between Panel MDP and the start-up transformer.
- Priority two deficiencies are not critical in nature but should be addressed or repaired. These include such items as: install locknuts on the turnbuckles for the two long counterweight wire ropes; place tags on the suction and return filters that states "Date of Change"; and perform hoist motor break test during electrical inspections.
- Priority three is assigned to items that should be addressed for the long-term service of the system. These include such items as: replace lubricant used on the wire rope with a lubricant that is translucent; add documentation to the PLC program describing the purpose and logic in each rung or for groups of rungs that are related; and clean up and repaint rust spots inside the shore power service disconnect enclosure.

Bridge inspections: The consultants also reviewed the WSDOT bridge inspectors' inspection reports, which bear directly on the condition of the system. The bridge inspectors routinely inspect structures at the terminals. The reports provide a rating for the structures which, while there are different specifics for each item, are generally:

State 1 – No Deterioration

State 2 – Minor Deterioration: Corrective action optional

State 3 – Medium Deterioration: Not sufficient to affect strength and/or stability

State 4 – Advanced Deterioration: Sufficient to warrant analysis of strength and/or stability

The consultants compared the condition ratings prepared by the WSDOT bridge inspections with the life-cycle cost model's economic condition rating, and found variation between the condition as represented by inspections and the life-cycle cost

model. See Table 15, below. The life-cycle cost model shows that for vital systems 73 percent are operating within their life-cycle. A comparative condition rating based on the condition of inspected structures would be 84 percent considering only State 1 items (no deterioration), and 96 percent with both State 1 and 2 items (no or minor deterioration). This sample bridge condition report rating is not economically weighted. For total accuracy, such weighting would be recommended. However, the relative weighting of the items is not likely to alter these findings significantly.

Table 15. Terminal Bridge Condition Report Ratings

Terminal	Year Inspected	Life-Cycle Rating Vital	Units Measured	State (Condition Rating)				
				1	2	1&2	3	4
Anacortes	2005	72%	89,715	71,579 80%	14,190 16%	96%	3,857 4%	69 0%
Bainbridge	2006	92%	185,387	177,530 96%	6,494 4%	99%	908 0%	455 0%
Bremerton	2006	78%	95,018	72,563 76%	16,151 17%	93%	3,245 3%	3,016 3%
Clinton ¹	2005	100%	259,317	258,401 100%	908 0%	100%	7 0%	1 0%
Eagle Harbor ²	2005	57%	155,189	143,099 92%	7,488 5%	97%	2,396 2%	2,206 1%
Edmonds ³	2005	98%	52,365	41,866 80%	6,245 12%	92%	4,243 8%	24 0%
Fauntleroy ⁴	2006	73%	149,720	146,808 98%	2,719 2%	100%	174 0%	19 0%
Friday Harbor ⁵	2005	82%	52,833	44,817 85%	7,915 15%	100%	148 0%	3 0%
Keystone	2006	30%	11,427	9,754 85%	1,538 13%	99%	130 1%	5 0%
Kingston	2005	96%	138,645	126,127 91%	11,213 8%	99%	1,305 1%	0 0%
Lopez ⁶	2005	72%	52,390	30,683 59%	6,466 12%	71%	15,231 29%	10 0%
Mukilteo	2005	63%	23,046	19,567 85%	2,827 12%	97%	618 3%	34 0%
Orcas	2005	75%	29,894	21,320 71%	6,975 23%	95%	1,558 5%	41 0%
Point Defiance	2006	99%	37,085	30,167 81%	4,804 13%	94%	2,096 6%	18 0%
Port Townsend	2006	58%	122,566	92,689 76%	26,433 22%	97%	3,215 3%	223 0%
Seattle Slip 1			371,862	358,134	10,289		3,438	1
Seattle Slip 2			408,627	300,001	79,816		28,577	233

Terminal	Year Inspected	Life-Cycle Rating Vital	Units Measured	State (Condition Rating)				
				1	2	1&2	3	4
Seattle Slip 3	2005	55%	29,512	12,687	8,760		5,214	2,851
Seattle POF			23,348	14,880	7,378		1,090	0
<i>Seattle Total</i>			<i>833,349</i>	<i>685,702</i>	<i>106,243</i>		<i>38,319</i>	<i>3,085</i>
				82%	13%	95%	5%	0%
Shaw	2005	75%	14,947	13,654	479		408	406
				91%	3%	95%	3%	3%
Southworth	2006	58%	85,049	71,545	9,772		2,460	1,272
				84%	11%	96%	3%	1%
Tahlequah	2006	78%	47,978	37,453	8,627		1,896	2
				78%	18%	96%	4%	0%
Vashon	2006	50%	205,791	119,894	78,460		6,541	894
				58%	38%	96%	3%	0%
WSF Total		73%	2,641,711	2,215,218	325,947		88,755	11,783
				84%	12%	96%	3%	0%

¹ One dolphin listed as State 3, two listed as State 4

² States 3 and 4 deficiencies are mainly coal tar epoxy coating deficiencies

³ State 3 is 95% coal tar epoxy coating failure State 4 includes one dolphin

⁴ State 4 includes one dolphin

⁵ Four dolphins listed as State 3, one listed as State 4

⁶ States 2 and 3 items are almost 100% coal tar epoxy coating failures

3. Preservation Replacement Projects

The preservation projects include replacement or significant additions to six facilities: Anacortes, Bainbridge Island, the Eagle Harbor repair facility, Keystone, Port Townsend and Seattle Colman Dock. For four of these facilities, one or more preservation projects is managed in conjunction with one or more improvement projects. Together with the associated improvement projects, these projects represent 52 percent of the 2005-21 biennia capital budget of \$1.2 billion, and include 51 percent of the preservation budget and 54 percent of the improvement budget.

Table 16. Preservation Replacement Projects

(\$000s)

Preservation Project	Budget 05-21	Improvement Project	Budget 05-21	Total
Anacortes Preservation Terminal Preservation	42,699	Anacortes Multimodal Terminal	59,885	
Catch-up Preservation Project	3,278	Anacortes Upland Parking	75	
		Anacortes Third Slip Overhead Loading	13,920	
		<i>Anacortes Total</i>		<i>119,857</i>
Bainbridge Island Terminal Preservation	65,436	Bainbridge Island Trestle Improvement	12,634	
Bainbridge Island Food Service Improvement	310	Bainbridge Island Multimodal Terminal	81,256	
		Bainbridge Island Multimodal Terminal	18,641	

Preservation Project	Budget 05-21	Improvement Project	Budget 05-21	Total
<i>Bainbridge Island Total</i>				178,277
Eagle Harbor Terminal Preservation	37,368			37,368
Keystone Alternative	31,231			31,231
Port Townsend Terminal Preservation	23,865	Port Townsend Ferry Improvement	13,428	37,293
Seattle Terminal Preservation	149,619	Seattle South Trestle Expansion	75,170	
		Seattle SR 519 P52 Access Improvement	37	
		Seattle Interim Retail Development	1,124	
		Seattle Terminal Building Repl-New Retail	2,962	
<i>Seattle Total</i>				228,912
Total	353,806		279,132	632,938
% of budget	51%		54%	52%

a) Replacement projects: non-life-cycle expenses

The preservation replacement project budgets include 64 percent of the terminal related non-life-cycle expenses in the 2005-07 biennium and 75 percent in the 2005-21 biennia (see Table 17). Preservation projects share expenses with associated improvement projects. For example, a property acquisition for \$3.75 million on Bainbridge Island was funded by the terminal preservation project (\$150,000), the Eagle Harbor repair facility preservation project (\$2.0 million), and the Bainbridge Island Multimodal improvement project (\$1.6 million). Plans for the property, which lies adjacent to both facilities, have not been developed. The Eagle Harbor repair facility master plan currently does not include use of the property.

In other cases the non-life-cycle expenses are attributable to the fact that the project is very similar to an improvement project. This is particularly striking in the case of the Keystone Alternative project, which includes \$13.2 million in site work for the relocated terminal. In the case of the Mukilteo and Edmonds Improvement projects, both of which involve moving terminals a similar distance, these expenses are treated as improvement expenses.

Table 17. Preservation Replacement Projects: Non-Life-Cycle Expenses

(\$000s)

Project Title/Non-Life-Cycle Expense	05-07	05-21
	Non-Life	Non-Life
Anacortes Terminal Preservation		
Property Acquisition	300	4,474
Interim Preservation		300
<i>Total Anacortes Terminal Preservation</i>	<i>300</i>	<i>4,774</i>
Bainbridge Island Terminal Preservation		
Placeholder Preservation		2,616
Non-life trestle widening mitigation		92
Interim Preservation		3,643

Project Title/Non-Life-Cycle Expense	05-07 Non-Life	05-21 Non-Life
Property Acquisition	150	150
<i>Total Bainbridge Island Terminal Preservation</i>	<i>150</i>	<i>6,501</i>
Bainbridge Terminal Food Service Improvement	310	310
Eagle Harbor Terminal Preservation		
Mitigation	1,017	1,017
Property Acquisition	2,000	2,000
<i>Total Eagle Harbor Terminal Preservation</i>	<i>3,017</i>	<i>3,017</i>
Keystone Alternative		
Site work	935	13,210
Port Townsend Terminal Preservation		
Property Acquisition	300	1,100
Placeholder Preservation		2,166
<i>Total Port Townsend Terminal Preservation</i>	<i>300</i>	<i>3,266</i>
Seattle Terminal Preservation		
Removal of Passenger-Only	2	125
Placeholder Preservation		9,039
<i>Total Seattle Terminal Preservation</i>	<i>2</i>	<i>9,164</i>
Total	5,014	40,242
% of Terminal Non-Life Preservation Expenses	64%	75%

b) Replacement projects: early life-cycle costs

In the case of Port Townsend, preservation dollars are being used to build new wingwalls, transfer spans, dolphins and other berthing structures on the elongated trestle being built as an improvement project. The Port Townsend preservation project is replacing some structures well in advance of their life-cycle replacement date in order to accommodate the improvement project (i.e., a steel wingwall built in 2005 that is not due for replacement until 2030 is being replaced)⁴.

The replacement of structures before their due date to accommodate an improvement project is categorized by WSF as a life-cycle rather than a non-life-cycle expenditure.

c) Replacement projects: master plan expenses

Although not identified separately in the budget, and thus not counted as non-life-cycle costs, some replacement project budgets include expenses for master plans and studies. For example, for the 2005-07 biennium the WSF Construction Program Variance Report

⁴ WSF indicates the steel wingwall is on a tie-up slip. "The wood wingwall it replaced was in very poor condition and was kept barely functional by a series of maintenance and emergency contracts in anticipation of eventual full replacement. Meanwhile, the capital funding for full replacement repeatedly was deferred because the fate of the terminal was undecided. Finally, the wingwalls were replaced with steel in 2005 on an emergency contract because their condition was compromising safety and they could no longer be repaired. The Port Townsend wingwalls are of a non-standard design, shorter-lived and less costly, designed and built with salvage in mind." (WSF Dec. 2006)

July 06 for the Seattle terminal projects shows that 93 percent of the \$1.8 million in costs incurred for the Seattle Colman Dock Long-Range Plan this biennium through July 2006 have been charged to the preservation project. For the Bainbridge Island Master Plan, 32 percent of the costs have been charged to the preservation project and 68 percent to the Trestle Improvement project. See Table 18, below.

Table 18. Long-Range Plan Expenses – Seattle Colman Dock/Bainbridge Island
2005-07 Biennium
(\$000s)

PIN	Project	Jul-06	%
900010A	Seattle Terminal Preservation	1,655.2	93%
900010G	Seattle South Trestle Expansion	132.6	7%
<i>Total Colman Dock Long Range Plan</i>		<i>1,787.8</i>	
930513A	Bainbridge Island Trestle Improvement	700.7	68%
930513B	Bainbridge Terminal Preservation	323.2	32%
<i>Total Bainbridge Terminal Master Planning</i>		<i>1,023.9</i>	

d) Replacement projects: budgets

The budgets for preservation projects that are intended to replace systems and structures are based on the life-cycle cost model, with projections for the cost of systems to be replaced expressed in rough-order-of magnitude year-of-expenditure and constant dollars. The rough-order-of-magnitude cost is revised as the project design phase provides more detailed plans, specifications and estimates. By the time the project is ready for advertisement, the cost estimate has evolved from a life-cycle cost factor to an engineering estimate. Once the total project budget is determined it is categorized into preliminary engineering, right-of-way, and construction budgets.

The amount being spent on preservation that affects the life-cycle of structures and systems is overstated in the life-cycle cost model, because it includes expenditures for master planning and other non-life-cycle expenses, which as noted above, can be substantial. Master planning expenses are counted as life-cycle costs and attributed to the preservation of particular structures or systems in the life-cycle cost model budget.

An example of the difference among the life-cycle cost model budget, the program budget and the project budget reporting is shown in Table 19 below for the Seattle Colman Dock terminal. The table shows, on the right-hand side, the budget in the life-cycle cost model distributed by system or structure within the Colman Dock inventory, with a total for preservation of \$2.5 million. On the left side, the table shows first the program budget as provided to the legislature. This budget is broken down between preliminary engineering and construction expenses. The next section in the table shows the project budget reporting, with actual expenses year-to-date. These expenses are primarily for the Colman Dock master plan.

**Table 19. Seattle Colman Dock: Life-Cycle Cost Model Budget
Compared to Program Budget and Budget Reporting
2005-07 Biennium**

Program Budget:			Life-Cycle Cost Model Budget:	
2006 Legislative Final List WSF Construction		Budget \$	Description	Budget \$
PIN 900010A Seattle Terminal Preservation		2,521,000	PIN 900010A Seattle Terminal Preservation	2,521,000
Preliminary Engineering		2,296,000	SE31 EXIT GATE INSTALLATION	120,000
Construction		225,000	3877Seattle Systems Security Gates	120,000
Total		2,521,000	SE33 COLMAN DOCK REDEVELOPMENT - PRESERVATION	2,401,000
			2836Seattle Trestle Bulkhead, Concrete (Alaskan Way seawall)	15,000
			2838Seattle Trestle Riprap	6,000
			4601Seattle Bridge NEW Bridge Seat, Steel/Concrete, Slip 2	6,000
			4595Seattle Bridge NEW Apron, Hydraulic, Slip 2	5,000
			4594Seattle Bridge NEW Apron, Hydraulic, Slip 1	5,000
Project Budget Reporting:		Expense \$		
Construction Variance Report: Expenditures to Date		Budget \$	7/06	
PIN 900010A Seattle Terminal Preservation		2,521,000	4607Seattle Bridge NEW Trestle, Steel/Concrete, Center	519,000
006784 Timber Trestle Preservation		61	4609Seattle Bridge NEW Bulkhead, Steel Sheetpile	15,000
006924 Seattle Ferry Terminal Coating Repair		19,012	4596Seattle Bridge NEW Apron, Hydraulic, Slip 3	5,000
Bainbridge/Seattle Terminal Physical Security			2817Seattle Bridge Towers (L & R), Pipe Pile/Concrete/Steel,	47,000
006989 Infrastructure		90,007	2819Seattle Bridge Transfer Span, Girder, Brem S 1	35,000
XL1982 Seattle Slip 2/3 Overhead Loading Maintenance		12,934	2825Seattle Bridge Bridge Seat, Concrete, Brem S 1	6,000
XL1987 Colman Dock Long-Range Plan		1,655,209	2827Seattle Bridge Bridge Seat, Pipe Pile/Concrete, Bain N 3	6,000
Total Expense To Date		1,777,223	2821Seattle Bridge Transfer Span, Girder, Bain N 3	35,000
Balance	743,777		2820Seattle Bridge Transfer Span, Girder, Aux Ctr 2	35,000
			2818Seattle Bridge Towers (L & R), H Pile, Bain N 3	47,000
			2816Seattle Bridge Towers (L & R), Pipe Pile/Concrete/Steel	47,000
			4608Seattle Bridge NEW Trestle, Steel/Concrete, North	320,000
			4590Seattle Dolphin NEW Dolphin, (Placeholder), Double-	48,000
			4588Seattle Dolphin NEW Dolphin, Right Outer, Double-Sided,	48,000
			4586Seattle Dolphin NEW Dolphin, Right Outer, Double-Sided,	48,000
			4589Seattle Dolphin NEW Dolphin, Left Inner, Steel, Slip 3	21,000
			4587Seattle Dolphin NEW Dolphin, Right Inner, Steel, Slip 2	21,000
			4585Seattle Dolphin NEW Dolphin, (Placeholder), Steel, Slip 1	21,000

2815Seattle	Wingwall	Wingwalls, Steel, Bain N 3	43,000
2814Seattle	Wingwall	Wingwalls, Steel, Aux Ctr 2	43,000
2813Seattle	Wingwall	Wingwalls, Steel, Brem S 1	43,000
4621Seattle	OHL	NEW Walkway Foundations/Columns	10,000
4617Seattle	OHL	NEW Cab, Steel, Fully Enclosed	51,000
4611Seattle	OHL	NEW Cab, Steel, Fully Enclosed	51,000
Life-Cycle Cost Model Budget			Budget
4616Seattle	OHL	NEW Elevator Tower, Steel/Concrete	48,000
4610Seattle	OHL	NEW Elevator Tower, Steel/Concrete	48,000
4613Seattle	OHL	NEW Transfer Span, Steel Fully Enclosed	18,000
4615Seattle	OHL	NEW Walkway Foundations/Columns	10,000
4620Seattle	OHL	NEW Walkway, Steel, Fully Enclosed	4,000
4614Seattle	OHL	NEW Walkway, Steel, Fully Enclosed	4,000
4618Seattle	OHL	NEW Apron, Aluminum, Hydraulic	9,000
4619Seattle	OHL	NEW Transfer Span, Steel, Fully Enclosed	18,000
4612Seattle	OHL	NEW Apron, Aluminum, Hydraulic	9,000
2882Seattle	Terminal	Agent's Office	13,000
2881Seattle	Terminal	Main Terminal Building	504,000
4653Seattle	Paved Ar	NEW Pavement on New Concrete Trestle	5,000
2866Seattle	Paved Ar	Pavement on Retained Fill	1,000
2877Seattle	Systems	Sewer	6,000
2878Seattle	Systems	Signage	6,000
2880Seattle	Systems	HVAC	6,000
2869Seattle	Systems	Cathodic Protection (nonfunctional)	6,000
2867Seattle	Systems	Power	26,000
2875Seattle	Systems	Storm Drainage	13,000
2870Seattle	Systems	Vessel Backfeed	6,000
2868Seattle	Systems	Lighting	13,000
2879Seattle	Systems	Fire Protection	6,000
2872Seattle	Systems	Communications	6,000
2876Seattle	Systems	Water Supply	6,000
2871Seattle	Systems	Backup Generator	6,000
3661Seattle	Non-Life	Passenger-Only Facility Removal	2,000

e) Replacement projects: Long-Range Strategic Plan

As will be discussed further below regarding improvement projects, the scope of the replacement projects is reliant on the projections on ridership from the draft Long-Range Strategic Plan. As noted in Section 2.B.(1), replacement of assets can add capacity to meet service requirements. For the terminal replacement projections, a key planning consideration is adding capacity to meet projected ridership.

An example is the case of the Keystone Alternative project, which is intended to “maintain existing service and accommodate future growth on the Keystone-Port Townsend route” (WSF Keystone Project Scoping Outreach and Comment Summary, p. 1). A Keystone Harbor Study was completed in January 2005, which identified four alternatives:

1. Relocate the jetty 300 feet to the east and widen the harbor to the east to accommodate a larger vessel with capacity between 124 and 144 cars;
2. Extend the jetty 600 feet into the water and widen the harbor to the west to accommodate a larger vessel between 124 and 144 cards;
3. Use the existing harbor, and acquire new, unique vessels with a special propulsion system that would allow them to operate in the existing Keystone Harbor; or
4. Use the existing harbor and terminal, and acquire new vessels that are similar in size to the existing vessels, approximately 65-car capacity.

In conducting the analysis of these four alternatives, the Keystone Harbor Study concluded that option four, using the existing harbor and acquiring new vessels the size of the current ones, would have the highest total life-cycle costs because “the additional cost of a third vessel on the route, and the fact that the costs cannot be shared with the rest of the system” (p. 2). Both of these assumptions are reliant on the forecasts of ridership. It is assumed that given ridership projections, “the Keystone Special vessel would have no utility elsewhere in the system, as its size and speed would not meet service schedules and capacity needs on any other route beyond 2010” (p. 20). The study also states that: “During the period FY 2011 through FY 2017, there will be travel demand for two (Keystone Special) vessels in the summer and one vessel in the winter. . . . During the period FY 2018 through FY 2041, there will be travel demand for three vessels in the summer and two in the winter” (Keystone Ferry Terminal Study Cost Analysis of Alternate Courses of Action, p. 11). If these two assumptions related to ridership increases are not realized, the total life-cycle cost of the Keystone Special vessel would be less than the other three alternatives.

f) Replacement projects: community costs

As will be discussed with the improvement projects, WSF can experience difficulties with local communities in expanding its facilities. As part of the Eagle Harbor repair facility preservation project, WSF has developed a master plan for the facility. This plan has generated considerable local concern and opposition from the City of Bainbridge Island. The project is currently delayed as WSF is appealing the City’s attempt to assume lead agency status for the State Environmental Protection Act (SEPA) review. The

preservation program includes \$870,900 for Shoreline Substantial Development Permit mitigation measures.

**Table 20. Eagle Harbor Repair Facility:
Shoreline Substantial Development Permit Mitigation**

Mitigation Measure	Budget
North fence with signs	28,600
Fencing	40,500
Pedestrian lighting	66,000
Physical security	300,000
Landscaping	23,800
Screen wall	393,000
Trail	19,000
Total	870,900

4. Systemwide Preservation Projects

The preservation program includes twenty-three systemwide preservation projects with budgets totaling \$24 million for the 2005-07 biennium and \$122.4 million for the 2005-21 biennia. The systemwide preservation projects are all for non-life-cycle costs, and include the following types of projects:

- terminal miscellaneous (23% of the 2005-07 biennium systemwide preservation budget/39% 2005-21biennia);
- security (36% and 21%);
- point of sale (15% and 4%); and
- administrative projects (20% and 31%).

There are no equivalent administrative or overhead expense projects for the terminal improvement budget. This means that all such costs are attributed by WSF to the preservation program.

a) Systemwide miscellaneous terminal project

The systemwide miscellaneous terminal project has a budget of \$5.6 million for the 2005-07 biennium (23 percent of systemwide project budgets) and \$48.2 million for the 2005-21 biennia, 39 percent of the budget. Table 21 details the items included in the miscellaneous terminal project, their cost and the percent that each items represents of the miscellaneous terminal project budget.

Table 21. Systemwide Miscellaneous Terminal Project

PIN 989920X
\$000s)

Item	05-07	%	05-21	%
SW20a Bridge Inspections/Dive Inspections	486	9%	5,272	11%
SW20b Scour Monitoring	149	3%	1,603	3%
SW20c Mechanical/Electrical Inspections and Preservation	598	11%	5,889	12%
SW21 Life-Cycle Preservation Management	264	5%	2,838	6%
SW22 Project Controls/Life-Cycle Preservation Management	880	16%	9,460	20%

Item	05-07	%	05-21	%
SW23 Systemwide Environmental Support	375	7%	3,769	8%
SW25 Library	74	1%	744	2%
SW26 Load Restrictions	37	1%	366	1%
SW31 Imaging Support	70	1%	1,039	2%
SW37 Systemwide Budgeting	346	6%	3,777	8%
SW38 Systemwide Long-Range Scoping	346	6%	3,772	8%
SW44 Basemaps	143	3%	532	1%
SW45 Administrative Tasks	98	2%	1,165	2%
SW 47 Work Order Task Management	96	2%	951	2%
SW49 Signing	27	0%	267	1%
SW50 Training	161	3%	1,616	3%
SW51 Attorney General Support	141	3%	1,596	3%
SW52 General Administration Purchasing Administrative Fees	27	0%	267	1%
SW54 Hydraulic Vulnerability Study	1,100	20%	1,100	2%
SW57 Terminal Property Management	47	1%	339	1%
SW67 Forecast Estimating	161	3%	1,873	4%
Total	5,626		48,235	
% of Systemwide Budget	23%		39%	

b) Systemwide security and emergency management projects

Systemwide security and emergency management projects include the Systemwide Emergency Management Communication, Terminal Physical Security Infrastructure, and Terminal Physical Security Planning projects. These projects total \$8.7 million for the 2005-07 biennium (36 percent of the total systemwide budget), and \$25.4 million for the 2005-21 biennia (21 percent). See Table 22.

Table 22. Systemwide Security & Emergency Management Projects

(\$000s)

PIN	Systemwide Project	05-07	05-21
989930E	Systemwide Emergency Management Communications	240	1,505
989930B	Systemwide Terminal Physical Security Infrastructure	7,894	21,661
989930G	Systemwide Terminal Physical Security Planning	550	2,254
	Total	8,684	25,420
	% of Systemwide Budget	36%	21%

c) Systemwide point-of-sale and revenue control projects

Systemwide point-of-sale and revenue control projects include the Point-of-Sale/Regional Fare and Revenue Control System projects. These projects total \$3.6 million or 15 percent of the 2005-07 biennium systemwide budget, and \$4.8 million or 4 percent of the 2005-21 biennia systemwide budget. See Table 23.

Table 23. Systemwide Point-of-Sale and Revenue Control Projects

(\$000s)

PIN	Systemwide Project	05-07	05-21
966640Q	Systemwide Point-of-Sale Repl/Regional Fare	3,492	3,492
9666401	Systemwide Revenue Control System	107	1,313
	Total	3,599	4,805
	% of Systemwide Budget	15%	4%

The point-of-sale project does not include \$1.2 million in the 2005-07 biennium preservation budget to provide individual terminals with emergency generators to back up the point-of-sale system. See Table 24.

Table 24. Emergency Generators – Terminal Preservation Project Budgets

(\$000s)

Project	05-07
Fauntleroy	100
Kingston	437
Orcas	517
Point Defiance	100
Shaw	58
Total	1,212

d) Systemwide administrative projects

Systemwide administrative projects include Operations Construction Support, Planning and Special Studies, Server Infrastructure, Safety Management System Enhancements, Terminal Design, Terminal Phone System Replacement, Terminal Planning/Design, WSF Staff Relocation, and Terminal Communications (IT) projects. These projects total \$4.8 million, or 20 percent of the systemwide budget for the 2005-07 biennium, and \$37.4 million, or 31 percent for the 2005-21 biennia.

Table 25. Systemwide Projects

(\$000s)

PIN	Systemwide Project	05-07	05-21
966620E	Systemwide Operations Construction Support	1,323	12,422
977731A	Systemwide Planning and Special Studies	1,367	14,105
989930A	Systemwide Server Infrastructure	125	1,102
989930D	Systemwide SMS Enhancements	725	1,950
966640F	Systemwide Terminal Design Standards	234	2,089
966650A	Systemwide Terminal Phone System Replacement	200	988
999940C	Systemwide Terminal Planning/Design	326	3,183
966650B	Systemwide WSF Staff Relocation	300	300
966650C	Systemwide Terminal Communications (IT)	160	1,284
	Total	4,760	37,423
	% of Systemwide Budget	20%	31%

5. Catch-up Preservation Project

The Nickel package includes a catch-up preservation project of \$38.2 million for the 2005-07 through 2011-13 biennia, when the project will be complete. The project is intended to assist WSF in catching-up to its preservation goal of having 90 to 100 percent of vital systems operating within their life-cycle by 2015 and 60 to 80 percent of non-vital systems. The 2005-07 biennium catch-up preservation budget is \$7.5 million. See Table 26, below.

Projects are programmed at the Anacortes, Bremerton, Kingston, Lopez, Orcas, Point Defiance, Shaw, Tahlequah, and Vashon terminals. However, as WSF has done since the creation of the project in 2003, the projects may shift to other preservation projects “if more pressing preservation needs emerge” (Project Detail Report Catch-Up Preservation, LEAP 2007, Version 2007-3). The budget at these terminals includes interim preservation and retrofit projects that do not affect the life-cycle of the structures and are essentially maintenance projects. These are noted as non-life-cycle in the WSF system and constitute 17 percent of the 2005-07 biennium catch-up preservation budget and 11 percent of the FY 2005-13 budget.

Table 26. Catch-Up Preservation Nickel Project

(\$000s)		
Catch-Up Preservation Project Detail	05-07	05-13
ANO6 Anacortes Dolphin Replacement Phase 2	2,943	2,943
AN34 Apron Replacement Slip 1		335
<i>Total Anacortes</i>	<i>2,943</i>	<i>3,278</i>
BR03 Bremerton Slip 1 Dolphins		2,909
BR10 Bremerton Slip 2 Dolphins		4,656
BR18 Bremerton Apron Replacement Slip 1		291
<i>Total Bremerton</i>		<i>7,856</i>
KI13 Kingston Phase 3 Dolphin Replacement		3,841
LO02 Lopez Dolphin Replacement	3,279	3,279
LO03 Lopez Interim Terminal Preservation *		313
LO11 Lopez Apron Replacement		378
<i>Total Lopez</i>	<i>3,279,000</i>	<i>3,970</i>
OR02 Orcas Dolphin Replacement		4,944
PD08 Point Defiance Apron Replacement		306
SH04 Shaw Dolphin Replacement		2,016
TA05 Tahlequah Transfer Span Retrofit *	1,243	1,243
VA03 Vashon Dolphin Replacement		8,074
VA07 Vashon Transfer Span Retrofit *		2,671
<i>Total Vashon</i>		<i>10,745</i>
Total	7,465	38,199
Non-Life Budget	1,243	4,277
% Non-Life	17%	11%

* Non-life-cycle expenses

B. Improvement Projects

There are 24 terminal improvement projects with a budget of \$63.4 million in the 2005-07 biennium and \$516.3 million in the 2005-21 biennia. The improvement budget is primarily devoted to the Anacortes, Bainbridge Island, Edmonds, Mukilteo and Seattle terminals. Ninety-five percent of the 2005-07 biennium budget, and 88 percent of the 2005-21 biennia budget, is for projects at these terminals. See Table 27.

Table 27. Terminal Improvement Projects

(\$000s)					
PIN	Project Title	05-07	%	05-21	%
902019U	Anacortes Multimodal Terminal	27,526		59,885	
902019X	Anacortes Upland Parking Improvement	75		75	
902019Y	Anacortes Third Slip Overhead Loading			13,920	
	<i>Anacortes Total</i>	<i>27,601</i>	<i>44%</i>	<i>73,880</i>	<i>14%</i>
930513A	Bainbridge Island Trestle Improvement	10,332		12,634	
930513E	Bainbridge Island Multimodal Terminal Improvement			81,256	
930513C	Bainbridge Island Terminal Multimodal Improvement			18,641	
	<i>Bainbridge Island Total</i>	<i>10,332</i>	<i>16%</i>	<i>112,531</i>	<i>22%</i>
952616I	Clinton Overhead Loading	0	0%	28,618	6%
910413M	Edmonds Multimodal Terminal	1,500	2%	57,607	11%
900028R	Friday Harbor Master Plan	250		250	
900028S	Friday Harbor Additional Holding Area	150		750	
	<i>Friday Harbor Total</i>	<i>400</i>	<i>1%</i>	<i>1,000</i>	<i>0%</i>
910414R	Kingston Site Planning Study			260	0%
900022H	Lopez Additional Parking Improvement			1,189	0%
952515J	Mukilteo Multimodal Terminal	4,279		12,649	
952515K	Mukilteo Multimodal Terminal	10,249		118,224	
	<i>Mukilteo Total</i>	<i>14,528</i>	<i>23%</i>	<i>130,873</i>	<i>25%</i>
900026M	Orcas Upland Property Purchase	50	0%	50	0%
900012G	Port Townsend Ferry Terminal Improvements			13,428	3%
900010I	Seattle South Trestle Expansion	5,294		75,170	
151902F	Seattle SR 519 P52 Access Improvements	37		37	
900010H	Seattle Interim Retail Development	1,124		1,124	
900010G	Seattle Terminal Building Repl.- New Retail	67		2,962	
	<i>Seattle Total</i>	<i>6,522</i>	<i>10%</i>	<i>79,293</i>	<i>15%</i>
916008Q	Southworth Second Slip	2,150		5,000	
916008P	Southworth Trestle Improvements			10,371	
	<i>Southworth Total</i>	<i>2,150</i>	<i>3%</i>	<i>15,371</i>	<i>3%</i>
977740A	Systemwide WSF Business Initiatives	250		2,111	
900030C	Systemwide Sidney Terminal Cruise Ship	110		110	
	<i>Systemwide Total</i>	<i>360</i>	<i>1%</i>	<i>2,221</i>	<i>0%</i>
	Total	63,443		516,321	

All the facility-specific improvement projects, except Edmonds and Mukilteo, have corresponding preservation projects.

1. Draft Long-Range Strategic Plan 2006-2030

As discussed in Section 2.C., WSF uses its long-range strategic plan to determine the need for improvement investments that increase capacity. WSF's improvement program is based on the premise that operations and demand for ferry service drive fleet size and deployment. Fleet size and deployment in turn drive terminal shoreside infrastructure. The Draft Long-Range Strategic Plan provides a ridership forecast and a fleet deployment and terminal improvement plan to accommodate the projected ridership. (See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for a summary of the Draft Long-Range Strategic Plan.)

The terminal improvement projects are based on the projections of ridership and service plans in the Draft Long-Range Strategic Plan. For example, the Bainbridge Island projects will result in a much larger terminal building and vehicle holding area to accommodate "ridership . . . projected to grow to 11.5 million by 2030" (www.wsdot.wa.gov/projects/ferries/bainbridgeterminalMPU).

The Seattle Colman Dock master plan anticipates the addition of a fourth slip to accommodate the Draft Long-Range Strategic Plan's proposed new Southworth to Seattle route, and enlargements of the terminal building and holding areas to accommodate projected ridership. "According to WSF's 2006 Draft Long-Range Strategic Plan, ridership on the Bainbridge Island and Bremerton routes will double over the next 25 years and walk-on passengers will triple by 2030, primarily during the peak afternoon commuting times. Vehicle service is projected to double by 2030, primarily in the non-peak periods when there is vehicle capacity to accommodate growth" (The Seattle Ferry Terminal Project At Colman Dock Scoping Outreach and Comment Summary, p. 1).

a) Flexibility in terminal plans

The draft Long-Range Strategic Plan includes a staggered approach to increasing the capacity of the fleet.

"While the plan was designed as WSF's best means of accommodating the projected future growth in ridership, this growth reflects changes in demographics and regional travel patterns that may or may not come to be. . . . In recognition of that fact, the plan has been designed to be flexible – equipped to handle as much of the projected growth as possible, but capable of being scaled back to avoid over investment if that growth does not materialize. Flexibility is possible because the vessels scheduled for purchase in the first and third decades of the planning period will primarily replace retiring vessels, while the majority of vessels needed for expansion are not scheduled until the second decade. This schedule will allow WSF to observe real ridership growth until a decision point in 2010 before deciding what service enhancements are really necessary" (p. 45).

Unlike the vessels, the terminal improvement projects have limited flexibility; they are being planned for the projected ridership with large capital infrastructure investments that are not intended in most cases to be phased with actual ridership but rather with funding availability. As an example, in the Keystone Harbor Study discussed above, the ridership

projection past 2010 is driving the selection of the vessel type for the Keystone-Port Townsend route, which is in turn driving the Keystone terminal configuration. The cost-benefit analysis in the study assumes that a third Keystone Special vessel would be needed on that route to support the ridership demand in 2018, and that after 2010 a smaller vessel could not meet projected ridership demand on any other route, so costs of the vessel cannot be spread over other routes. If a Keystone alternative is selected to accommodate the larger vessels, there will be no flexibility to modify it if ridership does not meet the projected levels.

On the other side of the route, the Port Townsend Improvement project with a budget of \$13.4 million will increase the vehicle holding capacity from 210 cars to 310 – a 48 percent increase. This expansion is based on the Strategic Plan’s projected 43 percent increase in vehicles on this route between 2005 and 2030 (Draft Long-Range Strategic Plan, p. 42). The project will extend the trestle 180 feet further over the water in order to create waiting space for 90 more vehicles for a total of 190 at the terminal. The other 120 spaces will continue to be on the road and at a new remote holding area that will accommodate the same number of vehicles as the current remote holding area.⁵ There is no flexibility once the trestle is expanded. If an option were developed to create more off-site holding area parking rather than expanding the trestle, then the holding area could expand or not as ridership actually materializes.

It should be noted that the trestle expansion will also allow the Port Townsend terminal to accept the larger vessels being considered for the route. The Keystone Alternative Study did not take into account modifications required on the Port Townsend route. The trestle expansion project will require additional dredging and different outer dolphins if larger vessels are selected (Quarterly Report Sept. 2006).

Some of the projects could be phased with ridership. The September 2006 quarterly report for the Edmonds terminal indicates that the third pier would be added later based on actual ridership.

b) Vehicle holding

The increase in capacity of the system is primarily driven by the projected increases in vehicular demand. “Most of the pressure to expand services is coming from the growth in vehicles. Under currently programmed service, all but three routes are projected to exceed their vehicle service standards by 2030 and there are passenger service challenges on the Seattle-Bainbridge Island route” (Draft Long-Range Strategic Plan, pp. 68 and iv).

Although the number of tolling booths and other elements are being enlarged to accommodate the projected increase in vehicular use, the primary impact on the terminals is on the size of the vehicle holding areas, many of which are on trestles over water,

⁵ The quarterly report Sept. 2006 indicates that the number of vehicles to be accommodated at the expanded terminal is 190, plus 90 in the removed holding area. The map on the project Web site indicates that the expanded terminal will accommodate 170 cars and the remote holding area 80.

which are expensive to construct and to maintain. WSF operates under a first-come-first-served policy, with reservations available only on the Sidney international route. This means that people drive their cars to the ferry early in order to wait for the ferry and must be accommodated in holding areas before the ferry arrives and, if it is full, until the next one arrives. (See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for a review of vehicle wait information in WSF's origin and destination studies.)

The level of service standard (LOS) for vehicles in the Draft Long-Range Strategic Plan is expressed as boat waits, except for the San Juan Island routes where the level of service standard is expressed as percentage of daily capacity. Outside of the San Juans, the level of service standard is a one-boat wait, except for Bainbridge and Mukilteo, where it is a two-boat wait because service is more frequent than on the one-boat wait routes.

The design guidelines used for terminal improvement and replacement projects is based on a different level of service standard, characterized by the minutes of delay for a vehicle on the approach roadways prior to passing the tollbooth. "WSF characterizes the desired Level of Service A for vehicle passengers as allowing them to turn their car off in the holding area and have no vehicles idling on the approach roadways. There is a four-minute difference between each LOS A, B, C, D, E and F. . . . [E]ach drop in level of service (B-F) represents a four-minute delay for a vehicle on the approach roadways prior to passing the tollbooth" (Bainbridge Community Advisory Group Meeting Summary, March 22, 2006, p. 6).

Sizing of the vehicle holding areas is determined under these guidelines by the most onerous of the following four criteria:

1. LOS A for the median day of the year and number of vehicles on that occurrence during the peak use period.
2. Projected number of vehicles during a four-hour peak period.
3. Meeting LOS C for 30th day of highest ridership.
4. Meeting LOS E on the 10th day of highest ridership.

(Bainbridge Community Advisory Group Meeting Summary, March 22, 2006, pp. 5-6)

This design guideline has resulted in larger vehicle holding areas than under boat wait scenarios. At Bainbridge Island the 1998 master plan included a 330-vehicle holding area that would accommodate 1.5 boat loads of cars. The plan currently being developed calls for 575 spaces in the holding area to accommodate the needs of vehicles on the median day of the year. The vehicle holding areas being planned at four of the new terminals are shown below. Only Mukilteo is consistent with the number required to meet the boat-wait level of service.

Table 28. Vehicle Holding Areas

	Plan - LOS	Terminal Plan	Boat-Loads	
Bainbridge Island*	2 boat	575	2.64	Trestle
Edmonds**	1 boat	820	6.31	Land
Mukilteo**	2 boat	260	2.00	Land
Port Townsend ***	1 boat	190	1.44 -3.85	Trestle
		90		Remote
* 218 vehicle capacity vessel				
** 130 vehicle capacity vessel				
*** 144 vehicle capacity/65 vehicle capacity				

c) Walk-on facilities

Although the growth in service levels and corresponding capital investments are primarily driven by the projected increase in vehicular demand, the Draft Long-Range Strategic Plan anticipates a larger percentage increase in walk-on passengers, especially during commute periods. “Commuter-period walk-ons are expected to grow at a much faster rate than all other ridership segments” (Draft Long-Range Strategic Plan, p. 16).

The level of service standard for walk on passengers is a zero boat-wait throughout the system, which means that passenger service is planned on a “peak of the peak” basis, i.e., for the most congested sailing of the day.

The terminal buildings are also being sized to accommodate anticipated increases in ridership and are based on the most congested sailing of the day. The consultants asked each of the project managers for these terminals what throughput they were using to plan the size of new terminal buildings. Each indicated that planning was to accommodate the peak level of ridership.

As an example, the new Anacortes terminal building will increase from 5,200 square feet to 31,000 square feet. The ridership projection in the Draft Long-Range Strategic Plan shows that for the Anacortes based routes to the San Juans and Sidney, there is a substantial summer peak. Winter ridership falls to a weekday average of 412 passengers and 516 vehicles in 2006, growing to 811 and 819 in 2030, under the draft plan levels of service.

**Table 29. Anacortes Route Ridership:
Draft Long-Range Strategic Planned Service**

	2006		2030	
	Vehicles	Passengers	Vehicles	Passengers
% Spring	21%	17%	21%	16%
Average Weekday	748	721	1,187	1,417
Average Weekend	1,177	3,611	1,867	5,913
% Summer	43%	57%	43%	58%
Average Weekday	1,724	4,250	2,735	8,352
Average Weekend	1,819	7,622	2,885	12,480

	2006		2030	
	Vehicles	Passengers	Vehicles	Passengers
% Fall	21%	17%	21%	16%
Average Weekday	748	721	1,187	1,417
Average Weekend	1,264	3,548	2,005	5,809
% Winter	15%	10%	14%	9%
Average Weekday	516	412	819	811
Average Weekend	919	2,291	1,458	3,751

Table 30 details the space planning for the new terminal. At 31,000 square feet with 7,400 square feet of interior passenger waiting area and 3,000 square feet of concession space, the terminal is likely to be under-utilized much of the year. It should be noted that the growth in size of the Anacortes terminal building is not solely to accommodate waiting passengers. Part of the increase is to provide additional administrative and concession space to meet business goals.

Table 30. Anacortes New Terminal Building Plan

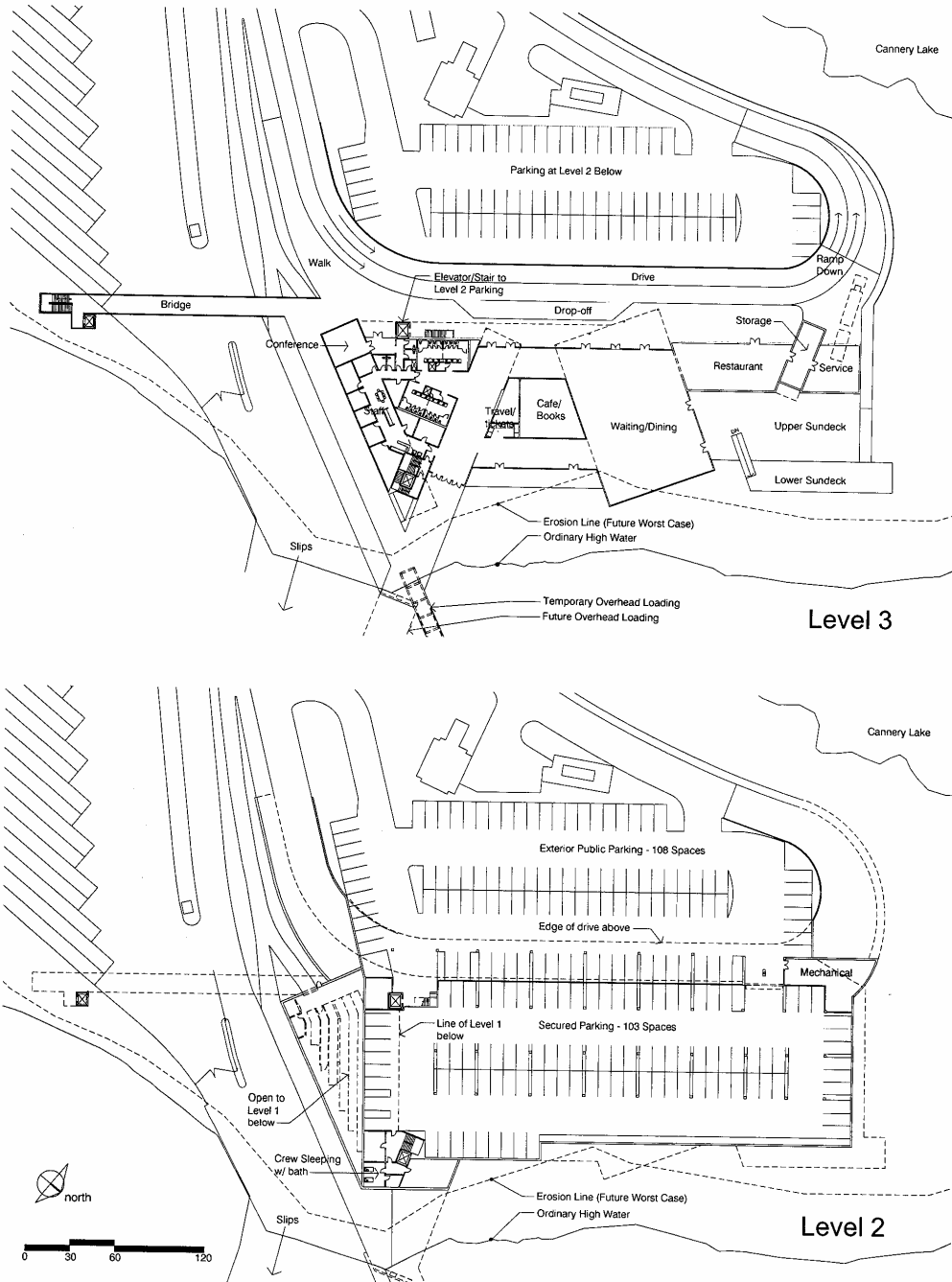
Terminal Building	Count	Area (sq. ft.)	
		New	Existing
Parking Places Employees Underground	103		
Public Parking Exterior	108		
Waiting Area Interior		7,400	
Waiting Area Exterior		7,000	
Administrative		1,800	
Concessions		3,000	
Amenities		2,200	
Storage		2,600	
Kayak holding area		3,000	
Food-related		4,000	
Total	211	31,000	5,200

Source: WSF

The Anacortes terminal, which is under design, is elevated to provide handicapped access to the pedestrian bridge, which has enabled the creation of underground, secured parking for employees. See Figure 4 on the next page for the plan for the new terminal.

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Figure 4. Anacortes Terminal Plan



ANACORTES FERRY TERMINAL

JULY 2006

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Study
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Capital Program Prioritization and
Terminal and Repair Facility Capital Projects Review

2. Life-Cycle Costs

WSF has not done life-cycle costing for all of the proposed terminal improvement or replacement projects, with total operating, maintenance and preservation costs projected over the life of the terminal.

a) Operating costs

Operating costs of the new terminals will be higher than for the current smaller terminals. The Draft Long-Range Strategic Plan includes assumptions about increases in operating costs. Because the Draft Long-Range Strategic Plan does not provide detailed information about the operating costs, it is not clear to what extent those assumptions are in line with the terminal plans. (See p. 51 of the Draft Long-Range Strategic Plan for discussion of operating and maintenance costs.)

Operating costs bear directly on the route and system's farebox recovery rate. In the case of the Edmonds terminal, the Edmonds-Kingston route has a high farebox recovery, with fares more than covering route operating costs. The recovery rates were 121 percent in 2003 and 108 percent in 2005. These percentages may change if the new terminal at Edmonds is constructed. The Environmental Impact Statement (EIS) for the Edmonds project shows that the total operating cost for phase one of the preferred alternative would be \$4.5 million, and for phase two, \$4.7 million. (See Table 31.) By comparison the 2003 route summary statement shows the operating cost for both the Edmonds and the Kingston terminals at \$4.5 million. For phase two WSF indicates it should be able to share some of the operating costs with other affected agencies such as Sound Transit, Amtrak and Community Transit, although agreement on the cost allocation has not been reached.

Table 31. Edmonds Annual Operation & Maintenance Costs

(2003 dollars, 000s)

	Operation	Maintenance	Total
Phase I Ferry terminal and holding area	3,567	941	4,508
Phase II Multimodal center, holding area, parking garage	3,179	1,489	4,668
Route Summary - Both Kingston-Edmonds terminals	3,768	749	4,517

Source: Edmonds Crossing Final EIS, p. 5-2

b) Terminal preservation

The preservation costs of the new terminals have not yet been estimated, although the terminal life-cycle cost model anticipates adding the new structures and systems when they are constructed. A life-cycle cost of the terminal improvement projects would provide an assessment of the long-term preservation costs of these expansions.

3. Cost-Benefit Analysis

WSF has not undertaken an analysis of operating changes that might reduce capital investments, such as a modification to the first-come-first-served loading policy. They have also not considered tariff policy and level of service standard adjustments as ways to manage demand. "One way to reduce the demand for expanded ferry services would be

to relax the Commission congestion standards for vehicles. Not only would this push service triggers further into the future, but it would also increase congestion and possibly lead to higher levels of walk-on traffic. . . . An option that would reduce the demand for vehicles and possibly improve the mode shift on ferry routes would be to make vehicle fares relatively more costly than passenger fares over time” (Draft Long-Range Strategic Plan, p. 69). A cost-benefit analysis on operating and policy adjustments versus the proposed improvement projects has not been conducted.

At the project level WSF does not engage in systematic cost-benefit analysis of tradeoffs. In some cases, as with the Keystone Harbor Study, WSF conducts a thorough cost-benefit analysis in which it is possible to understand the assumptions and look at the tradeoffs in capital, operating, and preservation costs among the alternatives.

In other cases individual project managers may undertake partial cost-benefit analysis. For instance, the Port Townsend project management team has examined the capital cost difference between off-site and overwater vehicle holding stalls, which shows that overwater holding areas are three times as expensive as upland holding areas. WSF is recommending the overwater option based on operational efficiencies, but has not yet conducted a cost-benefit analysis of the options.

**Table 32. Port Townsend
Cost Comparison of Overwater vs. Upland Holding**

	\$/sf	sf/stall	\$/stall
Overwater - trestle construction	\$120	200	\$24,000
Upland - land acquisition	\$20	200	\$4,000
Upland-grading & paving	\$20	200	\$4,000
<i>Total Upland</i>			<i>\$8,000</i>

Source: WSF

4. Ancillary Revenues

Ancillary revenues from concessions and leases at terminals help improve WSF’s operating income and are part of the revenue calculation in determining farebox recovery. In some of the terminal projects, WSF is allocating additional space for concessions in anticipation of additional operating revenue. WSF’s analysis also includes the period in which anticipated revenues would pay back the initial capital investment.

WSF has conducted an analysis of potential concession income at the new Anacortes terminal. This analysis shows the risks inherent in building concession space. A June 2004 Anacortes Concession Plan projected concession sizing and revenues using 2003 as a base and growth projections from the Anacortes master plan prepared in 1996. It shows a payback period of 14.4 to 18.7 years of initial capital costs based on different level of sales per departing passenger (SDP), with SDP ranging from \$1.59 to \$2.06 under the different scenarios. This analysis, which updates a study done with the 1996 Anacortes master plan, shows more risk for WSF than originally anticipated.

“All of the options show a much greater risk to WSF than originally projected. The decrease from the original passenger traffic projections and the lower market penetration during the off season combined to result in insufficient gross sales to keep all (retail) concepts operational year round. This significantly reduces the projected income stream. . . . This analysis doesn’t reflect additional risk factors which should be considered when determining a final design for the Anacortes terminal. It will be difficult to attract experienced operators to a terminal which only allows them seasonal operations. In order to incent potential tenants, WSF might have to reduce its anticipated percentage rent of 9 percent, further reducing WSF revenues and prolonging any payback period” (WSF - Anacortes Concession Plan Update).

5. Improvement Project Phasing/Financing

The terminal improvement projects are not being planned, as are the vessel acquisitions, to be flexible according to actual ridership. Most of the terminal improvement projects are, however, phased for funding reasons with current programmed dollars insufficient to complete the projects.

The largest project at Seattle’s Colman Dock has a total budget, including the preservation project, of \$228.9 million in the 2005-21 biennia. The project is at a master planning stage, with cost estimates for the total project very preliminary. Interviews with the project manager indicate that since the budget was developed, several additions have been made to the project. These include building to the silver Leadership in Energy and Environmental Design (LEED) standard, tribal mitigation, purchase of Pier 48, cost escalation factors, and the requirement for a 1,500-car holding area to meet the new standard for sizing holding areas (see discussion above) and the proposed Southworth Seattle service. The current preliminary estimate is \$275 million for the project. WSF is pursuing additional federal funds for the project and examining ways to keep the budget at the current figure.

The Edmonds terminal is being phased, with the first phase including two of three planned slips, a vehicle holding area for 600 vehicles, passenger overhead loading, and grade separation between ferry and rail traffic. The quarterly project report for September 2006 notes: “At this time, existing State and partnership funding will not complete the initial phase of construction. An additional \$37 million is needed to complete the first phase of the project; \$65 million more will complete the final phase of terminal construction” (Quarterly Project Report, Sept. 06, p. 1). The Edmonds terminal is on the current list of projects under consideration by the Regional Transportation Improvement District (RTID) for \$123.4 million. The final RTID package, to be submitted to the voters in November 2007, may or may not include funding for this project. The Edmonds terminal is also under consideration for the companion Sound Transit 2 package, which at this point includes \$50.2 to \$57.8 million to move the interim Sounder station in Edmonds to the new terminal location and expand parking for Sounder riders. The final Sound Transit 2 package, to be submitted to the voters in November 2007, may or may not include funding for this project.

The Mukilteo terminal is also being phased. As indicated in the Draft EIS, “Because of the estimated costs associated with full buildout of the multimodal facility and current funding limitations, the actual implementation of the project may be phased over time. The initial phase of development would include all road improvements, the waterfront promenade, ferry terminal building, and holding facility. Construction of the parking garage is the major component that could be deferred beyond the 2010 opening year. . . . Construction of the second slip could also be deferred beyond 2010 under the Compact Terminal Alternative” (Draft Mukilteo Multimodal Ferry Terminal EIS, February 2006, p. 3). Funding is included in the current Sound Transit 2 funding package for the parking garage at Mukilteo for \$12.1 to \$13.9 million. The final Sound Transit 2 package, to be submitted to the voters in November 2007, may or may not include funding for this project.

6. Community Costs/Concerns

As with the preservation projects, local community requirements are impacting ferry terminal planning and costs. The driving force for the Edmonds terminal relocation has been community concerns about the traffic impact of the terminal on adjacent streets. “[T]he City of Edmonds is soliciting for the Edmonds Crossing Design consultant contract and is the lead coordinating agency and project proponent on grant and legislative actions” (Letter August 22, 2006, WSF to City of Edmonds).

The City of Seattle has expressed reservations about the direction of planning for the Colman Dock. Similar to Edmonds, the City of Seattle is concerned about the amount of traffic on city streets. The City’s comments on notice of scoping for the Seattle terminal EIS, noted that for the traffic analysis “All alternatives should include a transportation demand management component with the objective of accommodating planned growth while potentially reducing the need for expensive capital facility investments by effectively managing demand for the facility. This plan should include pricing, methods to shift modes and methods to shift peak travel to off-peak travel” (City of Seattle Letter, May 19, 2006, p. 9).

It should also be noted that for the Bainbridge terminal project and others WSF has conducted considerable community outreach, working closely with local communities to identify issues of concerns and address them early in the design of the project.

7. Joint Use Transit Facilities

One of WSF’s priorities is to develop multimodal terminals that encourage walk-on ridership by providing easy access to connecting transit options. These range from bus transit facilities to connections to Sound Transit rail services at Edmonds and Mukilteo. The costs for these joint use transit facilities are being borne by WSF. Legislators and members of the Ferry Finance Advisory Committee are concerned about the costs being borne by WSF that should perhaps be shared with other transit agencies.

Section Four Recommendations

After reviewing the WSF capital prioritization process and the terminal projects, the consultants have developed recommendations for consideration by the legislature. These recommendations are based on the goals established in SSB 6241, which mandated the ferry financing study, and include:

- Create greater transparency for the legislature and members of the public to more easily understand and monitor WSF capital planning and budgeting.
- Create greater consistency between WSF capital budget definitions and state capital definitions.
- Clarify what costs should be part of a preservation budget.
- Suggest performance measures for the capital program.

Following are recommendations on the capital prioritization process, terminal preservation projects, and terminal replacement and improvement projects.

A. Capital Program Prioritization Process Recommendations

The consultants recommend that the legislature require WSF to conform to the Office of Financial Management (OFM) definitions of capital project, preservation and improvement, and that WSF clarify its project prioritization process.

1. WSF Capital Projects Should Conform to the OFM Definition of a Capital Project

The consultants found that WSF is using capital funds to fund projects that do not substantially extend the life of a system or structure, and that are essentially maintenance projects. These types of projects include interim trestle preservation and transfer span retrofits, which extend the life of the trestle or transfer span for a few years until a major replacement is scheduled.

The consultants recommend that the legislature require WSF to utilize the OFM definition of a capital project as a “project to construct either new facilities or significant long-term renewal improvements to existing facilities” (OFM 2007-2017 Capital Budget Instructions, p. 17). WSF’s category of interim preservation projects would, under this definition, be part of the maintenance budget.

2. WSF Preservation and Improvement Capital Projects Should Conform to the OFM Definitions of these Categories

The consultants found that WSF’s classification of its terminal projects into preservation or improvement categories has created confusion. This is particularly true for replacement preservation projects and for preservation projects intended to improve program efficiency and effectiveness, result in cost savings or cost avoidance, and/or

benefit customers and the public. While worthwhile goals in and of themselves, they do not meet the more standard definition of preservation.

OFM classifies state projects as either preservation or programmatic (i.e., improvement). Under the OFM definitions, preservation projects “maintain, preserve and extend the life of existing state facilities and assets, and do not significantly change the program use of the facility. Preservation category budgets generally have little effect on future operating programs and budgets, except for reductions in the agency’s maintenance costs and the deferred maintenance backlog” (OFM 2007-2017 Capital Budget Instructions, p. 17).

Programmatic (improvement) projects “primarily achieve a program goal, such as changing or improving an existing space to new program requirements or creating a new facility or asset. . . . This category is less concerned with life extension of a facility, and includes projects ranging from building new facilities to significant renovation of existing facilities. Program projects may also improve conditions, accommodate changes in services or clientele” (OFM 2007-2017 Capital Budget Instructions, p. 18).

The consultants recommend that the legislature require WSF to conform to OFM definitions of capital improvement and preservation projects. Under the OFM category definitions, WSF would classify projects as preservation only if they extend the life-cycle of a structure or system. WSF would not classify projects as preservation that are replacing terminals and expanding them to meet service requirements. Nor would WSF classify projects as preservation that are intended to improve program efficiency and effectiveness, result in cost savings or cost avoidance, and/or benefit customers and the public. This change would mean that projects such as the Keystone Alternative and the Electronic Fare System would be classified as improvements. It would also reflect the reality that the projects at terminals such as Bainbridge Island, Anacortes, and Seattle Colman Dock are being jointly funded from preservation and improvement budgets.

3. WSF Should Develop a Clear Capital Prioritization Process

If the legislature adopts a more narrow definition of WSF preservation, it will be necessary for WSF to clarify its capital prioritization process so that the trade-offs being made in terms of funding and scheduling are evident. The consultants found that WSF’s prioritization process for terminal projects is based on three factors: (1) the life-cycle cost model; (2) ridership projections and service plans in the Draft Long-Range Strategic Plan; and (3) the judgment of WSF management. The consultants recommend that WSF update this prioritization process in light of this study’s findings and recommendations.

Table 33 on the following page provides a summary of the suggested modifications in the WSF capital program definitions.

Table 33. Proposed Modifications to WSF Capital Program Definitions

		Current	Proposed
Capital Project Definition		Interim preservation included	Project to construct either new facilities or significant long-term renewal improvements to existing facilities.
Capital Project Category Definitions	Preservation	<ol style="list-style-type: none"> 1. Preserve the structural, mechanical and electrical integrity of infrastructure 2. Improve program efficiency and effectiveness 3. Regulatory compliance 4. Cost saving or cost avoidance 5. Benefit customers and the public 	<ol style="list-style-type: none"> 1. Maintain, preserve and extend the life of facilities and assets, and does not meet the definition of an improvement.
	Improvement	<ol style="list-style-type: none"> 1. Meet changes in demand and increase capacity 2. Provide mobility options 	<ol style="list-style-type: none"> 1. Meet changes in demand and increase capacity 2. Provide mobility options 3. Improve program efficiency and effectiveness 4. Cost saving or cost avoidance 5. Benefit customers and the public
	Emergency Repair	Address damage and/or unanticipated regulatory requirements.	Address damage and/or unanticipated regulatory requirements.
Capital Project Type Definitions	Preservation	<ol style="list-style-type: none"> 1. Life-Cycle Cost Model or Condition Rating 2. Non-life-cycle costs such as: <ul style="list-style-type: none"> • Master plans • Property acquisition • Interim preservation • Emergency generators • Placeholder preservation 3. Replacement projects 4. Systemwide administrative projects 5. Systemwide revenue enhancement projects 	<ol style="list-style-type: none"> 1. Life-Cycle Cost Model or Condition Rating 2. Proportionate share of systemwide administrative projects
	Improvement	<ol style="list-style-type: none"> 1. Master plans 2. Terminal expansions 	<ol style="list-style-type: none"> 1. Terminal expansions and replacements 2. Master plans 3. Property acquisition 4. Emergency generators 5. Proportionate share of systemwide administrative projects 6. Systemwide revenue enhancement projects

B. Terminal Preservation Project Recommendations

The consultants recommend that the legislature require WSF to: update the life-cycle cost model to make it more useful as a planning tool; develop a condition rating performance measurement system; allocate systemwide overhead projects between the preservation and improvement program categories; include only life-cycle related expenses in facility-specific preservation projects; and exclude non-life-cycle costs from the catch-up preservation project.

1. Update the Terminal Life-Cycle Cost Model to Make it a Better Planning Tool

The consultants found that the terminal life-cycle cost model is not as useful a planning tool as it could be. To be more useful the model must:

- Be based on an inventory that is regularly updated from maintenance and condition reports.
- Include only systems and structures that are replaced at the end of their life-cycle and not systems, such as water systems, that are replaced only when the terminal is rebuilt.
- Reflect more accurate information on the standard life-cycle of structures.

The consultants recommend that the legislature not consider information from the life-cycle cost model until it has been updated and modified.

2. Develop a WSF Terminal Condition Rating Performance Measurement System

The consultants found that the condition rating of terminals provided through bridge, mechanical, and dive inspections provides a good third-party rating of the condition of the terminal's assets. The consultants recommend that the legislature require the development of a condition rating performance measure for terminal preservation. Condition ratings are already in use elsewhere in WSDOT, including for road pavement and bridge conditions. A condition rating system is less dependent on the ability of WSF to keep the life-cycle model information current, may provide a better picture of the state of preservation of WSF's assets, and is easier to communicate to decision-makers (i.e., it is easier to understand whether structures and systems are in good, fair, poor or substandard condition than to understand the percent of vital and non-vital systems and structures operating within their life-cycle.)

3. Allocate Systemwide Overhead Projects Between Preservation and Improvement Projects

The consultants found that WSF attributes all systemwide overhead projects to the preservation budget. The consultants recommend the legislature direct WSF or OFM to develop a basis for allocating those overhead costs between the preservation program, as re-defined, and the improvement program, as re-defined.

4. Include Only Life-Cycle Related Expenses in Facility-Specific Preservation Projects

The consultants found that within the preservation budgets of specific facilities, there were non-life-cycle costs, including property acquisition, master plan development, purchase of emergency generators to support the electronic fare system, and other costs. The consultants recommend that these costs not be included in facility preservation budgets but rather be included in improvement budgets, since they do not extend the life of a system or structure. This change will ensure conformance with the OFM definition of a preservation project and aid legislative understanding.

5. Exclude Non-Life-Cycle Costs from the Catch-Up Preservation Project

The consultants found that 17 percent of the catch-up preservation project, specifically provided to allow WSF to catch-up with its life-cycle goals, was being used for non-life-cycle expenses. The consultants recommend that these expenses not be included in the catch-up preservation project.

C. Terminal Replacement and Improvement Projects

1. Preservation Replacement and Improvement Projects Should be Combined as One Improvement Program Category

The consultants recommend that replacement and improvement projects be combined into the improvement capital budget. This would be consistent with OFM definitions and allow the legislature to see more clearly the relationship between these improvements and the Draft Long-Range Strategic Plan.

2. Priority Should be Given to Flexible Terminal Improvement Plans and Projects

The consultants found that the Draft Long-Range Strategic Plan provides flexibility in the scheduling of new vessels, so that vessel planning can be changed as real ridership is known. However, there is only limited flexibility in the terminal plans.

The legislature should give priority to those terminal projects that are designed to be flexible in the way that the vessel procurement schedule is flexible. Examples of flexibility might include: terminal buildings or vehicle holding areas that are built-out in phases; and developing upland or remote vehicle holding areas rather than building holding areas on permanent trestles, which require a greater initial capital investment and are difficult to modify once constructed.

3. A Ridership Performance Measure Tied to the Capital Plan Should be Developed

The consultants found that the improvement projects rely on the Draft Long-Range Strategic Plan to develop the scope of the projects. A performance measure relating to ridership and the capital program should be developed to help the legislature track the validity of the investment assumptions and to inform investment decisions. This would allow the legislature to make the same type of flexible, ridership based decision that has been suggested for vessel acquisition in WSF's Draft Long-Range Strategic Plan.

4. WSF Should be Required to Undertake Systematic Cost-Benefit Analysis

The consultants found that WSF does not undertake systematic cost-benefit analysis. WSF has not undertaken a systematic analysis of operating changes that might reduce capital investments, such as a modification to the first-come-first-served loading policy. They have also not considered tariff policy and level of service standard adjustments as ways to manage demand. The legislature should require a cost-benefit analysis of operational, level of service standard and tariff modifications that could reduce the required investment in terminals, particularly in the sizing of terminal buildings and vehicle holding areas, prior to funding expansions.

5. WSF Should be Required to Provide a Complete Life-Cycle Cost Analysis

The consultants found that WSF does not always do a complete life-cycle cost analysis of its new terminal construction. A complete life-cycle cost analysis would allow for a better prediction of the operating and preservation budget impacts of new construction. It will be important for the legislature to understand these costs, particularly as they affect farebox recovery and future preservation budgets. The life-cycle cost analysis is different from the life cost-cycle model, which is designed to predict preservation costs rather than operating costs.

6. WSF Should be Required to Provide a Business Plan Supporting Investments Intended to Generate Ancillary Revenues

The consultants found that WSF is trying to improve farebox recovery through the addition of concession space. These are inherently risky investments. The consultants recommend that the legislature require WSF to provide temporary facilities to test concession income prior to making large capital infrastructure investments at terminals where there is limited concession experience, and/or provide a business plan that projects the rate of return from such investments.

7. WSF Should Identify Funding Required to Complete Construction when Master Plans are Developed

The consultants found that the 2005-21 biennia capital plan does not include sufficient funding to implement the master plans for the major terminal projects. The legislature should be aware of any unfunded components of the master plans for these major projects in order to gauge the level of future funding that may be necessary if the projects proceed. This is particularly important for those projects where terminals are being entirely relocated.

8. WSF Should Make the Legislature Aware of Costs Incurred to Meet Local Concerns

The consultants found that projects are incurring costs to satisfy local community concerns. In some cases, such as with the Eagle Harbor repair facility and the Mukilteo projects, funds are allocated for specific mitigation strategies. The legislature should be aware of these costs and provide direction in terms of state funding for local amenities.

9. WSF Should Make the Legislature Aware of Costs Incurred for Joint Use Transit Facilities

Members of the Ferry Financing Advisory Committee and legislators have expressed concern about WSF financing of joint use transit projects. The legislature should be aware of these costs and provide direction in terms of state funding for joint use transit facilities.

10. The Legislature Should Consider Requiring Expert Review of WSF Projects

Consultant interviews with legislators and legislative staff indicated a concern about the structure of WSF. In particular some interviewees suggested that outside review bodies should be created to help WSF. These review bodies might include a panel to review major projects to ensure that they utilize best practices in terms of efficiency, technology and business analysis of tradeoffs. The findings in this review of terminal projects reinforce this concern. The consultants recommend that the legislature require expert review of the major projects. (See *Washington State Ferries Financing Study Appendix 2: Legislative Concerns and Directions*, for a review of consultant interviews with legislators and legislative staff.)

D. Recommendations for Improvement and Preservation Projects

1. Require a Predesign Study for Terminal Projects Over \$5 million

One way to implement the recommendations relating to life-cycle cost analysis, cost-benefit analysis, and business plan for specific terminal projects would be to require WSF to submit a pre-design study on major projects. A predesign study is required by OFM for all major projects defined as “those with an estimated cost of \$5 million or more” (OFM Predesign Manual p. 6).

OFM’s pre-design manual includes detailed instructions for pre-design studies for both improvement and preservations projects, as follows:

“A predesign study should include the following for additions, renovations and new facilities:

- A description of the service delivery needs to be met – the problem;
- An architectural/functional program and thorough explanation of the scope of work;
- An analysis of potential and recommended project site(s);
- An analysis of existing building conditions for remodels and upgrades;
- A project budget in the format of the Project Cost Estimate Worksheet;
- Cost-benefit and life-cycle cost information for major decisions involving economic trade-offs;
- A discussion of relevant master plans and other planning documents that affect the project;
- A thorough analysis of the operating impacts of the project including Full-Time Equivalent positions (FTEs), and operating and maintenance costs; and

- A complete set of conceptual or preliminary drawings.

“For infrastructure (such as electrical, water, sewer, roofs and roads) preservation/replacement projects:

- A description of the service delivery needs to be met – the problem;
- A thorough explanation of the scope of work;
- An analysis of existing infrastructure conditions and maintenance impacts including an engineer’s report analyzing the problem and identifying potential solutions;
- A project budget in the form of the Project Cost Estimate Worksheet;
- Cost/benefit and life-cycle cost information for major decisions involving economic trade-offs;
- An analysis of how future needs and growth are accommodated;
- A discussion of relevant master plans and other planning documents that affect the project;
- A discussion and recommendation regarding the project delivery and agency project management to be used;
- Conceptual drawings (prior to schematic design phase); and
- Operating and maintenance impacts.” (OFM Predesign Manual p. 7)

Section Five

Implications for Ferry Financing

A. Projection of Funding Needed

In order to proceed with ferry financing, an estimate of capital resources needed to preserve and improve terminals is necessary. Given the findings and recommendations in this report, it is difficult to assess these financing needs until the life-cycle cost model is updated and the recommended cost-benefit analysis for terminal improvement projects is completed.

B. Impact on Farebox Recovery Percentage

Several of these recommendations will affect the actual and projected farebox recovery percentage. The move of interim preservation to the maintenance budget will increase operating costs and reduce the farebox recovery rate. If life-cycle costs are projected, they should include operating costs of the new terminals, which will affect the long-term projection of the farebox recovery rate.

Appendix A

Terminal Project Reviews

Capital Program Prioritization and Terminal and Repair Facility Capital Projects Review

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Anacortes

A. Projects

There are five projects at Anacortes with budgets of \$30.8 million for the 2005-07 biennium and \$119.9 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Anacortes Projects

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
902019U	Anacortes Multimodal Terminal	27,526	16,089	13,292	2,978					59,885
902019X	Anacortes Upland Parking Impr	75								75
902019Y	Anacortes Third Slip Overhead Loading				2,120	11,800				13,920
902019V	Anacortes Terminal Preservation	300	1,156	6,535	17,614	8,277	5,633	3,184		42,699
999940D	Catch-Up Preservation									
	ANO6 Dolphin Replacement Phase II	2,943								2,943
	AN34 Apron Replacement Slip 1			335						335
	Anacortes Total	30,844	17,245	20,162	22,712	20,077	5,633	3,184		119,857

B. Project Expenditures Life to Date

Anacortes Project Expenditures Life to Date (Aug. 06)

(\$000s)

PIN	902019U	902019V	902019X	Aug 06
Project	Multimodal	Preservation	Upland Parking	Total
Construction	16	5	1,803	1,824
Preliminary Design	2,210		16	2,226
Environmental Permitting	830		22	852
General Project Management	2,979	214	71	3,264
Public Outreach	129			129
PS&E	1,156		200	1,356
Review	29		13	42
Scoping & Planning	314		4	318
CADD	71		55	126
Other	71	1		72
Total	7,805	220	2,184	10,209

Source: WSF

C. Project Status/WSF Identified Risks

- The Upland Parking project is complete.
- The Multimodal Terminal is at 15% design.
- WSF identified risks for Multimodal Terminal (August 22, 2006 Progress Report)
 - Tribal settlement and cultural resources report
 - City concerns include planning for the 520 corridor, customers and immigration move potential from Sidney, wetlands mitigation, bike path construction borne by WSF

- Construction costs including building material prices, General Contractor Construction Manager (GCCM), negotiation of Maximum Allowable Construction Cost (MACC), CSI formatting of project for conformance, WSF internal building design and materials standards
- Permits – permit mitigations exceed project budget, rights of entry for hydroperiod analysis

D. Project Scope, Schedule and Budget Changes

This section summarizes the consultants' review of the change forms provided by WSF on this project.

1. 902019U Anacortes Multimodal Terminal: Scope, Schedule and Budget Changes

This is a Nickel funded project that was added to the capital program in August 2003. The project has been delayed due to moving to a GCCM approach to project management and delays in hiring consultants. Overall the anticipated cost decreased by \$1.9 million.

a) Scope Changes 2003-2006

The project was described in August 2003 as improvements to the Anacortes Multimodal Terminal to accommodate a greater range of vessel sizes and improvements to the structure and functionality of the terminal facilities. It was further described in June 2004 as consisting of rebuilding the tie-up slips further offshore (one tie-up slip, one drive-on tie-up slip, and an access trestle for the drive-on tie-up slip; complete in the 2005-07 biennium); rebuilding and expanding the terminal building (Phase 1 complete in the 2007-09 biennium, Phase 2 complete in the 2011-13 biennium); a site-circulation/grade separation element (complete in the 2009-11 biennium); and (in July 2004) building upper parking lot restrooms.

b) Budget Changes 2003-2006

The budget has been only slightly modified from \$67.0 million in August 2003 to \$65.1 million in March 2006.

Anacortes Multimodal Terminal Budget

	(\$000s)				
	Aug-03	Jul-04	Feb-05	Feb-06	Mar-06
	V2003	V2005-3A	V2005-5		
Engineering	9,777	9,956	9,956	9,956	10,626
Construction	57,223	54,447	54,447	54,447	54,446
Total	67,000	64,403	64,403	64,403	65,072

c) Schedule Changes 2003-2006

The multimodal project was originally scheduled to be complete in June 2011. It is now scheduled to be completed by June 2013.

Schedule Change Anacortes Multimodal Project
(End Dates)

	Sep-03	Jul-04	Feb-05
	V2003	V2005-3A	V2005-5
Engineering	Jun-10	Jun-12	Jun-12
Construction	Jun-11	Jun-13	Jun-13

2. 902019X Uplands Parking Improvement

This project, which paved and expanded the upper parking lot and built a trail to the terminal, was completed earlier than originally anticipated and for \$935,000 less than originally budgeted.

a) Scope Changes 2003-2006

The project was described in July 2003 as being the expansion and paving of the upper parking lot so that WSF could charge for parking. The scope was increased in February 2004 to include a trail from the parking lot to the terminal building. Parking lot utilities were subsequently added to be installed using the trail route.

b) Budget Changes 2003-06

The budget was \$935,000 less than originally estimated.

Anacortes Upland Parking Improvement Budget
(\$000s)

	Sep-03	Mar-04	Jul-04	Feb-05	Nov-05	Feb-06	Mar-06
	V2003		V2005-3A	V2005-5			
Engineering	634	410	528	528	347	347	347
Construction	2,535	2,150	2,772	1,847	1,937	1,937	1,887
Total	3,169	2,560	3,300	2,375	2,284	2,284	2,234

c) Schedule 2003-2006

This project was accelerated into and completed on schedule in the the 2003-05 biennium.

3. 902019Y Third Slip Overhead Loading

This project will construct a passenger overhead loading for the third operating slip. The project scope, budget and schedule have not changed since 2003. It has a budget of \$13.9 million and is scheduled to be complete in June 2015.

4. 902019V Terminal Preservation

The scope of this project has changed appreciably between 2003 and 2007. The original project in 2003 was to include interim trestle preservation, terminal building preservation and overhead loading preservation. There was no right-of-way acquisition in the original budget. Acquisition of Port of Anacortes property was then added, then removed, and finally added again along with the acquisition of two private properties for terminal expansion. A second tie-up slip was added to the project when the multimodal project

removed two existing tie-up slips and replaced them with one new vehicle tie-up slip and one regular tie-up slip. In 2013-2015, the preservation project will provide vessel tie-up capabilities to meet the future needs based on the twenty-year systems plan. Project timeline increased from an end date of 2011 to 2019 due to extension of the WSDOT capital program from 10 to 16 years, which allowed the programming of additional projects in the 2015-17 and 2017-19 biennia.

Right-of-way acquisition has been delayed due to more urgent spending priorities at Friday Harbor. Project costs increased from \$18.8 million over a ten year capital program with the original scope and schedule to \$42.7 million over a fourteen year capital program with the revised scope and schedule.

a) Scope Changes 2003-2007

- Change Management Form 7/28/03 – The scope included interim trestle, terminal building and overhead loading preservation.
- Project Control Form 6/10/04 – Scope changed to add acquisition of right-of-way from Port of Anacortes to acquire the property on which the terminal sits, replacement of the trestle in addition to interim preservation and retrofit of the transfer span, and deleted terminal building preservation.
- Project Control Form 3/15/05 – Right-of-way acquisition delayed due to the Port of Anacortes' unwillingness to sell the property.
- Project Control Form 7/18/05 – Right-of-way acquisition of three properties, substitute full replacement of a transfer span in lieu of retrofit, deferred interim preservation work and added the second tie-up slip relocation project.
 - The three properties to be purchased are: the Port of Anacortes property on which the terminal lies at \$4.5 million; the Hinshaw property adjacent to the terminal to allow installation of a grade separation and an increased number of tollbooths to improve site circulation and processing speed for the traveler for \$.2 million; and the Dillar property which is covered with surface parking and is adjacent to the terminal at an expected cost of \$1 million. The Dillar property may be used for parking, transit-oriented development and/or wetlands mitigation.
 - The second tie-up slip resulted from the multimodal terminal tie-up slip project that removed two existing tie-up slips and replaced them with one new vehicle tie-up slip and one regular tie-up slip. These slips were relocated 250 feet further out into deeper water to accommodate bigger vessels and as part of eelgrass mitigation. With this new project, another regular tie-up slip will be added, to be located adjacent to the newly constructed tie-up slips. In 2013-2015, this project will provide vessel tie-up capabilities to meet the future needs based on the WSF Long-Range Plan..
- Project Control Form 1/19/06 – Defers acquisition of the Port of Anacortes and Hinshaw properties to a different biennium in order to free up funds for the Friday Harbor project.

b) Budget Changes 2003-2007

The budget reflects the changes in scope and the addition and modifications to the right-of-way plans. In November 2005 the budget changed to a sixteen year budget.

Anacortes Preservation Project Budget Changes

(\$000s)

	Sep-03	Mar-04	Jul-04	Feb-05	Nov-05	Jan-06	Mar-06
	V2003		V2005-3A	V2005-5	*	*	*
Engineering	4,232	2,960	3,501	3,501	6,248	6,248	6,248
Right-of-Way			4,500		6,043	4,474	4,474
Construction	14,596	15,825	19,101	19,101	31,980	31,980	31,980
Total	18,828	18,785	27,102	22,602	44,271	42,702	42,702

*Sixteen year budget rather than ten

c) Schedule Changes 2003-2007

Anacortes Preservation Project Schedule Changes

	Sep-03	Mar-04	Jul-04	Feb-05	Nov-05	Jan-06	Mar-06
	V2003		V2005-3A	V2005-5	*	*	*
Engineering	Dec-11		Jun-12		Jun-11	Jun-18	
Right-of-Way			Jun-05		Jun-11	Jun-11	
Construction	Jun-13		Jun-13		Jun-17	Jun-19	

E. Condition Rating

The 2005 bridge inspection report indicates that although 72% of the Anacortes terminal systems and structures are operating within their life-cycle according to the life-cycle cost model, 80% are in good condition and an additional 16% in fair condition.

Life-cycle and Condition Rating Anacortes

Yr. Insp.	Life-cycle Rating	Insp. Units	State				Percent Good or Fair
	Vital	Measured	1	2	3	4	Condition
2005	72%	89,715	71,579	14,190	3,857	69	
%			80%	16%	4%	0%	96%

F. Observations

1. Projects Interrelated

The preservation, multimodal and upland parking improvement projects are interrelated with the preservation budget being used to purchase right-of-way (\$4.5 million) to assist with the improvement project. The preservation project is also constructing an additional tie-up slip to replace one that was displaced by the multimodal terminal project.

2. Long-Range Plan

Passenger throughput, parking space counts and overall planning is based on the 2030 ridership projections. The electronic fare system has been included in the planning. No reservation system study has been done. The concept of phasing the project implementation based upon actual passenger ridership has not been explored.

3. Project Management

The project is managed by a WSF program manager and an outside consultant (structural engineer) as project manager.

4. Budget

- a. The Phase I construction budget was \$20.8 million for a new & interim terminal, parking, entry road, upgrade of the upland parking area, pedestrian plaza, bookstore, restaurant, snack bar and passenger facilities. An outsourced coffee/snack bar at the car holding area is also planned.
- b. Current budget estimate is \$38.4 million which has been included in the 2007-09 biennium WSF budget submittal.

5. Design

The current planning includes a preferred Scheme N that is currently at 15% completion and a cost estimate is being performed. The Scheme N planning and program assumes an elevated building driven by the need to provide disabled passenger loading. This creates covered parking below the building. The covered parking is currently assumed as secure parking for employees.

6. Schedule

- Presentation to internal steering committee in late November 2006
- 50% design completion planned for November 2006
- 90% design completion planned for March 2007
- Environmental permit schedule planned for January 2007
- GMP delivery planned for March/April 2007
- Construction is planned to commence June 2007
- Completion is planned for January 2009

7. Cost-benefit analysis/life-cycle cost analysis

Has not been done. A formal value engineering workshop and risk analysis are scheduled for March 2007.

8. Construction

The project is the first GCCM (General Contractor Construction Manager) project that WSF has tried at a terminal. This process, which brings a contractor in during design, allows for negotiation of the Maximum Allowable Construction Contract or MACC with

the contractor. The project manager will negotiate the MACC at 90% design and he indicates that this is a risk factor for the project.

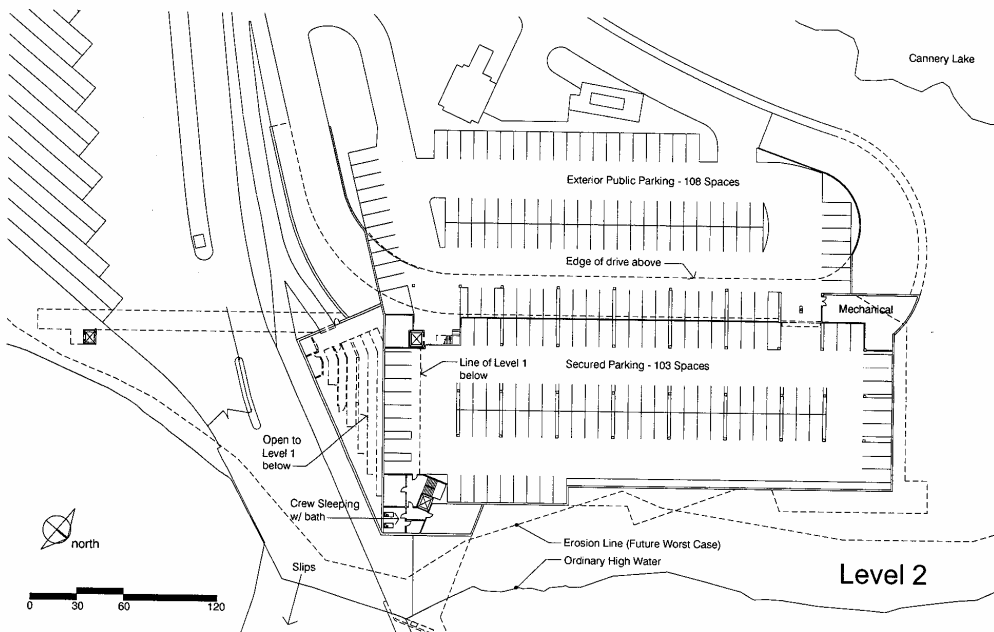
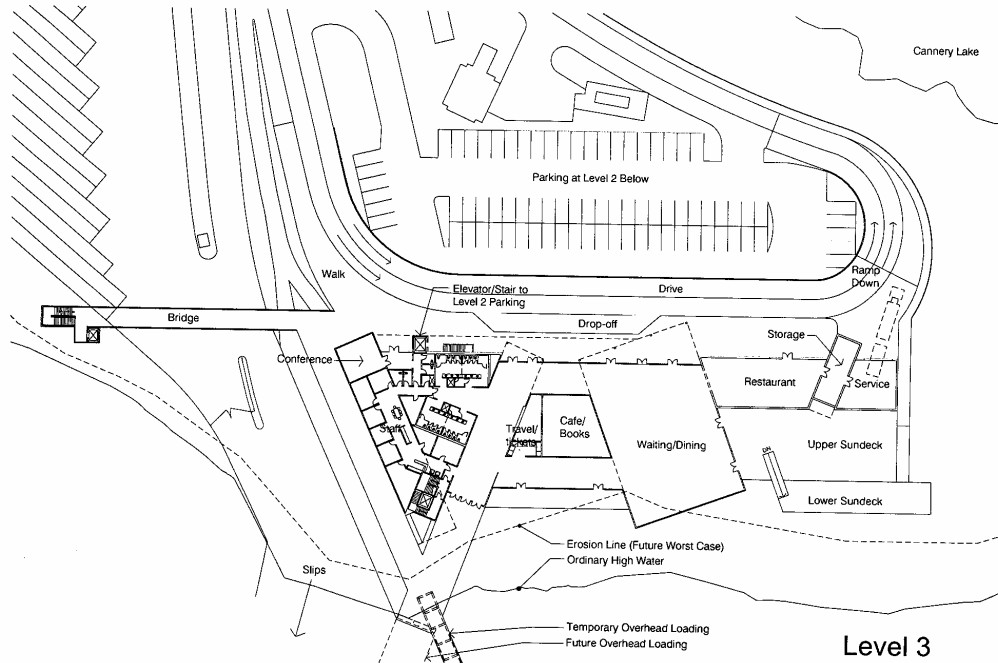
9. Ancillary revenue

The design includes an allocation of 3,000 square feet for concessions and a restaurant. This is an inherently risky undertaking. Discussions with the project manager and concession manager indicate that the strongest concession experience has been in the vehicle holding area. The size of the terminal concession area should be reviewed before making a final commitment to the 3,000 square feet.

10. Condition

The Anacortes terminal is in good condition, with the inspection reports showing that the terminal has 80% of its inspected structures in good condition and an additional 16% in fair condition. The bridge inspection reports do not reflect the condition of the building.

N



ANACORTES FERRY TERMINAL

JULY 2006

Cedar

Bainbridge Island

A. Projects

There are five projects at Bainbridge Island with budgets of \$21.9 million for the 2005-07 biennium and \$178.3 million for the 2007-09 biennium.

Bainbridge Island Projects

(\$000s)

Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
Bainbridge Island Trestle Impr	10,332	2,302							12,634
Bainbridge Island Multimodal Terminal Impr			1,849	5,954	48,060	25,393			81,256
Bainbridge Island Terminal Multimodal Impr		1,769	5,000	11,872					18,641
Bainbridge Island Terminal Preservation	11,225	12,301	23,877	0	3,643	2,616	3,804	7,970	65,436
Bainbridge Terminal Food Service Impr	310								310
Total	21,867	16,372	30,726	17,826	51,703	28,009	3,804	7,970	178,277

B. Project Expenditures the 2003-07 Biennia

Project expenditures are noted below from the 2003-07 biennia, through July 2006. No expenditures have been made from the two multimodal projects, with the preservation and trestle improvement projects bearing all expenses for right-of-way acquisition and terminal master planning. Expenditures from the multimodal project are scheduled for the 2007-09 biennium.

Bainbridge Island Project Expenditures 2003-07 Biennia (July 2006)

(\$000s)

PIN	930513A	930513B	930513D	930513C	930513E
Project Title	Trestle Impr	Preserv.	Food	Multimodal	Multimodal
BA 08 Trestle Widening	1,952	63			
006995 Preservation		7,940			
BA 33 Trestle & Slip 2 Replacement		1,419			
BA 34 Trestle Replacement Phase 2		270			
BA 20a Trestle Widening Mitigation	237				
BA37b - Right of Way Acquisition	1,955	552			
XL2543 Terminal Master Planning/Overhead Loading/Terminal Building	701	323			
MS5365 Transfer Span Hydraulic Cylinder Procurement		261			
MS5426 Transfer Span HPU Procurement		166			
MS5588 Hydraulic Cylinder Replacement		26			
XL2232 Terminal Business Initiatives			8		
Total	4,845	11,020	8	0	0

C. Project Status/WSF Identified Risks

- **Trestle Improvement:** The trestle widening project is delayed due to permitting difficulties. The original permit application has been withdrawn upon recommendation of the hearing examiner. A new permit application will be submitted pending re-evaluation of the project in the context of the master plan. Project has been placed on the watch list for construction in fall 2008.

- Master Plan: Project consultant contract executed. Project goals established. Concepts under public review. Budgeting to the \$168 million cost of the 1998 master plan. Design team slowed progress to allow for joint planning with the City of Bainbridge Island.
- Food Service – At 90% design, construction expected November 2006.
- Risks: (WSF Terminal Engineering Progress Report Sept. 2006)
 - City of Bainbridge Island/WSF issues on Eagle Harbor repair facility likely to affect the Bainbridge project.
 - Original project definition may be inadequate to address current community and city expectations with likely cost and schedule impacts.
 - The estimated funding for the WSF desired level of design, environmental documentation and construction falls short of the programmed budget by \$10-15 million. The preferred alternative will be implemented in phases according to a prioritization of needs in order to meet the available funding.

D. Project Scope, Schedule and Budget Changes

The funds are programmed and anticipated to be authorized for Multimodal projects in the 2007-09 biennium. To date, \$1,955,000 has been spent from the Improvement PIN for right-of-way acquisition and \$701,000 from the Improvement PIN for master planning

E. Condition Report

Life-cycle and Condition Rating Bainbridge Island

Yr. Insp.	Life-cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2006	92%	185,387	177,530	6,494	908	455	
%			96%	4%	0%	0%	99%

F. Observations

1. Projects Interrelated

The preservation, trestle improvement and multimodal projects are interrelated. No expenditures have been made from the two multimodal projects, but the master planning and right-of-way acquisitions being made through the preservation and trestle improvement projects are critical to the multimodal projects. This is particularly the case as environmental and cultural resource issues have delayed and may halt the trestle expansion project.

2. Long-Range Plan

Throughput, scope and new terminal sizing are based upon the 2030 long-range ridership projections, specifically the west bound PM commute.

3. Project Management

The process is being managed by an outside consulting planner with WSF staff support.

4. Master Plan

The master plan assumes holding for 575 cars established to provide Level of Service A on the 180 busiest day. (Level of service A is a 0 to 4 minute wait before entering the vehicle holding area.)

5. Schedule

- Summer 2006 – Refine design concepts
- Fall 2006 – Identify alternatives
- Early 2007 – Public and agency scoping
- Summer 2008 – Draft environmental document
- Fall 2008 – Final environmental document
- 2009 – Begin construction

With selection of a preferred alternative in January 2007, the schedule proposed for the terminal project is not likely to be met. Items that have not been performed yet include cost estimates for the alternatives, undertaking cost-benefit analyses, start land acquisition process for the preferred alternative, phasing of the master plan into achievable sections, and initiation of detail design.

6. Cost-benefit analyses/life-cycle cost analyses

Have not been done

7. Flexibility

There are no plans to stagger the phasing with ridership.

8. Environmental

There are significant cultural, environmental and permitting issues associated with this project. The City of Bainbridge Island has imposed several program elements such as vehicle holding, city street improvements, utility improvements and pedestrian walkways. As noted by WSF, problems with the City over the Eagle Harbor Repair Facility are likely to spill over to this project.

9. Ancillary revenue

The food service project moves an existing outdoor concession stand into the current terminal.

10. Condition

The Bainbridge Island terminal is in good condition, with the inspection reports showing that the terminal has 96% of its inspected structures in good condition and an additional

4% in fair condition. The terminal building, which is not part of the bridge inspections, is out of compliance with current seismic codes.

Bremerton

A. Projects

The Bremerton preservation project has a budget of \$90 thousand for the 2005-07 biennium and \$22.7 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Bremerton Projects

		(\$000s)								
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
930410R	Bremerton Terminal Preservation	90	95		7,706		8,994	1,594	4,267	22,746
999940D	Catch-Up Preservation									
	BR03 Slip 1 Dolphins			2,909						2,909
	BR10 Slip 2 Dolphins			4,656						4,656
	BR18 Apron Replacement Slip 1			291						291
	Bremerton Total	90	95	7,856	7,706		8,994	1,594	4,267	30,602

The Bremerton terminal was rebuilt in 1990 and is “...the first of WSF’s planned multimodal terminals. ... The Bremerton terminal features ferries and buses plus amenities for pedestrians and bicyclists. ... The Bremerton terminal project is nearly complete, with the only remaining phase being a tunnel for ferry traffic to bypass several blocks of congested downtown streets.” (Draft Long-Range Strategic Plan Technical Appendix G p. 32-33) The tunnel will not be a WSF expense, although WSF has a project manager assigned to coordinate with WSDOT on the tunnel.

B. Project Expenditures 2005-07 Biennium

Through August 2006 only \$3,000 has been spent under the Bremerton preservation project.

C. Project Status/WSF Identified Risks

- Preservation project: In the 2005-07 biennium the budget of \$90,000 is for a new agent’s office. The project is not complete.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-cycle and Condition Rating Bremerton

Terminal	Yr. Insp.	Life Cycle Rating	Units	State				Percent Good or Fair Condition
		Vital	Measured	1	2	3	4	
Bremerton	2006	78%	95,018	72,563	16,151	3,245	3,016	
%				76%	17%	3%	3%	93%

F. Observations

1. Interim Preservation

The 2005-07 biennium budget includes \$95,000 for non-life-cycle overhead loading control system modifications. This report recommends that this type of maintenance work not be considered capital.

2. Steel Structures

The capital plan includes replacing a steel dolphin (inventory item 2203) installed in 1998 and a steel wingwall (inventory item 2208) installed in 1999. This assumption is based on a 20 year life for the dolphin and a 25 year life for the wingwall. Neither may be necessary in the 2017-21 biennia in which they are planned for replacement.

3. Condition

The Bremerton terminal is in fair condition, with the inspection reports showing that the terminal has 76% of its inspected structures in good condition and an additional 17% in fair condition.

Clinton

A. Projects

There are two projects at Clinton with budgets of \$289 thousand for the 2005-07 biennium and \$38.8 million for the 2005-21 biennia.

Clinton Projects

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
952616I	Clinton Overhead Loading	0	0	0	4,358	24,260				28,618
952516H	Clinton Terminal Preservation	289	251	262	276		1,246	111	7,739	10,174
	Clinton Total	289	251	262	4,634	24,260	1,246	111	7,739	38,792

The Clinton terminal was rebuilt in 2003 at a total cost of \$39.9 million from 1991-2005. “It now has two slips and no overhead loading, but the trestle was built to accommodate future construction of a third slip and overhead loading that will serve the two primary slips.” (Draft Long-Range Strategic Plan Technical Appendix G p. 58)

B. Project Expenditures 2005-07 Biennium

Project expenditures are noted below from the 2005-07 biennium, through August 2006.

Clinton Project Expenditures 2005-07 Biennium (August 2006)

(\$000s)

PIN	Project	Aug. 06
952516H	Preservation	
	007114 Physical Security Infrastructure	37
	MS2597 Eelgrass Mitigation	82
	Total	119

C. Project Status

- Septic System Replacement: The life-cycle cost model includes \$50,000 for septic system replacement. Nothing has been expended to date on this project.
- Security Infrastructure: This was not included in the life-cycle cost model budget.
- Eelgrass Mitigation: Two hundred and thirty-nine thousand dollars (\$239,000) was budgeted for this element of the project and is a non-life-cycle expense.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-cycle and Condition Rating Clinton

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2005 ¹	100%	259,317	258,401	908	7	1	
%			100%	0%	0%	0%	100%

¹ One dolphin listed as state 3, two listed as state 4

F. Observations

1. Preservation budget

This budget is for on-going eelgrass monitoring and is a non-life-cycle expense.

2. Overhead loading

This improvement is scheduled for the 2011-15 biennia. A cost-benefit and full life-cycle cost analysis should be completed prior to adding this feature at the terminal. A decision to fund this element should also be dependent on ridership.

3. Condition

The Clinton terminal is in good condition, with the inspection reports showing that 100% of the terminal's inspected structures are in good condition.

Eagle Harbor Repair Facility

A. Project

The Eagle Harbor repair facility project, which includes property acquisition, continued Superfund monitoring and maintenance at the facility, has a budget of \$15.6 million for the 2005-07 biennium and \$37.4 million for the 2005-21 biennia.

Eagle Harbor Repair Facility

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
900040N	Eagle Harbor Terminal Preservation	15,617	20,899				691	161		37,368
	Eagle Harbor Total	15,617	20,899				691	161		37,368

B. Project Expenditures Life to Date through July 2006

Eagle Harbor Repair Facility Project Expenditures through July 2006

(\$000s)

	July 06
Property Acquisition	1,808
Planning	449
Tribal	4
Environmental	57
Design Slip B	1,074
Design Projects 2 & 3	1,719
Design Phase 2	168
Construction Hydraulics	4
Construction Slip B	5105
Construction Phase 2	1
Legal/Right of Way/Covenant/Memorandum of Agreement	190
Other Projects	486
Public Involvement	103
Total	11,168

Source: WSF

C. Project Status/WSF Identified Risks

- Master Plan and Phasing:
 - Phase 1 – Slip conversion of Slip B from a walk-on to a drive-on slip is complete.
 - Phase 2 – Repairs to dock facilities including replacement of piles and support beams and remodeling of the maintenance building. This phase is delayed for one year (current estimate) due to a challenge to permitting under the State Environmental Protection Act (SEPA) (see risk discussion below).

- Phase 3a – Initial build out of a maintenance building annex. This phase is delayed for two years (current estimate) due to the SEPA challenge.
- Phase 3b – Construction of a permanent storeroom and training facility (not funded).
- Risks: (WSF Terminal Engineering Progress Report July 2006)
 - Funding – The scope of Phases three through five (currently Phases 3a and 3b) has changed several times without a corresponding budget adjustment. Program scope is now trimmed to the minimum that will still provide improved functionality of the facility. Further reduction would deter from the intended benefit of the improvements. Inflation on materials and labor has increased significantly in the region and this has not been accounted for in the budget. The design and construction costs of the new hydraulically actuated transfer span were added in part to the project with no additional funding.
 - Permits – A Shoreline Substantial Development Permit (SSDP) is required for Project 3. The SSDP requires several variances on height, setback and landscaping. If the city does not grant these variances, it will impact the size of the building. The SSDP is also tied to the Memorandum of Agreement (MOA) between WSF and the City of Bainbridge Island. The city may want more than one acre for the MOA area, which would reduce the usable area of the facility and limit truck movement around the site.
 - Public Relations and Litigation – Community pressure may influence the legislative effort to freeze funding until further study of alternative locations is completed. There is litigation pending over the city's and local citizens' challenge of lead agency status for the State Environmental Protection Act process, as well as WSF's Declaration of Non-Significance. This is causing delays in permitting, plans, specifications and estimates, and construction. Funding may need to be distributed past the 07-09 biennium and additional funding would be required to cover litigation and delay costs.

D. Project Scope, Schedule and Budget Changes

E. Condition Report

Life-cycle and Condition Rating Eagle Harbor Repair Facility

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2005 ¹	57%	155,189	143,099	7,488	2,396	2,206	
%			92%	5%	2%	1%	97%

¹ State 3 and 4 deficiencies are mainly coal tar epoxy coating deficiencies

F. Observations

1. Community Costs

The project costs include \$871,000 in Shoreline Substantial Development Permit mitigation measure costs as outlined below.

**Eagle Harbor Repair Facility
Community Costs**

Mitigation Measure	Budget
North fence with signs	\$28,600
Fencing	40,500
Pedestrian lighting	66,000
Physical security	300,000
Landscaping	23,800
Screen wall	393,000
Trail	19,000
Total	870,900

2. Project Management

The project is managed by state staff.

3. Budget

Outlined below is the modified budget for this project which reflects changes in scope and phasing. The budget reflects delaying full build out of the annex for the training center and storage.

**Eagle Harbor Repair Facility
Budget Modifications**

(\$000s)

	2003-09 Prior & Budget V2007-1	2003-09 Master Plan (Planned)	2003-09 Revised Scope (Planned)
Maintenance Building	15,706	19,919	18,540
Blue Building/Annex	1,270	17,990	5,144
Archaeologist		18	18
Yard Pier	5,804	563	563
Utilities	1,887	1,681	1,138
Slip B		7,434	7,434
Slip E	6,337	104	104
LEEDS		659	
WSF Parking (Stripe & Light)		141	141
Moving & Labor Costs		921	859
SSDP Mitigation Measure		933	871
Trask Pier (POF tie-up)	2,942	98	98

	2003-09 Prior & Budget V2007-1	2003-09 Master Plan (Planned)	2003-09 Revised Scope (Planned)
Bulkhead/Rip Rap	334		
Eagle Harbor Planning	800	207	207
Pier 1	47		
Weld Shop	212		
Tool Room	157		
Right of Way - Winslow Property	2,000	2,000	2,000
Total	37,496	52,668	37,117
Spent Unfunded Scope (\$2,358)			
H-Span (1,500 included in Slip B above)			
Previous Projects (123)			
Shoreline Redesignation Effort		77	77
Resolve DNR Lease		26	26
Covenant Resolution		8	8
KPFF effort Jan 03- Jan 05		235	235
Directors Redirectives		277	277
Rebuild P3e Schedule to new standards		98	98
Public Disclosure Request		5	5
Unfunded Total		726	726
Grand Total		53,394	37,843
Change from V2007-1 Budget		15,898	347

4. Master Plan

An analysis was performed in consideration of consolidating storeroom functions and relocating the contents from the 6th Avenue warehouse to Eagle Harbor. See the High Level Logistics Study by CNA Consulting.

5. Schedule

- Project #1 – Slip conversion, completed 2006.
- Project #2 – Dock/Pier repairs, remodel Maintenance Building, estimated \$21.2 million, 2007 start anticipated.
- Project #3 – Maintenance Building Annex (first phase), \$6.4 million estimated, on hold. As noted above the schedule has slipped due to permitting problems.

6. Cost-benefit analyses/life-cycle cost analyses

WSF has conducted a cost-benefit analysis on the potential relocation of the repair facility to Seattle. A report, *Condition Evaluation and Seismic Study of Eagle Harbor Building A and Yard Piers* February 2005 by Berger/Abam, compared the life-cycle costs of building new piers compared to maintaining the existing piers. The study concluded that “the likely cost for maintaining the piers for another 30 years of service and

providing a seismic retrofit for both would be approximately one-fourth the cost of demolishing the entire piers (\$25 per square foot) and building new (\$125 per square foot).” (p 1-1)

7. Condition

The Eagle Harbor terminal is in good condition, with the inspection reports showing that the terminal has 92% of its inspected structures in good condition and an additional 5% in fair condition. Inspections conducted as part of the Berger/Abam study found that the “general conditions of the pier elements ranged from excellent to fair.” (p. 1-1)

There are several concerns with the foundations of the Maintenance Building and Yard Pier, and concerns with Slip E that are not represented in the overall ratings, which summarize all structures at the facility. These concerns include:

- Rotting timber piles with 75% capacity or less (Trask Pier, Yard Pier, and underneath Maintenance Building)
- Rotting timber caps and stringers on the docks
- Timber piles not accessible for inspection
- Inadequate load bearing member support for the columns in the Maintenance Building

The maintenance building structure and foundation, which are not included in the bridge inspection reports have been in service for over 60 years. Awareness of seismic risk in the region, especially waterfront sites like Eagle Harbor, has increased as a result of the 28 February 2001 Nisqually Earthquake. The issues of structural age, condition, maintenance costs and newly appraised environmental loading were considered by WSF.

CONCEPT DESIGN

ROUNDHOUSE
 FIGURE
 8-1

ILLUSTRATIVE SITE PLAN
 PHASE: CONCEPT DESIGN
 DATE: 2-16-2006

EAGLE HARBOR MAINTENANCE FACILITY

WASHINGTON STATE
 DEPARTMENT OF TRANSPORTATION
 WASHINGTON STATE FERRIES

ROUNDHOUSE
 FIGURE
 8-1

EGFND

TRUCK ACCESS.
EA

EA

22

TRANSIENT LIFE SAVING, OPERATIONAL
& TRAINING EQUIPMENT STORAGE

WORK VEHICLES

MATERIAL & WASTE STORAGE

53

MATERIAL & WASTE STORAGE

EAGLE HARBOR

Plot Date: 2-16-2006


DRAFT 15% CONCEPT DESIGN

החל: 9170-90 שנים 9169 9168 9167 9166 9165 9164 9163 9162 9161 9160 9159 9158 9157 9156 9155 9154 9153 9152 9151 9150 9149 9148 9147 9146 9145 9144 9143 9142 9141 9140 9139 9138 9137 9136 9135 9134 9133 9132 9131 9130 9129 9128 9127 9126 9125 9124 9123 9122 9121 9120 9119 9118 9117 9116 9115 9114 9113 9112 9111 9110 9109 9108 9107 9106 9105 9104 9103 9102 9101 9100 9099 9098 9097 9096 9095 9094 9093 9092 9091 9090 9089 9088 9087 9086 9085 9084 9083 9082 9081 9080 9079 9078 9077 9076 9075 9074 9073 9072 9071 9070 9069 9068 9067 9066 9065 9064 9063 9062 9061 9060 9059 9058 9057 9056 9055 9054 9053 9052 9051 9050 9049 9048 9047 9046 9045 9044 9043 9042 9041 9040 9039 9038 9037 9036 9035 9034 9033 9032 9031 9030 9029 9028 9027 9026 9025 9024 9023 9022 9021 9020 9019 9018 9017 9016 9015 9014 9013 9012 9011 9010 9009 9008 9007 9006 9005 9004 9003 9002 9001 9000 8999 8998 8997 8996 8995 8994 8993 8992 8991 8990 8989 8988 8987 8986 8985 8984 8983 8982 8981 8980 8979 8978 8977 8976 8975 8974 8973 8972 8971 8970 8969 8968 8967 8966 8965 8964 8963 8962 8961 8960 8959 8958 8957 8956 8955 8954 8953 8952 8951 8950 8949 8948 8947 8946 8945 8944 8943 8942 8941 8940 8939 8938 8937 8936 8935 8934 8933 8932 8931 8930 8929 8928 8927 8926 8925 8924 8923 8922 8921 8920 8919 8918 8917 8916 8915 8914 8913 8912 8911 8910 8909 8908 8907 8906 8905 8904 8903 8902 8901 8900 8899 8898 8897 8896 8895 8894 8893 8892 8891 8890 8889 8888 8887 8886 8885 8884 8883 8882 8881 8880 8879 8878 8877 8876 8875 8874 8873 8872 8871 8870 8869 8868 8867 8866 8865 8864 8863 8862 8861 8860 8859 8858 8857 8856 8855 8854 8853 8852 8851 8850 8849 8848 8847 8846 8845 8844 8843 8842 8841 8840 8839 8838 8837 8836 8835 8834 8833 8832 8831 8830 8829 8828 8827 8826 8825 8824 8823 8822 8821 8820 8819 8818 8817 8816 8815 8814 8813 8812 8811 8810 8809 8808 8807 8806 8805 8804 8803 8802 8801 8800 8799 8798 8797 8796 8795 8794 8793 8792 8791 8790 8789 8788 8787 8786 8785 8784 8783 8782 8781 8780 8779 8778 8777 8776 8775 8774 8773 8772 8771 8770 8769 8768 8767 8766 8765 8764 8763 8762 8761 8760 8759 8758 8757 8756 8755 8754 8753 8752 8751 8750 8749 8748 8747 8746 8745 8744 8743 8742 8741 8740 8739 8738 8737 8736 8735 8734 8733 8732 8731 8730 8729 8728 8727 8726 8725 8724 8723 8722 8721 8720 8719 8718 8717 8716 8715 8714 8713 8712 8711 8710 8709 8708 8707 8706 8705 8704 8703 8702 8701 8700 8699 8698 8697 8696 8695 8694 8693 8692 8691 8690 8689 8688 8687 8686 8685 8684 8683 8682 8681 8680 8679 8678 8677 8676 8675 8674 8673 8672 8671 8670 8669 8668 8667 8666 8665 8664 8663 8662 8661 8660 8659 8658 8657 8656 8655 8654 8653 8652 8651 8650 8649 8648 8647 8646 8645 8644 8643 8642 8641 8640 8639 8638 8637 8636 8635 8634 8633 8632 8631 8630 8629 8628 8627 8626 8625 8624 8623 8622 8621 8620 8619 8618 8617 8616 8615 8614 8613 8612 8611 8610 8609 8608 8607 8606 8605 8604 8603 8602 8601 8600 8599 8598 8597 8596 8595 8594 8593 8592 8591 8590 8589 8588 8587 8586 8585 8584 8583 8582 8581 8580 8579 8578 8577 8576 8575 8574 8573 8572 8571 8570 8569 8568 8567 8566 8565 8564 8563 8562 8561 8560 8559 8558 8557 8556 8555 8554 8553 8552 8551 8550 8549 8548 8547 8546 8545 8544 8543 8542 8541 8540 8539 8538 8537 8536 8535 8534 8533 8532 8531 8530 8529 8528 8527 8526 8525 8524 8523 8522 8521 8520 8519 8518 8517 8516 8515 8514 8513 8512 8511 8510 8509 8508 8507 8506 8505 8504 8503 8502 8501 8500 8499 8498 8497 8496 8495 8494 8493 8492 8491 8490 8489 8488 8487 8486 8485 8484 8483 8482 8481 8480 8479 8478 8477 8476 8475 8474 8473 8472 8471 8470 8469 8468 8467 8466 8465 8464 8463 8462 8461 8460 8459 8458 8457 8456 8455 8454 8453 8452 8451 8450 8449 8448 8447 8446 8445 8444 8443 8442 8441 8440 8439 8438 8437 8436 8435 8434 8433 8432 8431 8430 8429 8428 8427 8426 8425 8424 8423 8422 8421 8420 8419 8418 8417 8416 8415 8414 8413 8412 8411 8410 8409 8408 8407 8406 8405 8404 8403 8402 8401 8400 8399 8398 8397 8396 8395 8394 8393 8392 8391 8390 8389 8388 8387 8386 8385 8384 8383 8382 8381 8380 8379 8378 8377 8376 8375 8374 8373 8372 8371 8370 8369 8368 8367 8366 8365 8364 8363 8362 8361 8360 8359 8358 8357 8356 8355 8354

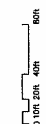
FIGURE 8-1

ILLUSTRATIVE SITE PLAN
PHASE: CONCEPT DESIGN
DATE: 2-16-2006

EAGLE HARBOR MAINTENANCE FACILITY



WASHINGTON STATE
DEPARTMENT OF TRANSPORTATION
WASHINGTON STATE FERRIES



ng Study ation and ect Review ct Reviews

Edmonds

A. Project

There is one project at Edmonds with a budget of \$1.5 million for the 2005-07 biennium and \$57.6 million for the 2005-21 biennia. The project will move the terminal two-thirds of a mile to property formerly owned by Unocal. The project PIN is defined by WSF as funding "...the legislatively determined state share of a partnership between the City of Edmonds (Sponsor) and WSF to build the Edmonds Multimodal Terminal. The WSF project contributes only part of the funding for the acquisition of a new site and building of a new ferry terminal of similar capacity to the existing terminal. The terminal will have a single slip and a passenger overhead loading. It will also provide for grade separation between ferry and rail traffic. When increased ridership warrants and additional funding is available, the facility's capacity will be expanded and multimodal facilities added." (WSF Edmonds Terminal Project Data Notebook Section C)

Edmonds Project

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
910413M	Edmonds Multimodal Terminal	1,500	3,000	3,000	4,295	23,170	22,642			57,607
	Edmonds Total	1,500	3,000	3,000	4,295	23,170	22,642	0	0	57,607
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total

B. Project Expenditures 2003-07 Biennia

Project expenditures to date from state funds are \$8.5 million. In addition to the \$57.6 million in the 2005-21 biennia funding, the project has funding of \$16.8 million from the United States Department of Transportation (USDOT), of which \$4.5 million has been spent primarily on the Environmental Impact Statement (EIS).

Edmonds Project Expenditures Life to Date (as of July 2006)

(\$000s)

PIN		July 06
ED02.M000	Project Management	135
ED02.S000	Scoping and Planning	8
ED02.E	Permitting	77
ED02.N000	Public Involvement	1
ED02.A000	Real Estate Acquisition	8,233
ED02.D	Design Report	16
Federal	EIS	4,542
	Total	13,011

Source: WSF Earned Value Report 8/14/06

C. Project Status/WSF Identified Risks

- **Property Acquisition:** A portion of the site has been acquired from Unocal contingent upon Unocal undertaking the environmental clean-up and mitigation of the site.

Appraisal of the upper yard property is complete and an offer should be made in September 2006.

- A Final EIS was issued in November 2004, with a preferred alternative identified. The preferred alternative is identified as the Point Edwards site. When fully complete, the new terminal would have three slips, space for 820 waiting vehicles and a multimodal center in the lower yard. The multimodal center would include a new railroad station, bus terminal, 460-space parking garage, 90-space short-term parking lot, 30-space employee parking area, and weather-protected pedestrian walkway connecting people from the multimodal center to the ferry terminal.
- WSF has assumed the project management role, formerly provided by the City of Edmonds, for the design and permitting process.
- Risks:
 - Existing state and partnership funding will not complete the initial phase of construction. Thirty-seven million dollars (\$37 million) in May, 2006 dollars is needed to complete the first construction; \$65 million in May, 2006 dollars more will complete the final phase of terminal construction
 - The project is relying on Regional Transportation Improvement District (RTID)/Sound Transit 2 (ST 2) funding. Existing state funding will not allow for a functioning terminal. (WSF Terminal Engineering Progress Report Sept. 06)

D. Project Scope, Schedule and Budget Changes

A separate Project Identification Number (PIN) was used for property acquisition, PIN 910413N0. WSF used \$7.8 million from this PIN along with \$375,000 transferred from the project PIN (910413M) for acquisition of the Chevron/Unocal property in the 2003-05 biennium.

The Edmonds Multimodal Terminal project, PIN 910413M, has changed from providing a small amount of funds to the City of Edmonds to supporting right-of-way, design and construction of the new terminal.

1. Scope Changes 2003-2006

As noted above, the PIN is described as rebuilding a terminal with similar capacity to the current one. The current Edmonds terminal has "...a single slip with ADA-compliant overhead loading for pedestrians accessed from a new, temporary, terminal building. ... Five holding lanes served by three toll booths are located upland a couple of blocks ...approximately 160 vehicles can fit in this area ...the causeway and trestle have three holding lanes that are each about 20 vehicles long..." (Draft Long-Range Strategic Plan Technical Appendix G p. 45)

The project as now planned is for a much larger capacity and is no longer to replace the terminal with something that is similarly sized.

In 2003 the project was described as contributing funds to a partnership with the City of Edmonds in relocating and building a new Multimodal Terminal (Edmonds Crossing Multimodal Terminal Project).

In March 2004, the project was described as funding the new Edmonds Crossing Multimodal Terminal with funds provided to support ongoing design phase activities with the City of Edmonds. The new terminal will relieve congestion and problems on local streets; improve pedestrian and vehicle safety; and allow WSF to meet ridership demand in the future. This new facility will be built in multiple phases. The Project Control Form July 7, 2004 goes on to state: “In addition to the \$2.2 million in design support, the revised project funds the first phase of the Edmonds Crossing Multimodal Terminal. This phase builds a new terminal of similar capacity to the existing terminal at the new site, with the addition of a grade separation between ferry and rail traffic.... Additionally, the new terminal will help WSF meet projected ridership growth on the route.”

In July 2004, the V2005-3A statement notes that the scope will include construction of the ferry terminal, including possible expansion. This is the first reference to expansion of the new terminal rather than replacing the existing terminal with one that is similar in size.

2. Budget Changes 2003-2006

The budget has grown from an original 2003 design budget of \$2.2 million for engineering to include additional engineering, construction and right-of-way funding.

Edmonds Multimodal Terminal Budget
(\$000s)

	LEAP 2003	LEAP 2004	LEAP 2004	LEAP 2005			LEAP 2006
	V2003- 7	V2005- 2	V2005- 3	05 LEGFIN	V2005- 3A	V2005- 4	V06 LEGFI N
Preliminary Engineering	2,200	2,200	18,898	10,549	18,898	18,898	10,146
Construction			50,231	25,116	50,231	50,231	47,758
Right of Way							375
Total	2,200	2,200	69,129	35,665	69,129	69,129	58,279

Project Schedule

The schedule in July 2004 called for construction to get underway in the 2005-2015 ten-year programming period, with construction of the ferry terminal including possible expansion and multimodal facilities, completed after 2015. The schedule has remained consistent.

E. Condition Report

Life-cycle and Condition Rating Edmonds

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2005 ¹	98%	52,365	41,866	6,245	4,243	24	
%			80%	12%	8%	0%	92%

¹ State 3 is 95% coal tar epoxy coating failure, state 4 includes one dolphin

F. Observations

1. Long-Range Plan

Throughput, scope and new terminal sizing are based on the 2030 long-range ridership projections. The plan assumes that two slips of the terminal will be complete by 2017 to service what is anticipated to be a third Jumbo class vessel in the summer months on the Edmonds-Kingston route.

2. Project Management

WSF is in the process of assuming project management responsibility. “In recent months, WSF has expanded its available workforce, seen changes in the level of accountability required for projects, and issued a draft Long-Range Plan that identifies more detailed goals associated with the Edmonds terminal. These changes have played a major role in our decision to take a more active role in the Edmonds Crossing project and influenced the proposal to change the management structure for the project.” (Letter WSF to City of Edmonds August 22, 2006 p.1)

3. Budget

WSF has identified as the primary risk to this project the lack of funding to complete a workable terminal without support from either RTID or ST2. The terminal portion of the project under the preferred alternative is estimated at \$167.1 million; with Phase I estimated at \$107.6 million and an additional \$57.1 million required to complete full project buildout of the Phase 2 facilities. (All costs in May 2006 dollars.)

4. RTID & ST 2

As of July, 2006 the RTID Blueprint for Progress list includes \$123.4 million for the Edmonds Crossing Project. ST 2 includes \$50.2 to \$57.8 million for the project. Both proposals are being reviewed in light of cost increases. Whether the Edmonds project will remain on either or both lists for a possible November 2007 ballot issue is unknown.

5. Master Plan

- a. Vehicle Holding Area: The master plan provides a holding area for 820 vehicles and was established using worst-case scenarios of 1) level of service A for median day, 2) projected number of vehicles during the 4-hour peak, 3) meeting a level of service for

the 30th highest day of ridership. The level of service standard for this route is a one boat wait – which is 144 cars.

6. Schedule

- 2012 – Start construction
- 2015 – Operationally complete

7. Cost-Benefit Analysis/Life-cycle Cost Analyses

An analysis of operating costs has been undertaken which shows much higher operating costs for this terminal than the existing one. In particular, the Environmental Impact Statement (EIS) for the Edmonds project shows that the total operating cost for phase one of the preferred alternative would be \$3.5 million, and for phase two, \$4.7 million. The estimates for the new terminal include operating and maintenance costs for the multimodal center. Some of these costs would transfer to Sound Transit, Amtrak and Community Transit although final operational agreements have not been reached. By comparison the 2003 route summary statement shows the operating cost for both the Edmonds and the Kingston terminals was \$4.5 million. How this will impact future farebox recovery is not clear.

Edmonds Annual Operation & Maintenance Costs¹

(2003 dollars, 000s)

	Operation	Maintenance	Total
Phase I Ferry terminal and holding area	3,567	941	4,508
Phase II Multimodal center, holding area, parking garage	3,179	1,489	4,668
Route Summary - Both Kingston-Edmonds terminals	3,768	749	4,517

Source: Edmonds Crossing Final EIS p. 5-2

8. Flexibility

This terminal can be, and is planned to be, staggered with ridership growth. However, even the first phase will include much larger vehicle holding areas and terminal size than the current terminal.

9. Environmental

The primary environmental issue is cultural resources. WSF's quarterly progress report indicates that they have reached agreement with three tribes and are engaged in further discussion with one other.

10. Condition

The existing Edmonds terminal is in good condition, with the inspection reports showing that the terminal has 80% of its inspected structures in good condition and an additional 12% in fair condition. WSF plans to re-utilize some of the existing terminal elements when it is torn down.

¹ WSF noted an error in the EIS in December, 2006 correspondence. The Phase I costs operating costs should be \$2,567,000 not \$3,567,000

Fauntleroy

A. Projects

There are two projects at Fauntleroy with budgets of \$150 thousand for the 2005-07 biennium and \$24.8 million for the 2005-21 biennia.

Fauntleroy Projects

		(\$000s)								
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
900005F	Fauntleroy Ferry Terminal Preservation					563	3,042	13,181	7,516	24,302
900005L	Fauntleroy Terminal Preservation	150	350							500
	Fauntleroy Total	150	350			563	3,042	13,181	7,516	24,802

PIN 900005L in the 2005-09 biennia includes \$400,000 for interim trestle preservation and \$100,000 for an emergency generator for the point of sale system. PIN 900005F is for terminal replacement.

B. Project Expenditures 2005-07 Biennium

Project expenditures for PIN 900005L for the 2005-07 biennium are \$2,687.

C. Project Status

The 2005-07 biennium planned projects have not started.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-Cycle and Condition Rating Fauntleroy

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2006 ¹	73%	149,720	146,808	2,719	174	19	
%			98%	2%	0%	0%	100%

¹ State 4 includes one dolphin

F. Observations

1. Long-Range Plan

The Draft Long-Range Strategic Plan assumes no changes at the Fauntleroy terminal in light of constraints imposed by the City of Seattle that would make it difficult to expand. The plan notes that the terminal "...was expanded in 1984 and underwent a major refurbishment in 2002. WSF plans to replace the terminal building during the 2017-19 biennium." (Draft Long-Range Strategic Plan Technical Appendix G p. 31-35)

2. Condition

The Fauntleroy terminal is in good condition, with the inspection reports showing that the terminal has 98% of its inspected structures in good condition and an additional 2% in fair condition.

3. PIN 900005F

The \$24.3 million budget for this PIN for the 13-21 biennia is built from the life-cycle cost model and includes funding to replace all systems, which is unlikely to occur. The budget should be revised if a condition report performance system is developed.

With the exception of \$500,000 in 2005-09, all funding is provided by the 2005 Transportation Partnership Act. This funding is to preserve the north half of the timber trestle, built in 1957 and due for replacement in 1997 (40-year life). Inspection of the trestle indicates that it currently remains serviceable. Replacement is scheduled for 2017, when it will be 60 years old. Future inspections may identify a need to accelerate replacement. None of the funding is for expansion of the terminal.

Friday Harbor

A. Projects

There are three projects at Friday Harbor with budgets of \$7.5 million for the 2005-07 biennium and \$22.7 million for the 2005-21 biennia.

Friday Harbor Projects

		(\$000s)							
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21
900028R	Friday Harbor Master Plan	250							250
900028S	Friday Harbor Additional Holding Area	150	600						750
900028Q	Friday Harbor Terminal Preservation	7,121				3,039	5,398	4,042	2,076
	Friday Harbor Total	7,521	600			3,039	5,398	4,042	2,076
									22,676

B. Project Expenditures 2005-07 Biennium

Project expenditures are noted below from the 2005-07 biennium, through August 2006.

Friday Harbor Project Expenditures 2005-07 Biennium (August 2006)

		(\$000s)	
PIN	Project	Aug. 06	
900028Q	Terminal Preservation		
	006737 Terminal Preservation	4,763	
	007034 Tie-up Slip	1,556	
	007090 Terminal Building Remodel	514	
	XL2678 Tie-up Slip Design	23	
	XL 2751 Terminal Building Remodel	77	
	Total	6,933	
900028R	Master Plan		
	MS5484 Transportation Planning	76	
900028S	Additional Holding Area	0	
	Total Friday Harbor Projects	7,009	

C. Project Status/WSF Identified Risks

- The Friday Harbor terminal preservation project was completed in 2006. Work included the repair or replacement of the towers, transfer span and apron, bridge seat, wingwalls and dolphins. In addition, a new restroom facility was added and the tie-up slip was reconstructed.
- The additional holding area project was deleted from the 2006 LEAP project list. It was intended to improve the Park & Ride lot to encourage more walk-on traffic. (See Draft Long-Range Strategic Plan, Technical Appendix G p. 88)

D. Project Scope, Schedule and Budget Changes

E. Condition Report

Life-cycle and Condition Rating Friday Harbor

Yr. Insp.	Life Cycle Rating	Units					Percent Good or Fair Condition
	Vital	Measured	1	2	3	4	
2005 ¹	82%	52,833	44,817	7,915	148	3	
%			85%	15%	0%	0%	100%

¹Four dolphins listed as State 3, one listed as State 4

F. Observations

1. Future preservation projects

The preservation budget contemplates \$3 million in the 2013-15 biennium to replace dolphins, one of which is a steel dolphin installed in 1995. WSF notes: “Steel dolphin # 2494 is an old-style 2-pile dolphin that is incorrectly given a 25-year life in the life-cycle cost model. It is expected to need replacement by 2015. As the time for replacement approaches, it will be inspected and a final determination will be made.” (WSF Dec. 2006)

In the 2017-21 biennia major work is planned on the upland parking, crew quarter areas, the trestle and replacing a terminal building constructed in 1992. The budget includes replacement of all systems. This should be reviewed once the life-cycle cost model is updated based on condition and revised standard life-cycles.

2. Condition

The Friday Harbor terminal is in good condition, with the inspection reports showing that the terminal has 85% of its inspected structures in good condition and an additional 15% in fair condition.

Keystone

A. Project

There is one project at Keystone with a budget of \$2.2 million for the 2005-07 biennium and \$31.2 million for the 2005-21 biennia.

Keystone Project
(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
902017J	Keystone Alternative	2,200	16,231	12,800						31,231
	Keystone Total	2,200	16,231	12,800						31,231
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total

B. Project Expenditures 2005-07 Biennium

Project expenditures are shown below for the 2005-07 biennium through August 2006.

Keystone Project Expenditures 2005-07 Biennium (August 2006)
(\$000s)

PIN	Project	Aug. -06
XL2460	Terminal Preservation Alternative	840,115

C. Project Status/WSF Identified Risks

- Study: The Keystone Harbor Study was completed January 7, 2005. The study identified four alternatives: relocate the jetty 300 feet to the east and widen the harbor to the east to accommodate a larger vessel with capacity between 124 and 144 cars; extend the jetty 600 feet into the water and widen the harbor to the west to accommodate a larger vessel between 124 and 144 cars; use the existing harbor and acquire new, unique vessels with a special propulsion system that would allow them to operate in the existing Keystone Harbor; or use the existing harbor and terminal and acquire new vessels that are similar in size to the existing vessels, approximately 65 car capacity.
- Options currently being studied: The September 2006 terminal engineering progress report identifies the project as including options to restore the terminal and prepare for the retirement of the Steel Electric vessels. Options include:
 - Relocation of the jetty 300 feet to the east and dredging the entrance to the harbor to the east to allow for service with an Issaquah class vessel.
 - Extend jetty and widen the harbor entrance to the west to allow for service with an Issaquah class vessel.
 - Utilize the existing harbor with a new 100-car/smaller draft vessel that has a special propulsion system.
 - Utilize existing harbor with a new vessel with a similar hull size to the existing Steel Electric serving the Keystone Port Townsend route.
 - Out of harbor alternative at Red Barn Site.
- Risks: (WSF Terminal Engineering Progress Report Sept. 2006)
 - Overall WSF financial concerns

- Vessel decision
- State Parks, Corp of Engineers, Legislator concerns, Ebey's Landing. (Note the harbor and terminal are part of Ebey's Landing National Historic Reserve)

D. Project Scope, Schedule and Budget Changes

E. Condition Report

Life-cycle and Condition Rating Keystone

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2006	30%	11,427	9,754	1,538	130	5	
%			85%	13%	1%	0%	99%

F. Observations

1. Harbor Study and Long-Range Plan

In conducting the analysis of these four alternatives the Keystone Harbor Study concluded that option four, using the existing harbor and acquiring new vessels the size of the current ones, would have the highest total life-cycle costs because "...the additional cost of a third vessel on the route, and the fact that the costs cannot be shared with the rest of the system." (p.2) Both of these assumptions are reliant on the forecasts of ridership. It is assumed that given ridership projections "the Keystone Special vessel would have no utility elsewhere in the system, as its size and speed would not meet service schedules and capacity needs on any other route beyond 2010". (p. 20) The study also states that "[d]uring the period FY 2011 through FY 2017, there will be travel demand for two (Keystone Special) vessels in the summer and one vessel in the winter....During the period FY 2018 through FY 2041, there will be travel demand for three vessels in the summer and two in the winter." (Keystone Ferry Terminal Study Cost Analysis of Alternate Courses of Action p. 11) If these two assumptions related to ridership increases are not made, the total life-cycle cost of the Keystone Special vessel would be less than the other three alternatives.

2. Port Townsend

The Keystone and Port Townsend terminal projects are interrelated. "The root need for examining alternatives to the existing Keystone terminal and Port Townsend terminal is WSF's decision to replace its 76-year-old Steel Electric class vessels, the only WSF vessel class that can use the existing Keystone harbor. ... Keystone harbor and the existing facilities at both Keystone and Port Townsend need to be either upgraded to accommodate the Issaquah 130 Class or other vessel with similar characteristics ... or the terminals need to be relocated and redeveloped at an alternative site where the navigational and upland holding and ingress/egress requirements of the replacement vessels can be more effectively accommodated." (WSF Purpose and Need Nov. 24, 2003

p. 2) Additional costs to accommodate the larger vessels at the Port Townsend terminal were not considered in the Keystone Harbor Study.

3. Keystone Cancellations

Because of low tides, strong currents, wind and wave conditions as well as fog, vessels have grounded in the Keystone harbor. WSF has adopted a policy that ferries may not enter the harbor when cross-currents at the mouth of the harbor exceed 3.5 knots or if fog limits visibility. WSF is able by consulting tide charts to schedule these cancellations. In 2001 there were 91 scheduled cancellations, in 2002, 91 scheduled and 6 unscheduled (due to fog) cancellations, in 2003, 83 scheduled and 12 unscheduled cancellations. The scheduled cancellations represent approximately 2% of the of the 4,410 annual scheduled trips from Keystone. (WSF Purpose and Need Nov. 24, 2003 p. 3) The WSF web site notes that the ability to schedule cancellations makes this a workable situation. “Yes (it works). The traveling public understands the concern for safety, and appreciates the opportunity to plan ahead and minimize the inconvenience.” (www.wa.wsdot.gov/ferries)

4. Project Management

The project is being managed by WSF staff.

5. Budget

The 2005-07 biennium budget total is \$31.3 million, of which \$25.5 million is for construction. The Keystone Harbor Study identified the terminal construction costs for the two options that do not use the existing terminal as ranging from \$31 million to \$51 million. It is likely that the cost of relocating the terminal will be higher than the amount allocated.

6. Schedule

- 2004 – WSF begin EIS process and harbor alternatives study
- June 2004 – Keystone Citizen Advisory Group formed
- Winter 2005 – WSF submits Keystone Harbor Study recommending four alternatives
- Spring 2005 – \$31.4 million allocated for the project
- Spring 2006 – WSF begins SEPA environmental review
- Winter 2007 – Draft EIS scheduled for public comment
- 2008 – Final EIS issued
- 2008-2009 – Port Townsend terminal construction
- 2009 – Hood Canal bridge closure
- 2009-2010 – Keystone preservation or reconstruction begins

7. Cost-benefit analysis/life-cycle cost analyses

A cost-benefit analysis was done as part of the Keystone Harbor plan. See discussion above.

8. Flexibility

Potential phasing is not available at this point.

9. Impact on farebox recovery

The Port Townsend-Keystone route has one of the lowest farebox recovery rates, recovering 58% of costs in 2005. The relocated terminal operating costs are \$115,000 higher per year than the jetty extension options. Fare box recovery rates have not been analyzed for the options.

10. Condition

The Keystone terminal is in good condition, with the inspection reports showing that the terminal has 85% of its inspected structures in good condition and an additional 13% in fair condition.

Out-of-Harbor Alternative Added

WSF Responds to Comments from Agencies, Tribes and Others on Need for Thorough Analysis

During the scoping period, permitting agencies and tribes (including the U.S. Army Corps of Engineers, Washington Department of Fish and Wildlife, the National Park Service, and the Swinomish Tribe) asked WSF to study an alternative outside Keystone Harbor. Commenters noted the need to compare a wide range of alternatives in order to ensure a balanced Environmental Impact Statement (EIS). WSF's technical team screened several locations along Admiralty Inlet before selecting a site east of Keystone Spit (see photo below) as the most feasible. This location will be considered along with the four other terminal and vessel alternatives that were presented during the scoping period.

"The process requires a complete, balanced analysis that weighs the impacts of both in and out of harbor options — in-harbor options may have impacts that the out-of-the-harbor option doesn't, and without studying them, sound environmental decisions cannot be made."

- Scoping Comment Submitted
April 2006

Keystone Project Alternatives

The following alternatives will be studied in the Environmental Impact Statement*:

- A** Relocate the jetty 300 feet to the east and widen the harbor to accommodate a larger vessel. The larger vessel would have a capacity of between 124-144 vehicles.
- B** Extend the jetty 600 feet into the water and widen the harbor to the west to accommodate a larger vessel. The larger vessel would have a capacity of between 124-144 vehicles.
- C** Use the existing harbor and acquire new, unique vessels with a special propulsion system that would allow them to operate in the existing Keystone Harbor.
- D** Use the existing harbor and terminal and acquire new vessels that are similar in size to the existing Steel Electrics (approximately 65-car capacity).

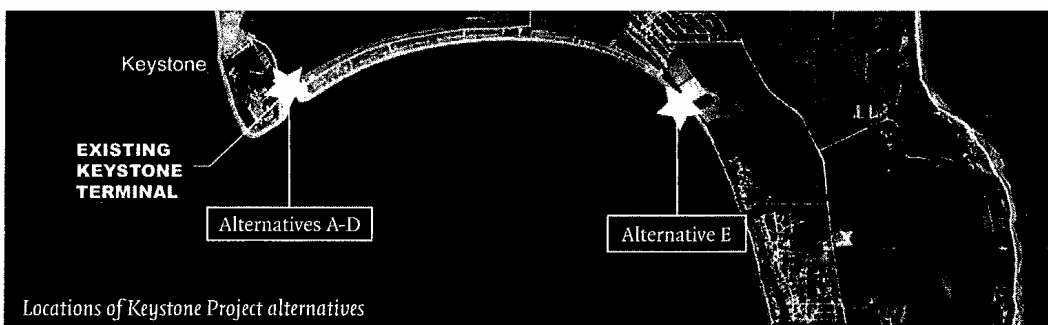
- E** Relocate the terminal to a site east of the existing terminal and Keystone Spit. The relocated terminal would be built to accommodate a 124-144 vehicle vessel.

- F** No action alternative.

All of these alternatives:

- Provide the opportunity to integrate the terminal design with the area's natural historical setting.
- Include terminal preservation work and expanded vehicle holding.
- Replace the existing terminal's creosote-coated timber berthing structures.

* Detailed drawings of each alternative are available on the project Website at: www.wsdot.wa.gov/ferries/projects/keystoneharbor



Kingston

A. Projects

There are three projects at Kingston with budgets of \$987 thousand for the 2005-07 biennium and \$29.3 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Kingston Projects

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
910414R	Kingston Site Planning Study		260							260
910414N	Kingston Terminal Preservation	987	3,838	1,100		636	1,177	6,044	11,451	25,233
999940D	Catch-Up Preservation									
	K13 Dolphin Replacement			3,841						3,841
	Kingston Total	987	4,098	4,941		636	1,177	6,044	11,451	29,334

B. Project Expenditures 2005-07 Biennium

Project expenditures are noted below from the 2005-07 biennium, through August 2006. No expenditures have been made from the two multimodal projects, with the preservation and trestle improvement projects bearing all expenses for right-of-way acquisition and terminal master planning.

Kingston Project Expenditures 2005-07 Biennium (August 2006)

(\$000s)

PIN	Project	Aug 06
007012	Toll Booth Replacement	658
XL1795	Vashon Transfer Span Retrofit	2
XL2343	Hydraulic Actuated Span	123
XL2404	Toll Booth Replacement	9
XL2897	Emergency Generator Replacement	15
	Total	807

C. Project Status/WSF Identified Risks

- Toll Booth Replacement: The toll booths have been rebuilt.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-Cycle and Condition Rating Kingston

Yr. Insp.	Life Cycle Rating	Units	State				Percent Good or Fair Condition
	Vital	Measured	1	2	3	4	

2005	96%	138,645	126,127	11,213	1,305	0	
%			91%	8%	1%	0%	99%

F. Observations

1. Non-Life-Cycle Preservation Budgets

The Kingston preservation budget includes a number of non-life-cycle cost items. These are outlined below.

Kingston Preservation Budget Non-Life-Cycle Items
(\$000s)

Non-Life-Cycle Item	05-07	05-21
Transfer Span Retrofit		2,643
Overhead Control System Modifications		95
Right-of-Way (Terminal Property)	15	1,115
Back-up Generator	437	437
Total Non-Life-Cycle	452	4,290
Total Preservation Budget	987	29,334
% Non-Life-Cycle	46%	15%

2. Future Preservation Projects

The preservation budget contemplates \$4.2 million of the \$7.2 million budget in the 2015-19 biennia to replace all systems, including the water supply, sewer, storm drainage etc. These systems will not necessarily need replacement. An additional \$12.5 million is planned to replace steel wingwalls and an aluminum overhead loading apron. This should be reviewed once the life-cycle cost model is updated based on condition and revised standard life-cycles. (WSF notes: “The steel wingwalls and OHL aprons are scheduled for replacement in 2021. The wingwalls will be 3 to 4 years beyond their standard life of 25 years. Two aluminum OHL aprons will be 9 years beyond their life. As the time for replacement approaches, these structures will be inspected and a final determination will be made.” (WSF Dec. 2006))

3. Right-of-Way/Planning Study

Under the preservation budget, WSF wants to acquire the property from the Port of Kingston on which the terminal sits, plus other property. The planning study, an improvement project in the 2007-09 biennium budget, would examine site alternatives. These two projects combined would most likely lead to substantial work to examine re-configuration of the Kingston terminal. (WSF notes in December 2006 that this project has been removed from the 2007 capital program list.)

4. Condition

The Kingston terminal is in good condition, with the inspection reports showing that the terminal has 91% of inspected structures in good condition and an additional 8% in fair condition.

Lopez

A. Projects

There are three projects at Lopez with budgets of \$3.3 million for the 2005-07 biennium and \$17.1 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Lopez Projects
(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	05-21
900022G	Lopez Terminal Preservation				2,491	5,000	90	96	4,256	11,933
900022H	Lopez Additional Parking Impr						1,189			1,189
999940D	Catch-Up Preservation									
	LO02 Dolphin Replacement	3,279								3,279
	LO03 Interim Terminal Preservation				313					313
	LO11 Apron Replacement			378						378
	Lopez Total	3,279		378	2,804	5,000	1,279	96	4,256	17,092

B. Project Expenditures

Not applicable to this project.

C. Project Status/WSF

Not applicable to this project.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-cycle and Condition Rating Lopez

Yr. Insp.	Life Cycle Rating	Units	State				Percent Good or Fair Condition
	Vital	Measured	1	2	3	4	
2005 ¹	72%	52,390	30,683	6,466	15,231	10	
%			59%	12%	29%	0%	71%

¹ State 2 and state 3 items are almost 100% coal tar epoxy coating failures

F. Observations

1. Future Preservation Projects

The future preservation projects should be reviewed when the life-cycle cost model is updated. The projects include funding to replace all systems in the 2015-21 biennia as well as replacement of a concrete riprap not due for replacement until 2031.

2. Added Parking

WSF has budgeted to add parking at Lopez in the 2015-17 biennium. The Draft Long-Range Strategic Plan notes that WSF owns 50 parking spaces on the Island and San Juan County owns another 17. The Plan estimates parking demand for 2,893 spaces in 2012. (Draft Long-Range Strategic Plan Technical Appendix G p. 80)

3. Condition

The Lopez terminal is in fair condition, with the inspection reports showing that the terminal has 59% of its inspected structures in good condition and an additional 12% in fair condition.

Mukilteo

A. Projects

There are two projects at Mukilteo with budgets of \$14.5 million for the 2005-07 biennium and \$130.9 million for the 2005-21 biennia. Project J is for federal and local grants for the project and K is for state funds.

Mukilteo Projects

		(\$000s)							Total
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	
952515J	Mukilteo Multimodal Terminal	4,279	8,370						12,649
952515K	Mukilteo Multimodal Terminal	10,249	60,724	47,251					118,224
	Mukilteo Total	14,528	69,094	47,251					130,873

B. Project Expenditures Life to Date

Project expenditures life to date are \$11.3 million through July 2006.

Mukilteo Project Expenditures 2001-07 Biennia (July 2006)

(\$000s)				
PIN	01-03	03-05	05-07	Total
Consultant				
952515J		3,839	92	3,931
952515K		1,157	3,218	4,375
Other	1,162			1,162
Sub-Total	1,162	4,996	3,310	9,468
State				
952515J		173		173
952515K		452	1,056	1,508
Other	164			164
Sub-Total	164	625	1,056	1,845
Consultant & State				
952515J		4,012	92	4,104
952515K		1,609	4,274	5,883
Other	1,326			1,326
Total	1326	5,621	4,366	11,313

C. Project Status/WSF Identified Risks

- **Master Plan:** The project is to move the Mukilteo terminal to the Tank Farm property. The master plan was completed in May 2004. The terminal will include a new ferry dock with two slips, a new terminal building with an overhead pedestrian bridge connecting ferry riders to the Sounder station and bus transit center, holding capacity for two boatloads of waiting vehicles, a new access road, a parking garage, four tollbooths, bike facilities and a pedestrian promenade. The second ferry slip and

parking garage will be deferred pending further funding. (www.wsdot.wa.gov/ferries/mukilteoterminal)

- Alternatives Being Considered
 - Upland alternative - \$152 million based on 2005 estimate
 - Less expensive
 - 10 holding lanes
 - Not as efficient
 - Compact alternative - \$168 million based on 2005 estimate
 - Out over the water
 - Preferred: 26 holding lanes
 - More efficient/quicker turnaround
 - No build alternative – not estimated
 - Replace marine facilities
 - Rebuild/renovate existing
- Environmental Impact Statement (EIS): A draft EIS is being prepared.
- Property Acquisition: The Tank Farm property is owned by the Department of the Air Force. The Air Force is planning on transferring the property to the Port of Everett. WSF, Sound Transit and the Port are working on the cost of acquisition.
- Risks: (WSF Terminal Engineering Progress Report Sept. 2006)
 - City has indicated that building a parking structure by 2015 will be a condition of both Sound Transit's and WSF's permits.
 - Need to strive for approval of longest possible window for in-water construction work to avoid delays that could affect the year of opening.
 - Acquisition cost for property on the Tank Farm site could be high.
 - Acquisition was not part of the original legislative scope of work.

D. Project Scope, Schedule and Budget Changes

The project scope, budget and schedule have changed somewhat.

1. Scope Changes 2003-2006

The scope has remained to replace the Mukilteo terminal. However, it is now a phased project and the scope has been changed to include a parking garage.

2. Budget Changes 2003-2006

The total budget for the project has increased from \$122 million to \$136 million, with the change coming in part from additional federal grants. The engineering budget in the K project has absorbed the anticipated right-of-way acquisition costs. The J project budget, which is for local and federal grants, notes in 2004 that federal grants have been obtained (\$7.8 million) that will be used in lieu of Regional Transportation Improvement District (RTID) funding.

Mukilteo Budget Changes 03-06

(\$000s)

PIN	01-03	03-05	05-07	Total
Consultant				
952515J		3,839	92	3,931
952515K	1,162	1,157	3,218	5,537
Sub-Total	1,162	4,996	3,310	9,468
State				
952515J		173		173
952515K	164	452	1,056	1,672
Sub-Total	164	625	1,056	1,845
Consultant & State				
952515J		4,012	92	4,104
952515K	1,326	1,609	4,274	7,209
Total	1,326	5,621	4,366	11,313

3. Schedule Changes 2003-2006

The schedule has changed to anticipate an end date for construction in 2010 rather than 2011.

Mukilteo Schedule

	Aug-03	Jul-04	Feb-05	Mar-06
Engineering	Jun-07	Jun-07	Jun-07	Dec08
Construction	Jun-11	Jun-11	Jun-11	Jun-11

E. Condition Report

Life-cycle and Condition Rating Mukilteo

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2005	63%	23,046	19,567	2,827	618	34	
%			85%	12%	3%	0%	97%

F. Observations

1. Long-Range Plan

Throughput, scope and new terminal sizing are based on the 2030 long-range ridership projections.

2. Project Management

Project management is being done internally with an outside PM consultant (the former terminal engineering director now with Moffat Nichol).

3. Budget

Sound Transit 2 currently has \$12.1 to \$13.9 million identified for a parking garage in Mukilteo in its package. Funding is to construct up to 130 parking stalls for Sounder riders in a joint-use parking garage. It is not known whether the project will remain in the Sound Transit 2 package going to the voters in November 2007.

4. Schedule

- 2005-2007 – Environmental Review
- 2007-mid 2008 – Design
- 2008-2010 – Construction

5. Cost-benefit analysis/life-cycle cost analyses

Have not been done.

6. Flexibility

The terminal will have the opportunity to stagger improvements with ridership since the project will not include the second slip in the first phase.

7. Environmental

There are significant cultural, environmental and permitting issues associated with this project. Archaeological investigations were to be completed by the end of September 2006.

8. Condition

The Mukilteo terminal is in good condition, with the inspection reports showing that the terminal has 85% of its inspected structures in good condition and an additional 12% in fair condition. Approximately \$4.0 million has been spent on the existing terminal since 2000 including the construction of a new dolphin in 2000 and steel wingwalls in 2001. These expenditures were through PIN 952515L, Mukilteo Terminal Preservation.

Orcas

A. Projects

There are three projects at Orcas with budgets of \$967 thousand for the 2005-07 biennium and \$12.9 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Orcas Projects

		(\$000s)								
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
900026L	Orcas Terminal Preservation	917			394	5,828		718		7,857
900026M	Orcas Upland Property Purchase	50								50
	Catch-up Preservation									
	OR02 Dolphin Replacement		4,944							4,944
	Orcas Total	967	4,944		394	5,828		718		12,851

B. Project Expenditures 2005-07 Biennium

Project expenditures are noted below from the 2005-07 biennium, through August 2006.

Orcas Project Expenditures 2005-07 Biennium (August 2006)

(\$000s)		
PIN	Project	Aug. 06
900026L	Terminal Preservation	219
900026M	Upland Property Purchase	0
	Total	219

C. Project Status/WSF Identified Risks

- Terminal Preservation Project: The 2005-07 biennium budget is for an interim trestle preservation project (\$400,000) and the purchase of a back up generator for the electronic fare system (\$517,000). The work has not been completed. The 2007-21 biennia budget includes replacement of the trestle, transfer span retrofit, and replacement of the building and paving of the upland holding area.
- Upland Property Purchase: A master plan has also been completed (\$95,000) to buy an upland parcel to expand a vehicle holding area in the future. This parcel evidently has major rock outcroppings and will require heavy earthwork construction to make it usable.

D. Project Scope, Schedule and Budget Changes

This section summarizes the consultants' review of the change forms provided by WSF on this project.

1. 900026L Terminal Preservation

a. Scope Changes 2003-2006

The project's functional intent has remained the replacement or refurbishment of terminal systems and structures when they reach the end of their useful life. In July 2004 it was

noted that the work includes interim preservation of the trestle, followed later by replacement of the trestle and associated pavement and utilities; retrofit of the transfer span and installation of an emergency generator. In July, 2005 the project was increased to provide for a non-redundant safety retrofit to the hydraulic controls until the redundant H-span retrofit can occur. Programming of the generator was added to the project. “With the implementation of the M_PET system for the vessels, security improvements, and Electronic Fare System equipment, the generator will provide assurance that the network communication systems have the ability to continue to transmit data during local power outages at the terminal. The originally scheduled cost was for construction only, it did not include programming contingencies, sales tax, etc.” (Project Control Form July 18, 2005 p. 1)

b. Budget Changes

The budget changes reflect the addition of funds for the programming of the emergency generator and the change from a ten year to a sixteen year capital program.

Orcas Preservation Budget

(\$000)

	Jul-04	Mar-05
	10 year	16 year
Engineering	702	898
Construction	3,804	6,959
Total	4,506	7,857

E. Condition Report

Life-cycle and Condition Rating Orcas

Yr. Insp.	Life Cycle Rating	Units	State				Percent Good or Fair Condition
	Vital	Measured	1	2	3	4	
2005	75%	29,894	21,320	6,975	1,558	41	
%			71%	23%	5%	0%	95%

F. Observations

1. Project Management

The preservation project is managed by the maintenance staff.

2. Life-Cycle Cost Model

The budget for this project should be reviewed once the life-cycle cost model has been revised. Future projects include replacement of sewer and water systems. The project control forms note that maintenance on the apron has increased its life to forty years, which does not appear to have been modified in the life-cycle cost model inventory. Discussions with the project manager indicate that the trestle is in good shape and does not need to be replaced during this capital program.

3. Non-Life-Cycle Work

The Orcas Island preservation budget for the 2005-07 biennium is 100% for non-life-cycle work and is 35% of the 2005-21 biennia budget.

Orcas Island Non-Life-Cycle Budget

(\$000s)

Non-Life-Cycle Item	05-07	05-21
Trestle Interim Preservation	400	400
Back-up Generator	517	517
Transfer Span Retrofit		3,642
Total Non-life-cycle costs	917	4,559
Total Preservation Budget	917	12,851
% Non-life-cycle	100%	35%

4. Condition

The Orcas Island terminal is in fair condition, with the inspection reports showing that the terminal has 71% of its inspected structures in good condition and an additional 23% in fair condition.

Point Defiance

A. Projects

There are two projects at Point Defiance with budgets of \$368 thousand for the 2005-07 biennium and \$4.3 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Point Defiance Projects

		(\$000s)							
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21
900001F	Point Defiance	368					623	3,041	
	Catch-up Preservation								
	PD08 Apron Replacement				306				
		368			306		623	3,041	
									4,338

B. Project Expenditures 2005-07 Biennium

Project expenditures are noted below for the 2005-07 biennium, through August 2006.

Point Defiance Project Expenditures 2005-07 Biennium (August 2006)

		(\$000s)	
	Project		Aug. 06
007016	Systemwide Hydraulic Controls Upgrade		268
XL2281	Point Defiance/Tahlequah Feasibility Study		1
	Total		269

C. Project Status/WSF Identified Risks

- Preservation: The projects planned for the 2005-07 biennium include \$268,000 for interim trestle preservation and \$100,000 for an electronic generator to back-up the electronic fare system.
- Feasibility study: A feasibility study was conducted using the preservation budget in the 2003-05 biennium. “WSF recently conducted a study of the Pt. Defiance and Tahlequah terminals ...to assess options for expanding operations given ridership growth and the challenges facing the current terminals. No action is planned at this time.” (Draft Long-Range Strategic Plan, Appendix G p 23)

D. Project Scope, Schedule and Budget Changes

This section summarizes the consultants’ review of the change forms provided by WSF on this project.

1. 90001F Terminal Preservation

a. Scope Changes 2003-2006

The project’s functional intent has remained the replacement or refurbishment of terminal systems and structures when they reach the end of their useful life. In February 2005 it was noted that the work includes interim preservation of the trestle, replacement of

dolphins, and preparation of a feasibility study and master plan. In July 2005 it was noted that “condition assessment of the dolphins indicated that their replacement may be postponed.” (Project Control Form July 18, 2005 p. 1) In February 2006 the scope was changed to delete the master plan and include installation of a generator to support the electronic fare collection system.

b. Budget Changes

The budget has decreased for this project from \$4.5 million for a ten year program to \$4.1 million for a sixteen year program. Part of the reduction is the decision not to pursue a master plan for the terminal.

	Feb. 05	Feb. 06
	V2005	V2006
	10 year	16 year
Engineering	879	724
Construction	3,621	3,424
Total	4,500	4,148

E. Condition Report

Life-Cycle and Condition Rating Point Defiance

Yr. Insp.	Life Cycle Rating	Units Measured	1	2	3	4	Percent Good or Fair Condition
2006	99%	37,085	30,167	4,804	2,096	18	
%			81%	13%	6%	0%	94%

F. Observations

1. Project Management

The project is managed by WSF maintenance staff.

2. Life-Cycle Cost Model

The budget for this project should be reviewed once the life-cycle cost model has been revised. The budget in future biennia includes replacement of the trestle, which staff indicates is in good condition and does not need replacement, and the replacement of a steel dolphin that has the standard life-cycle of 25 years in the life-cycle cost model.

3. Non-Life-Cycle Work

The Point Defiance preservation budget for the 2005-07 biennium is 100% for non-life-cycle work. As noted above, this includes trestle interim preservation and a generator.

4. Condition

The Point Defiance terminal is in good condition, with the inspection reports showing that the terminal has 81% of its inspected structures in good condition and an additional 13% in fair condition.

Port Townsend

A. Projects

There are two projects at Port Townsend with budgets of \$3 million for the 2005-07 biennium and \$37.3 million for the 2005-21 biennia.

Port Townsend Projects

		(\$000s)							
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21
900012D	Port Townsend Terminal Preservation		18,740				831	1,335	
900012G	Port Townsend Ferry Terminal Impr		1,940	11,488					
	Port Townsend Total	0	20,680	11,488			831	1,335	
									37,293

B. Project Expenditures 2005-07 Biennium

Project expenditures are noted below from the 2005-07 biennium, through August 2006. All planning expenses for the terminal improvement have been expensed to the preservation project. Total expenditures this biennium through August are \$1.3 million, of which \$1 million has been for CH2MHill's work on planning and scoping, \$38,000 for public involvement and \$50,000 for project management and civic engineering support.

Port Townsend Project Expenditures 2005-07 Biennium (August 2006)

(\$000s)		
PIN	Title	Aug. 06
XL 1984	Ferry Terminal Improvement Project	1,331

C. Project Status/WSF Identified Risks

- Improvement: WSF proposes to extend the existing dock 180 feet to hold an additional 100 vehicles on the trestle; relocate an adjacent park to the other side of the terminal in order to straighten the exit lanes; move the tollbooths side-by-side to speed up processing; and create a new remote holding area along SR 20 to replace an existing one that WSF does not own.
- Environmental: WSF is preparing its environmental review. "In an effort to shield the project from schedule risk, the project team is taking steps to divorce vessel related work from the project. The elements of the project that are vessel dependent are the outer dolphins and dredging." (Quarterly Project Report September 2006, p. 1). The environmental review assumes three potential vessel sizes – 65-vehicle, 100-vehicle and 144-vehicle. If a 65-vehicle vessel is chosen, then no additional permits will be needed. For a 100-vehicle vessel, WSF would apply for additional permits for three additional dolphins, and appropriate traffic mitigation along SR 20. For a 144-vehicle vessel, WSF would apply for additional permits for three additional dolphins, dredging, and appropriate traffic mitigation along SR 20.
- Risks: (WSF Terminal Engineering Progress Report Sept. 2006)
 - Vessel decision – considering three vessel sizes (65, 100, 144 vehicle)
 - City traffic issues
 - Hood Canal Bridge

- Keystone Project
- WSF budget shortfalls
- BC Olympics
- Sand Lance – beach adjacent to terminal

D. Project Scope, Schedule and Budget Changes

In 2003 the Port Townsend project budget was \$14.4 million for a ten year capital program based on WSF acquiring new vessels for the Port Townsend-Keystone route. All expenses to date have been borne by the preservation project. The improvement project was added in 2005 with the justification that expanded holding capacity was required on the trestle.

1. Project 900012D Port Townsend Terminal Preservation

a) Scope Changes

In a July 22, 2003 change management form the project was justified based on construction of new vessels as follows:

Description: This project replaces two operating slips (wingwalls, towers, bridge seats, transfer spans, aprons, and dolphins); rebuilds and realigns the tollbooths; and funds the long-term monitoring for the environmental mitigation associated with the offshore expansion of the trestle. This work will occur in conjunction with the Keystone Relocation (902017F) and Port Townsend Offshore Expansion (900012F) Projects.

Description of Change: WSF will be building a new vessel for the Port Townsend-Keystone route. This vessel will have a deeper hull, which may require that the Port Townsend operating slips be moved further offshore. As a result, near-term offshore preservation in the currently approved program has been cancelled, and the preservation will occur with the Keystone Relocation and Port Townsend Offshore Expansion projects. In addition, there was an Upland Improvement project (900012E) in the previously approved budget. With the possible offshore expansion of the trestle, the upland improvement work may no longer be necessary as the larger trestle will provide increased holding capacity; the final arrangement of the terminal will be determined in the environmental process. The money for tollbooth reconstruction and realignment that had been incorporated into the Upland Improvement project has been added to this preservation PIN, as it has been determined that the tollbooth work is more accurately categorized as preservation. Finally, long term monitoring costs for the mitigation associated with the trestle expansion have been added to this PIN (WSF policy has been to classify any environmental mitigation associated with an improvement project as an improvement, but to classify any subsequent monitoring as preservation). (Project Control Form July 22, 2003 p. 1)

In 2004 the project was described as replacing two operating slips, rebuilding and realigning the tollbooths and funding the long term monitoring of environmental mitigation. The scope was expanded in 2005 to include the purchase of property adjacent to the terminal and to relocate the remote holding area because the Indian Point property where WSF had been using an adjacent street for holding was purchased by a developer.

b) Budget Changes

The budget has increased from \$16.3 million to \$25 million, with modifications including the addition of right-of-way acquisition to secure a new remote holding area and to acquire property adjacent to the terminal. Federal funding was included in the first versions but reduced in later budgets.

Preservation Project Budget

(\$000s)

	Jul-03	Mar-04	Jul-04	Feb-05	2006	Jan-06
	v 2003-7	v2005-2	v 2005-3A	v 2005-4	v 2007-2*	v 2007-2a*
Construction State	3,131	15,372	18,250	18,250	19,782	19,782
Construction Federal	6,067	1,587				252
Construction Bond	5,238	1,806			252	
Construction Sub-total	14,436	18,765	18,250	18,250	20,034	20,034
Engineering State	1,903	3,210	3,332	3,332	4,159	4,159
Right-of-Way State					1,000	800
Total	16,339	21,975	21,582	21,582	25,193	24,993

* Sixteen year capital plans (others are ten year capital plans)

c) Schedule Changes

The schedule changed to reflect that the environmental review took a year longer than anticipated.

Preservation Project Schedule

	Jul-03	Mar-04	Jul-04	Feb-05	2006	Jan-06
	v 2003-7	v2005-2	v 2005-3A	v 2005-4	v 2007-2*	v 2007-2a*
Preliminary Engineering	Jun-06	Dec-06	Dec-06	Dec-06	Jun-07	Jun-18
Construction	Jun-13	Jun-08	Jun-08	Jun-08	Jun-09	Jun-19
Right-of-Way					Jun-09	Jun-09

* Sixteen year capital plans (others are ten year capital plans)

2. Project 900012G Port Townsend Terminal Improvements

a) Scope Changes

The scope of the improvement project was described in January 2005 as improving the efficiency of vessel loading by building a vehicle holding area within the terminal.

Why doing project:

Project will improve service at the Port Townsend Ferry Terminal by adding on-site parking for vehicles awaiting ferry service. Vehicles waiting to board a ferry currently use State Route 20 as a holding area. This adversely affects local community traffic.

The Port Townsend-Keystone Ferry Route connects the Olympic Peninsula with central Whidbey Island. The route will experience an increase in ridership from 799,000 people and 374,000 vehicles in FY 2004 to 1,500,000 people and 500,000 vehicles in FY 2030.

The existing facility has reached the end of its useful life, cannot accommodate summer peaks and is inadequate in its current configuration to handle projected increases.

End Result:

When complete, the Port Townsend Ferry Terminal will have increased holding capacity (approximately 200 cars). The new configuration will provide for a safer, more efficient operation. Additional parking will allow WSDOT to meet current and future demand for ferry service.

Benefits:

This project improves the Port Townsend Ferry Terminal capacity to load vessels and the safety and efficiency of terminal operations by increasing vehicle holding capacity and providing additional parking. Also, it reduces congestion on local streets caused by inadequacies of existing holding capacity. The project will minimize traffic problems on SR-20 by increasing the vehicle holding areas. Finally, it will minimize the effect of propeller-wash on the eelgrass by letting vessels dock and operate further offshore in deeper water. (WSDOT Transportation Partnership Act Marine Transportation Project Selection p. 5)

The scope of the project has not changed.

b) Budget Changes

This is a TPA funded project. The budget has not changed since its inclusion on the TPA list.

Port Townsend Improvement Project Budget

(\$000s)

	Sept. 05 v 2005-3A	Jan-06 v 2007-2a	Mar-06
Preliminary Engineering	1,940	1,940	1,940
Construction	10,587	10,587	10,587
Right-of-Way	901	901	901
Total	13,428	13,428	13,428

It is not clear how the preliminary engineering and right-of-way budgets in this project relate to the preservation project budget.

E. Condition Report

Life-Cycle and Condition Rating Port Townsend

Yr. Insp.	Life-Cycle Rating	Units	State				Percent Good or Fair Condition
	Vital	Measured	1	2	3	4	
2006	58%	122,566	92,689	26,433	3,215	223	
%			76%	22%	3%	0%	97%

F. Observations

1. Projects Interrelated

The preservation and improvement projects are interrelated. The preservation project will provide for replacing wingwalls, dolphins and other structures for the expanded trestle.

2. Non-Life-Cycle Costs

The life-cycle cost model attributes 100% of the 2005-07 biennium appropriation to life-cycle costs. All of the actual expenditures are in support of the improvement project.

3. Keystone/Vessel

The terminal decisions at Port Townsend are tightly linked with the vessel and Keystone terminal decisions. (See discussion in the Keystone terminal section.)

4. Project Management

WSF staff are serving as project managers.

5. Master Plan

- Winter 2006/7 – Environmental Determination Issues
- Spring 2007 – Construction of Remote Holding Begins
- Spring 2007 – Keystone Project Draft EIS Released
- Spring 2007 – Port Townsend Terminal Construction Begins

6. Cost-benefit analysis/life-cycle cost analyses

Staff have analyzed the cost of upland versus trestle holding area.

Cost Comparison of Overwater vs. Upland Holding

	\$/sf	sf/staff	\$/staff
Overwater - trestle construction	\$120	200	\$24,000
Upland - land acquisition	\$20	200	\$4,000
Upland-grading & paving	\$20	200	\$4,000
<i>Total Upland</i>			<i>\$8,000</i>

7.Flexibility

There are no plans to stagger project with ridership.

8. Environmental

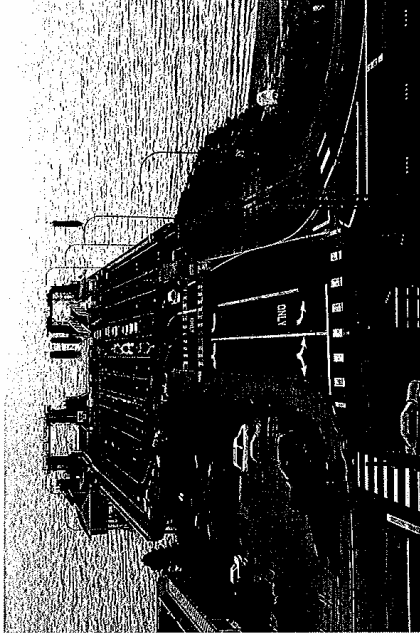
There are significant cultural resource issues associated with the trestle expansion. The Port Townsend Preservation Project Risk Workshop noted that there is potential for significant opposition from tribes with over-structures. (Workshop Number 1 March 28, 2005 p. 1)

9. Condition

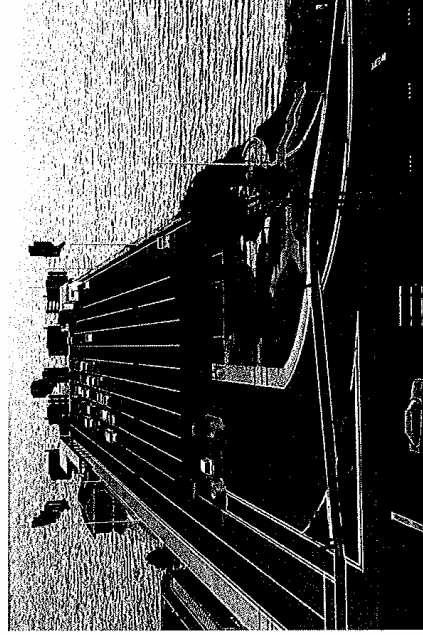
The Port Townsend terminal is in fair condition, with the inspection reports showing that the terminal has 76% of its inspected structures in good condition and an additional 22% in fair condition.

Port Townsend: Proposed Action

- Extend the dock 180 feet (Adds holding for 100 more vehicles, up from the 200 the terminal and remote holding lot now accommodate).
- Relocate Rotary Park (straightens exit lanes).
- Move tollbooths side-by-side to speed up processing
- Create a remote holding area along SR 20 (near Boat Haven) and shift the bike/pedestrian path behind the poplar trees.



Existing Port Townsend Terminal



Conceptual view of proposed terminal design

Seattle

A. Projects

There are five projects at Seattle with budgets of \$9 million for the 2005-07 biennium and \$228.9 million for the 2005-21 biennia.

Seattle Projects

		(\$000s)							
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21
900010I	Seattle South Trestle Expansion	5,294	18,876	51,000					
151902F	Seattle SR 519 P52 Access Impr	37							
900010H	Seattle Interim Retail Development	1,124							
900010G	Seattle Terminal Building Repl.- New Retail	67	206	634	1,516	539			
900010A	Seattle Terminal Preservation	2,521	10,605	24,328	77,714	25,412	2,878	2,967	3,194
	Seattle Total	9,043	29,687	75,962	79,230	25,951	2,878	2,967	3,194
									228,912

B. Project Expenditures 2005-07 Biennium

Expenditures this biennium for Seattle Colman Dock projects total \$2.9 million, of which \$1.9 million has been expended on the Colman Dock Long-Range Plan. In the 2005-07 biennium an additional \$900,000 was spent on pedestrian access controls related to the electronic fare system under project 900010H Interim Retail Improvements.

Seattle Project Expenditures 2005-07 Biennium (August 2006)

		(\$000s)	
PIN	Project	Aug. 2006	
900010I	South Trestle Expansion		
	XL1987 Colman Dock Long-Range Plan	133	
900010A	Terminal Preservation		
	006924 Terminal Coating Repair	19	
	006989 Physical Security Infrastructure	90	
	XL1982 Overhead Loading Maintenance	13	
	XL1987 Colman Dock Long-Range Plan	1,723	
	Sub-total PIN 900010A	1,845	
900010G	New Retail Space	0	
900010H	006716 Interim Retail Improvements	181	
	007103 Pedestrian Access Control	497	
	MS5420 North Kiosk Signage	119	
	XL1712 Interim Retail Improvements	3	
	XL2367 Pedestrian Access Control	106	
	Sub-total PIN 900010H	906	
151902F	SR 519 Access	0	
	Total	2,884	
	Total Long-Range Plan	1,856	
	% Long-Range Plan	64%	

C. Project Status/WSF Identified Risks

- Master Plan: WSF is developing the Seattle terminal master plan. As discussed in the September 2006 Terminal Engineering Quarterly Report the options range from replacing the existing terminal building with a new building sized for future growth to constructing a new-mixed-use complex that would generate revenue for WSF. The financial feasibility of construction beyond the base building will be evaluated in parallel with the environmental review.
 - The terminal project will include
 - Replacing the deteriorated timber piling and dock structure
 - Upgrading the power distribution system
 - Replacement of Slip 3 tower, bridge seat and transfer span
 - Replacement of the dolphins
 - Replacement of the main terminal building
 - The terminal project may also include
 - Expanding the holding lanes to accommodate future growth
 - Upgrading vehicle and passenger transfer facilities
 - Improved connection to the freeway system
 - Improved pedestrian connections to transit and downtown Seattle
 - Addition of a fourth slip
 - Mixed-use co-development
- Risks: (WSF Terminal Engineering Quarterly Report Sept. 2006)
 - Feasibility and community acceptance of expanded co-development
 - Size of the dock
 - Amount of over water coverage
 - Traffic associated with the long-range plan
 - Joint mitigation with Alaskan Way Viaduct project
 - The long-term use of Pier 48
 - Availability of a remote holding area.

D. Project Scope, Schedule and Budget Changes

1. Project 900010A Seattle Terminal Preservation

a. Scope Changes

The terminal preservation project has been described as preserving various systems and structures at the Seattle terminal. Reference to funding for an Environmental Impact Statement is included, but no specific reference is made to the Colman Dock Long-Range Plan. The Colman Dock Long-Range Plan has been funded largely through this project.

In July 2003 the project was described as preserving the systems and structures at the Seattle Ferry Terminal. Over the next ten years, work includes interim preservation and replacement of the timber trestles and overhead loading (slips 2 and 3); vehicle slips and dolphins (slips 2 and 3); the terminal building; the power vault; and exit gates. In March 2004 the project description was changed to eliminate the terminal building, the power

vault, and exit gates. In July 2004 it was described as interim preservation of the north trestle, followed by replacement of the trestle; preservation of the overhead loading structures for slips 2 and 3 followed by replacement of the structures; replacement of the terminal building, dolphins, slip 3 towers, bridge seat and transfer span; installation of exit gates; removal of the passenger-only facilities; and the reconstruction/upgrade of the power vault.

The WSF 2005-07 budget request states that this project begins with interim preservation of the north trestle, preservation of slip 2 and 3 passenger overhead loading structures, and installation of exit gates. This is followed by the major work that replaces the north trestle. Work includes replacement or refurbishment of trestle sections A through E, bulkheads, riprap; selected slip 2 and 3 towers, bridge seats, apron, transfer span, and dolphins; overhead loading structures for slips 2 and 3; the main terminal building and other buildings; pavement on the trestle and retained fill; and utilities.

It goes on to note that the preservation for Colman Dock is currently in the preliminary design phase. Additional work has been identified that includes the following sections of the EIS process: environmental strategy, project management and design criteria, draft purpose and need statement, Section 106 consultation, hazard materials assessment, functional diagramming concept, design and related public involvement activities. This work requires additional funding of \$300,000.

b. Budget Changes

The budget for this project has changed little since 2003.

Seattle Preservation Project Budget

	(\$000s)				
	Sept. 03 v2003-7	Mar-04	2005 v2005-3a	Feb-05 v 2005-4	Feb-06 v 2007-2a*
Engineering State	30,641	10,822	22,359	22,659	24,995
Construction State	123,945	138,595	131,995	131,995	128,385
Construction Federal		5,301			
Sub-total Construction	123,945	143,896	131,995	131,995	128,385
Total	154,586	154,718	154,354	154,654	153,380

* Sixteen year capital program (others are ten year capital program)

c. Schedule Changes

The schedule has been extended by six years due to the difficulties of the site and downtown Seattle constraints.

Seattle Preservation Project Schedule

	Sept. 03 v2003-7	Mar-04	2005 v2005-3a	Feb-05 v 2005-4	Feb-06 v 2007-2a
Engineering End Date	Jun-10	Jun-10	Jun-10	Jun-10	Jun-20
Construction End Date	Jun-13	Jun-13	Jun-14	Jun-14	Jun-21

2. Project 900010I Seattle South Trestle Expansion

a. Scope Changes

This project has been described since July 2004 as expanding the south trestle of the Seattle Ferry Terminal to increase holding capacity for vehicles waiting to load onto ferries. The new trestle will help WSF maintain operations when the north trestle is replaced. The project was described the same way in the July 2004 submittal of the WSF 2005-2008 Budget Request v2005-3A. It is described as part of the Colman Dock Long-Range Plan in the project control form of January 2006.

b. Budget Changes

The budget increased with the addition of federal funds which allowed for the transfer of state funds to other projects in 2006. The receipt of federal funds in 2005 to be used for preliminary engineering and/or environmental work previously funded by the state allowed state funds to be used for co-development analysis and regulatory and legislative analysis that had previously been unfunded. In 2006 the budget was reduced because "...the Seattle Long-Range Project, which includes the south trestle expansion, has been delayed due to the late completion of the WSF System Plan and tariff analysis. As a result, \$650,000 is available in the 2005-2007 biennium to be used for needs elsewhere in the program." (Project Control Form January 10, 2006)

Seattle South Trestle Expansion Project Budget

(\$000s)

	Jul-04	Jul-05 v2007-1	Nov-05 v 2007-2	6-Jan v2007-2a
Engineering State	10,980	11,349	11,349	10,699
Engineering Federal			5,800	5,800
Engineering Total			17,149	16,499
Construction State	60,414	58,955	58,955	58,671
Construction Federal				
Sub-total Construction	60,414	58,955	58,955	58,671
Total	71,394	70,304	76,104	75,170

c. Schedule Changes

The schedule for this project has remained unchanged, with construction scheduled to end in June 2011. This may no longer be applicable given the projected schedule for the Environmental Impact Statement.

Seattle South Trestle Expansion Project Schedule

	Jul-04	Jul-05 v2007-1	Nov-05 v 2007-2	6-Jan v2007-2a
Engineering End Date	Jun-08	Jun-08	Jun-08	Jun-08
Construction End Date	Jun-11	Jun-11	Jun-11	Jun-11

3. Project 900010G Seattle Terminal Building Replacement – New Retail Space

a. Scope Changes

This project has been identified since 2003 as being for greater retail development of the new ferry terminal in order to generate more income for the ferry system. In 2004 it was noted that the project will occur simultaneously with the redevelopment project.

b. Budget Changes

The budget for this project has changed little since 2003.

Retail Improvement Project Budget

	Sep-03	Mar-04	Jul-04	Feb-06
	v2007-3	v2005-2	v2007-1	v 2007-2a
Engineering State	600	98	457	419
Construction State	2,400	2,902	2,543	2,543
Total	3,000	3,000	3,000	2,962

c. Schedule Changes

The schedule has changed to reflect changes in the overall project schedule.

Retail Improvement Project Schedule

	Sep-03	Mar-04	Jul-04	Feb-06
	v2007-3	v2005-2	v2007-1	v 2007-2a
Engineering End Date	Jun-10	Jun-07	Jun-07	Jul-10
Construction End Date	Jun-10	Jun-13	Jun-14	Jun-14

E. Condition Report

Life-Cycle and Condition Rating Seattle

Terminal	Yr. Insp.	Life Cycle Rating	Units	State				Percent Good or Fair Condition
		Vital	Measured	1	2	3	4	
Seattle Slip 1			371,862	358,134	10,289	3,438	1	
Seattle Slip 2			408,627	300,001	79,816	28,577	233	
Seattle Slip 3			29,512	12,687	8,760	5,214	2,851	
Seattle POF			23,348	14,880	7,378	1,090	0	
Seattle Total	2005	55%	833,349	685,702	106,243	38,319	3,085	
	%			82%	13%	5%	0%	95%

F. Observations

1. Projects Interrelated

The trestle expansion, preservation and new retail development projects are all inter-related and are being jointly managed. The preservation budget is being used to fund the majority of the master planning expenses.

2. Long-Range Plan

The design program and scope are based on the 2030 Long-Range Plan. The car holding plan assumes 1,485 cars, which is roughly equivalent to two boat loads for the Bainbridge, Bremerton and new Southworth runs. The current holding capacity is 650 cars. A fourth slip is planned to accommodate Southworth-Seattle service. The new terminal building will be 50,000 to 60,000 square feet. The existing building is 30,000 sf.

3. Budget

Proposed projects are estimated at \$275 million including a new terminal building, upgraded utilities, new/refurbished marine loading facilities, expanded car holding and enhanced pedestrian connections, construction delays, LEED Silver Rating, expanded terminal retail, public plazas required by local code, Pier 48 demolition and mitigation, and tribal mitigation. This is \$46 million more than currently identified.

4. Project Management

The project manager is a consultant to WSF.

5. City of Seattle

WSF is seeking modifications to Seattle's Comprehensive Plan needed for expanded co-development. The Seattle Department of Transportation has commented extensively on WSF's Notice of Scoping for Seattle Ferry Terminal Environmental Impact Statement. Their comments include:

- ...integrated passenger-only facilities should be included in all alternatives regardless of whether WSF operates those services.
- The City will not support any alternatives that use the surface level of Pier 48 uplands for auto holding or access.
- The need to coordinate construction and cultural resource reviews with the Alaskan Way Viaduct project.
- All alternatives should include a transportation demand management component with the objective of accommodating planned growth while potentially reducing the need for expensive capital facility investments by effectively managing demand for the facility. This plan should include pricing, methods to shift modes and methods to shift peak travel to off-peak travel. (City of Seattle Letter, May 19, 2006, p. 2-9)

6. Cost-Benefit Analysis/Life-Cycle Cost Analyses

Have not been completed.

7. Project Schedule:

- 2006-1st Quarter 2007 – Planning
- 2006-2010 – Environmental
- 2009-2011 – Design
- 2006-2010 – Permitting
- 2011-2016 – Phased Construction

8. Flexibility

Phasing of the project has not been determined.

9. Environmental

There are significant environmental and cultural resource issues. See discussions above regarding the City of Seattle's comments.

10. Ancillary revenue

The interim retail project was designed to increase concession revenues to WSF. The consultants have not seen a report comparing actual revenues to those projected.

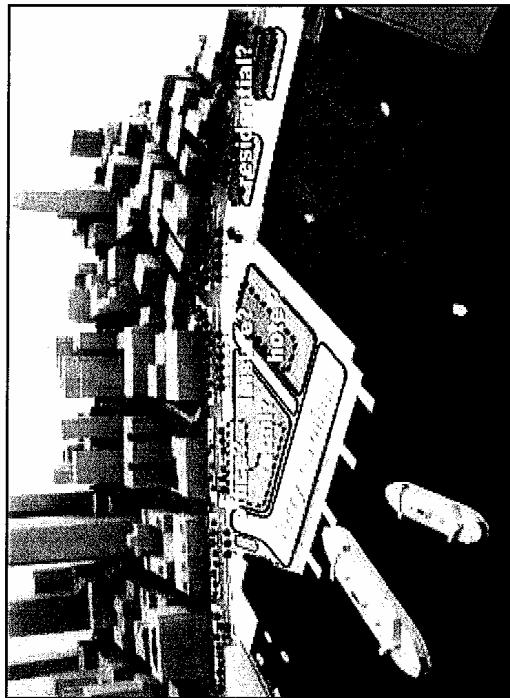
11. Condition

The Seattle terminal is in good condition, with the inspection reports showing that the terminal has 82% of its inspected structures in good condition and an additional 15% in fair condition.

What is WSF considering for transit-oriented development?

WSF will consider a range of privately-funded development strategies and building heights

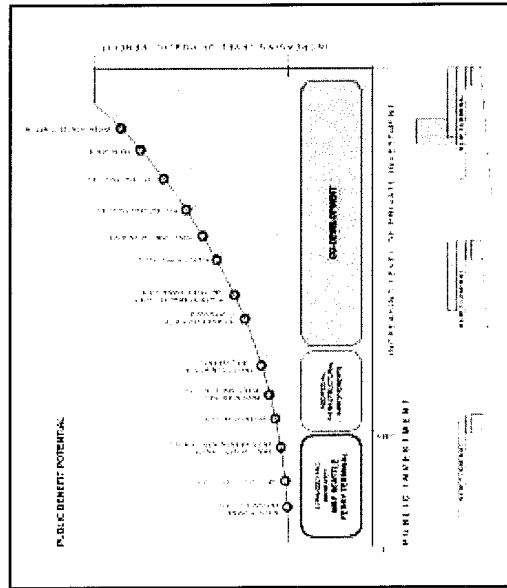
- All ideas and concepts will be evaluated for environmental impacts, effectiveness and cost.



There are many possibilities for privately-funded development on and near Colman Dock



SEATTLE FERRY TERMINAL PROJECT AT COLMAN DOCK



Privately-funded development at Colman Dock would help pay for additional public amenities

Why is WSF considering transit-oriented development?

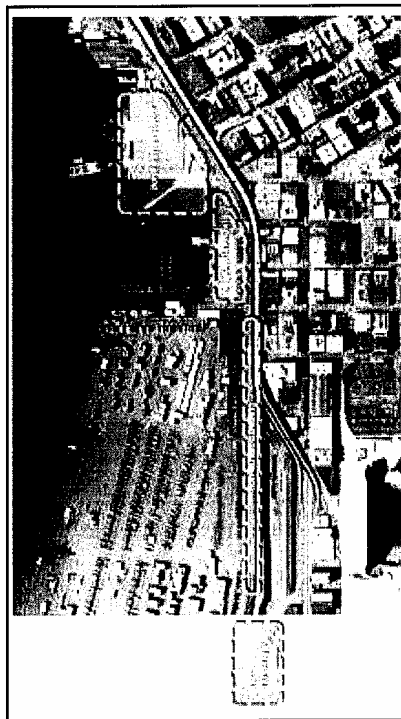
- Transit-oriented development would help pay for public amenities.
- Transit-oriented development would generate non-farebox revenues to help off-set rising operating costs.

April 2006





SEATTLE FERRY TERMINAL PROJECT AT COLMAN DOCK



A combination of holding strategies will be required to accommodate growth

Ideas include:

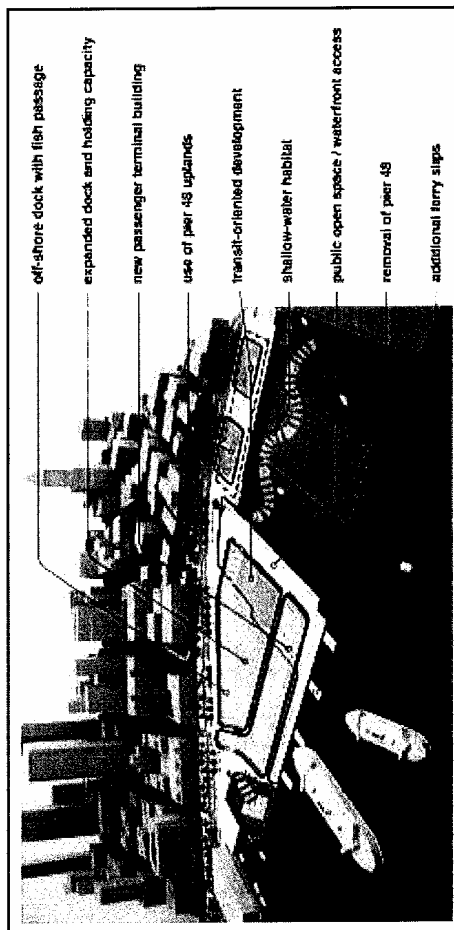
- Expanding the existing dock
- Adding holding adjacent to Colman Dock
- On-street queuing
- Remote holding

Are there other ideas we should consider?



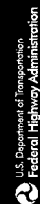
SEATTLE FERRY TERMINAL PROJECT AT COLMAN DOCK

he following elements will be considered as WSF develops alternatives for the Seattle Ferry terminal



re there other ideas we should consider?

April 2006



Shaw

A. Projects

There are two projects at Shaw with budgets of \$60,000 for the 2005-07 biennium and \$7.9 million for the 2005-21 biennium. The catch-up preservation project is discussed under systemwide catch-up preservation.

Shaw Projects

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
900024E	Shaw Terminal Preservation	60					3,599		2,180	5,839
	Catch-up Preservation									
	SH04 Dolphin Replacement			2,016						2,016
	Shaw Total	60		2,016			3,599		2,180	7,855

B. Project Expenditures the 2005-07 Biennium

No expenditures have occurred on this project this biennium.

C. Project Status

- 2004 Project: In 2004 a major renovation of the Shaw terminal was undertaken with new wingwalls, transfer spans, aprons, towers, bridge seats and mechanical and electrical systems.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-Cycle and Condition Rating Shaw

Yr. Insp.	Life Cycle Rating	Units Measured	State 1	2	3	4	Percent Good or Fair Condition
	Vital						
2005	75%	14,947	13,654	479	408	406	
%			91%	3%	3%	3%	95%

F. Observations

1. Life-Cycle Cost Model

The projected Shaw Island trestle and systems replacement improvements in the 2015-17 biennium and the proposed restroom and paving projects in the 2019-21 biennium should be re-examined when the life-cycle cost model is updated.

2. Life-Cycle Cost Analysis

The Shaw project team did a life-cycle cost analysis of alternatives for the Shaw Island slip reconstruction in 2004.

3. Condition

The Shaw Island terminal is in good condition, with the inspection reports showing that the terminal has 91% of its inspected structures in good condition and an additional 3% in fair condition.

Southworth

A. Projects

There are three projects at Southworth with budgets of \$3.7 million for the 2005-07 biennium and \$31.5 million for the 2005-21 biennia.

Southworth Projects

		(\$000s)								
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
916008N	Southworth Terminal Preservation	1,554			2,090	11,641	726	111		16,122
916008Q	Southworth Second Slip	2,150	2,850							5,000
916008P	Southworth Trestle Impr				1,427	8,944				10,371
	Southworth Total	3,704	2,850		3,517	20,585	726	111		31,493

B. Project Expenditures the 2005-07 Biennium

Project expenditures are noted below from the 2005-07 biennium, through August 2006. Nothing has been spent on the Second Slip project.

Southworth Project Expenditures the 05-07 Biennium (July 2006)

		(\$000s)	
PIN	Project	Aug. 06	
916008N	Terminal Preservation		
	007068 Replace Southworth Trestle Deck Preservation	997	
	XL2396 Interim Southworth Trestle Preservation	175	
	Sub-total	1,172	
916008Q	Second Slip	0	
	Total	1,172	

C. Project Status/WSF Identified Risks

- Trestle Preservation: The interim preservation project scheduled for this biennium has been completed.
- Second Slip: Funding is for design of the second slip, but work has not started.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-Cycle and Condition Rating Southworth

Yr. Insp.	Life Cycle Rating	Units Measured	State 1	2	1&2	3	4	Percent Good or Fair
	Vital							Condition
2006	58%	85,049	71,545	9,772		2,460	1,272	
%			84%	11%	96%	3%	1%	96%

F. Observations

1. Life-Cycle Cost Model

The trestle replacement project planned for the 2011-15 biennia, which include the replacement of all systems and utilities, should be reviewed once the life-cycle cost model is updated.

2. Preservation vs. Improvement

In the 2011-15 biennia WSF has identified a non-life-cycle trestle widening project that should be reviewed if new definitions of improvement and preservation are adopted.

3. Long-Range Plan

The Long-Range Strategic Plan assumes the addition of a route between Southworth and Seattle that would necessitate a second slip.

4. Condition

The Southworth terminal is in good condition, with the inspection reports showing that the terminal has 84% of its inspected structures in good condition and an additional 11% in fair condition.

Tahlequah

A. Projects

There are two projects at Tahlequah with budgets of \$1.4 million for the 2005-07 biennium and \$5.3 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Tahlequah Projects

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
90002E	Tahlequah Terminal Preservation	200						3,041	850	4,091
	Catch-up Preservation									
	TA05 Transfer Span Retrofit	1,243								1,243
		1,443						3,041	850	5,334

B. Project Expenditures 2005-07 Biennium

Expenditures for this biennium include some expenditures on a PIN for adjacent property acquisition that was active in the 2003-05 biennium.

Tahlequah Project Expenditures 2005-07 Biennium (Aug. 2006)

(\$000s)

PIN	Project	Aug 06
900002E	Terminal Preservation	
	007016 Statewide Hydraulic & Controls Upgrade Ph 2	152
	MS5597 Building Removal	15
	Sub-total	167
90002F	Adjacent Property Purchase	4
	Total	171

C. Project Status/WSF Identified Risks

- **Trestle Interim Preservation:** The preservation project was intended to make an interim improvement to the Tahlequah trestle. This was determined not to be necessary based on the condition assessment. In the 2003-05 biennium the project had replaced and capped some piling and re-paved the trestle.
- **Other Expenditures:** In lieu of interim trestle preservation the funds were used to upgrade the hydraulics and to remove a building that was located on property acquired under PIN 90002F, adjacent property purchase, in the 2003-05 biennium. Upgrading the hydraulic controls was supplemented with \$250,000 from the maintenance budget.

D. Project Scope, Schedule and Budget Changes

1. Project No. 90002E Tahlequah Terminal Preservation

a) Scope Changes

The scope was changed in June 2004 from replacement of the trestle, utilities, emergency generator and dolphins to interim trestle preservation and funding for a feasibility study and master plan. Dolphin replacement was shifted to another fund source – the Systemwide Catch-up Preservation program. In July 2005 the Tahlequah master plan was cancelled because a feasibility study for expansion of the terminal was determined to provide sufficient information for planning purposes.

b) Budget Changes

The project budget changed with the decision not to develop a master plan and then increased to reflect the additional term of the capital program.

Preservation Project Budget

(\$000s)

	Jul-04	Jul-05
	v2007-1	*
Engineering State	314	1,125
Construction State	658	3,472
Total	972	4,597

* Sixteen year capital program (other is ten year capital program)

c) Schedule Changes

The schedule has remained the same.

Preservation Project Schedule

	Jul-04	Feb-06
	v2007-1	v 2007-2a
Engineering End Date	Jun-06	Jun-06
Construction End Date	Jul-07	Jul-07

2. Project 90002F Adjacent Property Purchase

The project was instituted in 2004 to purchase property adjacent to the terminal to be land banked. The right-of-way was acquired for \$336,000 in the 2003-05 biennium.

E. Condition Report

Life-Cycle and Condition Reports Tahlequah

Yr. Insp.	Life Cycle Rating	Units	State				Percent Good or Fair Condition
	Vital	Measured	1	2	3	4	
2006	78%	47,978	37,453	8,627	1,896	2	
%			78%	18%	4%	0%	96%

F. Observations

1. Projects Interrelated

The preservation and adjacent property acquisition projects are interrelated, with preservation funding being used to remove a building from the acquired property.

2. Life-Cycle Cost Model

The project planned for the 2017-21 biennia, which includes funding to replace all systems and utilities, should be reviewed once the life-cycle cost model is updated.

3. Preservation vs. Improvement

In the 2011-15 biennia WSF has identified a non-life-cycle trestle widening project that should be reviewed if new definitions of improvement and preservation are adopted.

4. Condition

The Tahlequah terminal is in fair condition, with the inspection reports showing that the terminal has 78% of its inspected structures in good condition and an additional 18% in fair condition.

Vashon

A. Projects

There are two projects at Vashon with budgets of \$850 thousand for the 2005-07 biennium and \$44.8 million for the 2005-21 biennia. The catch-up preservation project is discussed under systemwide catch-up preservation.

Vashon Projects

(\$000s)

PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
900006N	Vashon Terminal Preservation	850		925		3,089	20,581	5,339	3,194	33,978
Catch-up Preservation										
	VA03 Vashon Dolphin Replacement		8,074							8074
	VA07 Transfer Span Retrofit		2,671							2,671
	Vashon Total	850	10,745	925		3,089	20,581	5,339	3,194	44,723

B. Project Expenditures 2005-07 Biennium

Two hundred and eighty-five thousand dollars (\$285,000) has been spent on this project this biennium through August, 2006.

Vashon Project Expenditures 2005-07 Biennium (Aug. 2006)

(\$000s)

PIN	Project	Aug. 06
XL2403	Interim Trestle Preservation	285

C. Project Status

- Interim Trestle Preservation: The current project at this location is for preservation and replacement of piles, structural braces and stringers. WSF only received one bid for the construction, which was rejected because it was too high. Re-scoping of the project is underway.

D. Project Scope, Schedule and Budget Changes

Not applicable to this project.

E. Condition Report

Life-Cycle and Condition Reports Vashon

Yr. Insp.	Life Cycle Rating	Units Measured	State				Percent Good or Fair Condition
	Vital		1	2	3	4	
2006	50%	205,791	119,894	78,460	6,541	894	
%			58%	38%	3%	0%	96%

F. Observations

1. Life-Cycle Cost Model

The projects planned for the 2013-21 biennia should be reviewed once the life-cycle cost model is updated. The project includes funding to replace all systems and utilities and to replace steel dolphins installed in 1997 and 2002.

2. Non-Life-Cycle Costs

In the 2005-07 biennium the preservation project is a non-life-cycle interim preservation or maintenance project.

3. Condition

The Vashon terminal is in fair condition, with the inspection reports showing that the terminal has 58% of its inspected structures in good condition and an additional 38% in fair condition.

Systemwide Catch-up Preservation

A. Projects

This is a Nickel funded project to allow WSF to “catch-up” to its preservation goals of having 90 to 100 percent of vital systems and 60to 80 percent of non-vital systems operating within their life-cycle.

Catch-up Preservation Projects

		(\$000s)								
PIN	Project Title	05-07	07-09	09-11	11-13	13-15	15-17	17-19	19-21	Total
999940D	Catch-Up Preservation									
	ANO6 Anacortes Dolphin Replacen	2,943								2,943
	AN34 Apron Replacement Slip 1				335					335
	BR03 Bremerton Slip 1 Dolphins			2,909						2,909
	BR10 Bremerton Slip 2 Dolphins			4,656						4,656
	BR18 Apron Replacement Slip 1			291						291
	KI13 Phase 3 Dolphin Replacement			3,841						3,841
	LO02 Dolphin Replacement	3,279								3,279
	LO03 Lopez Interim Terminal Preservation				313					313
	LO11 Apron Replacement			378						378
	OR02 Dolphin Replacement		4,944							4,944
	PD08 Apron Replacement				306					306
	SH04 Dolphin Replacement			2,016						2,016
	TA05 Transfer Span Retrofit	1,243								1,243
	VA03 Vashon Dolphin Replacement		8,074							8,074
	VA07 Transfer Span Retrofit		2,671							2,671
	Catch-Up Preservation Total	7,465	15,689	14,091	954					38,199

B. Project Expenditures 2005-07 Biennium

Two hundred and forty-three thousand dollars (\$243,000) has been spent in the 2005-07 biennium on the hydraulic system at Tahlequah, \$294,000 on the Anacortes dolphin replacement project and \$523,000 on the Lopez dolphin replacement project.

Catch-Up Preservation Expenditures 2005-07 Biennium (as of Aug. 06)

		(\$000s)
PIN	Project	Aug. 06
007016	Systemwide Terminal Hydraulic & Controls Upgrade Phase 2 (Tahlequah)	243
007161	Lopez Dolphin Replacement	58
XL1991	Lopez Dolphin Replacement	475
XL2717	Anacortes Dolphin Replacement Phase 2	294
	Total	1,070

C. Project Status

- Tahlequah: Scope changed substantially from a transfer span retrofit estimated at \$1.2 million to work on the hydraulics for \$243,000. Funds saved will be used at Lopez and Anacortes.
- Lopez: Construction is underway with work to be completed by February 2007. Bids were 5.6% under the engineer’s estimate.

- Anacortes: Construction is underway with scheduled completion by February 2007. Bids were at the engineer's estimate.

D. Project Scope and Budget Changes

The projects to be accomplished and the budgets in the catch-up preservation program have been modified as outlined below. These adjustments were made in light of the condition of the asset (i.e. deleting the replacement of the dolphins at Eagle Harbor), availability of other project funding (i.e. Southworth transfer span retrofit), and/or changes in scope. They also reflect WSF's changes in preservation priorities.

Catch-up Preservation Project Scope & Budget

(\$000s)

Project	2003 v2005-3A	2004 v2005-2	2004 v2005-3A	2006 v 2007-3
Anacortes Dolphin Replacement	3,769	3,140	2,943	2,943
Anacortes Apron Replacement			335	335
Bremerton Slip 1 Dolphins	3,300	3,301	2,909	2,909
Bremerton Slip 2 Dolphins	5,281	5,282	4,656	4,656
Bremerton Apron Replacement			291	291
Eagle Harbor Tie-Up Slips A-D Preservation	4,367			
Friday Harbor Timber Trestle Replacement	2,812	2,241		
Friday Harbor Timber Dolphin Replacement		2,839		
Kingston Dolphin Replacement			3,841	3,841
Kingston Toll Booth Replacement		727		
Lopez Trestle Replacement	2,082	1,946	2,086	
Lopez Dolphin Replacement			3,476	3,854
Lopez Apron Replacement			378	378
Lopez Interim Preservation				313
Orcas Dolphin Replacement			4,944	4,944
Orcas Upland Preservation			627	
Point Defiance Upland Preservation			189	
Point Defiance Transfer Span Retrofit (non-life-cycle)	1,709	1,709	1,560	
Point Defiance Apron Replacement			306	306
Seattle Transfer Span Retrofit (non-life-cycle)	1,472			
Shaw Dolphin Replacement		2,246	2,016	2,016
Southworth Transfer Span Retrofit (non-life-cycle)	1,583			
Tahlequah Transfer Span Retrofit (non-life-cycle)	1,370	1,370	1,243	1,243
Tahlequah Dolphin Replacement			533	533
Vashon Dolphin Replacement	8,587	8,586	8,074	8,074
Vashon Transfer Span Retrofit (non-life-cycle)		2,945	2,671	2,671
Total	36,332	36,332	43,078	39,307

E. Observations

1. Life-Cycle Cost Model

The projects included in catch-up preservation project should be reviewed once the life-cycle cost model is updated.

2. Non-Life-Cycle Costs

The intent of the catch-up preservation program is to increase the percentage of systems and structures operating within their life-cycle. It appears inconsistent with that purpose to include non-life-cycle expenditures within the project.

Washington State Ferries Financing Study

Technical Appendix 4: Forecasting Models Review



Prepared For:

Joint Transportation Committee
Washington State Legislature

Consultant Team

Cedar River Group, LLC
Mirai Associates
Norway Hill Development
RL Collier Company

December 31, 2006

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Executive Summary

This review of Washington State Ferries' (WSF) forecasting models is part of the Washington State Ferries Financing Study. This review examines WSF's two forecasting models: the econometric demand model used for revenue forecasting and the network-based travel demand model used in developing the long-range strategic plan.

This review included interviews with staff from WSF, the Puget Sound Regional Council, and WSF's modeling consultants.

Foundation for Planning

Ridership projections are key to the development of the capital and operating forecasts for WSF, laying the foundation for future planning. WSF's projections of ridership are used to determine what vessel capacities are necessary to meet established level-of-service standards. Vessel capacities in turn drive the terminal and landside requirements. The vessel and terminal plans form the basis for the capital program, operating projections, and farebox recovery.

Models

WSF uses two models to project ridership: an econometric demand model for revenue forecasting and a network-based travel demand model for long-range planning.

Econometric Demand Model

The econometric demand model develops revenue and ridership forecasts for the relatively near term by six fare categories. It provides:

- Current biennium and sixteen-year projections of capacity constrained ridership and associated revenue corresponding to the capital plan
- Monthly revenue and ridership forecasts by route, month, and fare category for the forthcoming fiscal year
- Revenue and ridership impacts of alternative service and fare scenarios
- Unconstrained demand estimates underpinning capacity constrained demand
- Fare elasticities of demand estimates by six fare categories

Uses: WSF uses these projections for:

- Forthcoming fiscal year and current biennium budgeting and short-range service planning
- Revenue estimates for the Transportation Revenue Forecast Council for state-wide budgeting
- Testing fare policy scenarios for use by the Washington State Transportation Commission (WSTC) Tariff Policy Committee.

Accuracy: The econometric modeling process, which is updated quarterly, has proven to be quite accurate in forecasting revenues.

Data: The model relies on ridership and fares data from WSF, as well as economic and demographic data from the Office of Financial Management (OFM), the Washington State Department of Transportation (WSDOT) and Global Insight, a commercial provider of databases of economic information.

For forecasting, the demand models use fares as assumed by the legislature in the 2006 session--a 2.5 percent increase per year with fares rounded up to the nearest nickel. This assumed effective rate of increase results in rising real fares over time because inflation is currently projected to be less than the compound impact of 2.5 percent per year plus nickel up-rounding.

Forecasts: The models project both unconstrained systemwide demand and route ridership by six fare categories as well as anticipated vessel capacity constraints for vehicles in order to yield revenue forecasts. The model estimation process yields price elasticities of demand for each of the six fare categories. Over time, the models will adapt to changing ridership patterns, and the elasticities will evolve. For example, Parsons Brinckerhoff, the consultant who manages the model for WSF, notes that after a series of significant real fare increases in the first part of the current decade, “ridership has proved to be more inelastic to real fare and real gas price increases than previously estimated.”

Travel Demand Model

The travel demand model, which is used by WSF for its long-range strategic plan, provides:

- Estimates of ridership for a twenty-five year period
- Estimates of ridership by route, method of boarding and mode of access/egress for the four-hour PM peak period on a typical weekday (assumed to be a Tuesday, Wednesday and/or Thursday in May)
- Estimates under service assumptions that tend to differ from the current programmed service levels employed by the more near-to-mid term econometric forecast. For the Draft Long-Range Strategic Plan 2006-2030, these assumptions are currently planned service (baseline) with four new 144-vehicle vessels, at service levels as designated in the WSF Draft Long-Range Strategic Plan.

Uses: WSF uses the projections from the travel demand model for:

- Long-range system, corridor, and route planning
- Identifying future service and capital needs
- Providing long-range travel demand forecasts to the Puget Sound Regional Council (PSRC) and Metropolitan Planning Organizations (MPOs) to support regional transportation planning
- Providing data for other major transportation projects such as the Alaskan Way Viaduct
- Guiding terminal design

Accuracy: WSF does not track actual ridership and/or revenues against this model, in part because it is updated only when a new long-range system plan is developed. The

consultants note that the projections developed from this model in the 1999 Long Range Systems Plan were very inaccurate because they could not anticipate the steep fare increases resulting from the loss of Motor Vehicle Excise Tax (MVET) support.

Data: The travel demand model relies on information from the PSRC Regional Travel Demand Model for King, Pierce, Snohomish and Kitsap counties; from OFM on population and growth outside of the PSRC areas; and on WSF data, including the results of the WSF 1999 origin and destination survey.

Forecasts: The forecasts provide the annual ridership for each route under different service assumptions by direction, total vehicle, in-vehicle passengers, and walk-on passengers.

Ridership Projections

The two models have significantly different ridership projections, with the econometric model's projections substantially lower than the travel demand model. The econometric model projects 24 percent growth between 2006 and 2023, while the travel demand model projects 56 percent. Projected ridership is closer for vehicle travel (4 percent higher in travel demand model) than for passenger travel (43 percent higher).

WSF's Draft Long-Range Strategic Plan anticipates adding new service. Ridership in the plan is projected to 2030, with a total growth of 88 percent projected with the new service additions, compared to 68 percent under the baseline service levels.

Model Differences

The models generate substantially different ridership projections because of the inputs used, how frequently they are updated, and their use of peak period forecasts. WSF has not attempted to reconcile the differences in the models.

Model Updates

The two models provide different results in part because they are updated on different cycles. The econometric model is updated quarterly based on OFM's quarterly updates of population and employment. The travel demand model is dependent on the PSRC updates, which are completed less frequently.

Auto Operating Costs

One difference between the two models is how they deal with the cost of operating an automobile. Automobile operating costs are a primary driver of vehicle ridership on the ferries. Ridership is reduced as the costs of operating an automobile increase. In the PSRC travel demand model, automobile operating costs are assumed to remain constant with inflation. In contrast, the econometric model factors in a variable for gasoline prices and for the changes in vehicle fuel efficiency.

Peak Period

Unlike the econometric model, the travel demand model is based on the four-hour PM peak period, which is then extrapolated to the rest of the day, week, and year. The comparison of outputs between the two models is highly dependent on the assumptions made for extrapolating weekday PM peak period demand into annual values. If the relationship between the peak and non-peak periods changes as a result of tariff increases or service modifications, it will effect the extrapolation to an annual ridership.

PSRC Travel Demand Model: Cross-Sound Demand

A key input to WSF's travel demand ridership projection is the PSRC model forecast of cross-Sound ferry ridership growth. The consultant's review indicates that the travel demand model may overstate cross-Sound demand due to its estimate of the number of vehicles that will use the new Tacoma Narrows Bridge instead of the ferry. The PSRC model assumes 66,000 vehicles will use the Tacoma Narrows Bridge daily in 2020, while WSDOT estimates the volume to be 120,000 vehicles a day.

For this study, Mirai Associates recalculated the cross-Sound ridership projection using a calculation of daily vehicle use of the Tacoma Narrows Bridge based on WSDOT's published projections of bridge use. The resulting estimate calculated 4.6 million fewer ferry trips than the travel demand model, resulting in a revised systemwide baseline ridership estimate in 2030 that is 11 percent lower than the current travel demand model projection.

Relationship to Historical Ridership Growth

WSF's Draft Long-Range Strategic Plan suggests that the relatively high growth rates anticipated in the baseline and the planned service projections are reasonable, in part because they are consistent with previous growth rates. However, this comparison to prior time periods should be reviewed with caution because of the following factors.

1. The 1970-1980 decade had the highest increase in two-worker households in U.S. history, resulting in an increase of work trips at a significantly higher percentage rate than in the current decade.
2. Rates during this period actually lagged behind inflation, so that the real cost of ferry ridership declined during this period.
3. The current plan for 2.5 percent annual rate increases assumed in both models is greater than the anticipated rate of inflation, resulting in an increase in real fares.

Recreational Uses

As is typical of transportation models, neither of the ones used by WSF includes specific information about trends in recreational use of the ferries. The models rely on projections of population and employment. This lack of information is most important in projecting demand for the Keystone-Port Townsend and Anacortes-San Juan Islands-Sidney routes, which have heavy recreational use.

Customer Information/Origin and Destination Study

WSF did not update its 1999 origin and destination study for the Draft Long-Range Strategic Plan, as it was less than five years old when the agency began drafting the plan

in 2003. WSF's Draft Long-Strategic Plan does incorporate a more limited origin and destination study conducted in 2003 in the South Sound to support analysis of passenger only ferry service.

WSF's service and tariff structure has changed substantially since 1999. A comprehensive review of the impact of those changes on customer origin and destination patterns will not be available until the survey is updated in 2006.

Additionally, there is little information available on the characteristics of the vehicle market. The need for expanded capacity to support increased vehicular traffic is largely driving WSF's capital plan. There are no surveys or other market information available on vehicle or walk-on passengers' likely response to operational or tariff changes.

Recommendations

1. Reconcile the econometric and the travel demand model projections.
2. Pending reconciliation, use the econometric model projection of ridership for capital decisions.
3. Develop additional ferry market information, particularly about recreational use and vehicle use.
4. Add a performance measure focused on tracking actual versus forecasted ridership from the travel demand model.

The table on the following pages compares the two WSF demand forecasting processes and the consultants' observations and recommendations.

Comparison Matrix for the Two WSF Demand Forecasting Processes

Attribute	Econometric Demand Model & Revenue Forecasting Process	Network-Based Travel Demand Forecasting Process
Purpose	<ul style="list-style-type: none"> To provide mid-range revenue and ridership projections monthly or annually for WSF budgeting and state financial planning purposes. To assess revenue and ridership impacts of fare increases and various tariff policies. To assess revenue and ridership impacts or conduct “what-if analyses” for minor service changes. To estimate revenue impacts from major service changes as a result of demand changes reported from the network-based travel demand model Forecasting Process. 	<ul style="list-style-type: none"> To forecast how many people and vehicles will use WSF facilities on a daily basis (with emphasis on weekday peak travel periods) under a specified set of circumstances (e.g., with a given set of service specifications, land use assumptions, etc.). Time period is, from the present through long-range future, with current forecasts going out to 30-years. To test the likely ferry travel demand and mode choice (by mode of access/egress) impacts of alternative ferry routes; service attributes (frequency, travel time, costs, capacity); and supporting highway and transit service characteristics. To provide network-based demand estimates to support environmental work regarding WSF service and/or facility expansions, as required under NEPA.
Uses/Forum for Use	<ul style="list-style-type: none"> WSF budgeting and short-range service planning. Revenue estimates for the Transportation Revenue Forecast Council for statewide budgeting. Testing of fare policy scenarios for use by the Washington State Transportation Commission Tariff Policy Committee. 	<ul style="list-style-type: none"> WSF long-range system, corridor, and route planning. Identifying future service and capital needs. Provides long-range travel demand forecasts in context of metropolitan transportation planning in cooperation with PSRC and outlying MPOs. Provides pertinent data to other projects, e.g., Alaskan Way Viaduct, terminal design efforts, etc.
Main Outputs	<ul style="list-style-type: none"> Sixteen year projections for revenue and ridership by month, route, and fare category Fare elasticities of demand by fare category 	<ul style="list-style-type: none"> Weekday PM peak ridership in O-D form by route, boarding mode, and mode of access/egress for a selected forecast year and scenario; expandable to week, daily or annual volumes, with results for intermediate years via interpolation. Ferry share of adjacent mode (transit/highway) demand.
Strengths	<ul style="list-style-type: none"> Provides detailed quarterly route-by-route traffic and revenue estimates that can be used for operations budgeting. Performance audit showed model to be quite accurate (particularly when service changes are limited to existing routes such that the route structure remains relatively static.) Provides information on seasonal trends and annual trends and yields results at a monthly detail level. Responds to quarterly changes in the projections for state-level economic and demographic input variables as well as existing ridership and revenue trends. 	<ul style="list-style-type: none"> Accepted standard industry practice for long-range (10, 20 and 30-year) forecasts and demand projections to support alternatives analysis and project-level environmental planning; conforms to both NEPA/SEPA and MTP Planning requirements. Provides typical PM peak period (expandable to daily) travel volumes for weekday travel in a format that is consistent with other regional planning efforts. Received high marks from performance audit; model updates have been implemented under direction of panel of experts. Captures land side diversion (e.g., TNB), changes in mode shift,

Attribute	Econometric Demand Model & Revenue Forecasting Process	Network-Based Travel Demand Forecasting Process
	<ul style="list-style-type: none"> Can be updated with relative ease to meet quarterly forecast requirements. 	<p>mode of access/egress, as well as impacts of new routes/terminals, travel patterns of each route's users.</p> <ul style="list-style-type: none"> Identifies future peak period ferry travel volumes by mode of access/egress to develop ferry terminal design requirements. Captures anticipated effects of future land use and other localized conditions on ferry travel behavior; links land use and transportation analyses consistent with GMA. Appropriate model for comparing alternative system plans against one another as well as alternatives at the corridor level.
Shortcomings	<ul style="list-style-type: none"> Does not specifically capture relative geographic (e.g., TAZ-specific) changes in land use over time, nor major changes in the ferry system routes or levels of service. Does not provide information about weekday versus weekend travel patterns, nor intra-day and directional travel patterns. Provides only very limited travel mode information, and no mode of access/egress information about walk-on boardings. 	<ul style="list-style-type: none"> Does not capture monthly or seasonal variation in travel and relies on external expansion factors to predict annual demand.
Consultant Observations and Recommendations	<ul style="list-style-type: none"> Very accurate Includes auto operating costs/frequently updated Used for performance measurement Recommend using for legislature's capital decisions until models are reconciled 	<ul style="list-style-type: none"> Accuracy not tracked, but has changed substantially since last developed in 1999. Infrequently updated. Extrapolates from peak to non-peak which may have changed with fare increases and service reductions Overstates ridership by understating vehicle use of Tacoma Narrows Bridge Recommend adding performance measurement
Both Models/Consultants Observations & Recommendations	<ul style="list-style-type: none"> Neither model provides information on recreational customers Recommend study to gather more information on recreational customers, particularly for the Keystone-Port Townsend and San Juan routes Recommend additional marketing study on vehicle customers with analysis of traffic demand and operational strategies 	

Source: WSF Planning/Consultants

Section One Introduction

This review of Washington State Ferries' (WSF) forecasting models is part of the Washington State Ferries Financing Study. The review examines WSF's two forecasting models: the econometric demand model used for revenue forecasting and the network-based travel demand model used in developing the long-range strategic plan.

This review was conducted in association with staff from the Senate Transportation Committee, the House Transportation Committee and the Joint Transportation Committee. It included interviews with staff from WSF, the Puget Sound Regional Council and WSF's modeling consultants.

A. Foundation for Planning

Ridership projections are key to the development of the capital and operating forecasts for WSF, with these projections laying the foundation for future planning. WSF's projections of ridership are used to determine what vessel capacities are necessary to meet established level of service standards. Vessel capacities in turn drive the terminal and landside requirements. The vessel and terminal plans form the basis for the capital program, operating projections, and farebox recovery. The projection of demand underpins WSF operational, capital, and financial planning (see *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports* and *Appendix 2: Capital Program Prioritization and Terminal and Repair Facility Capital Projects Review* for further information).

Section Two Models

WSF uses two models to project ridership: an econometric demand model for revenue forecasting and a network-based travel demand model for long-range planning.

A. Econometric Demand Model

1. Information Provided by the Model

The econometric demand model develops revenue and ridership forecasts for the relatively near term by six fare categories. It provides:

- Current biennium and sixteen-year projections of capacity constrained ridership and associated revenue corresponding to the capital plan
- Monthly revenue and ridership forecasts by route, month, and fare category for the forthcoming fiscal year
- Revenue and ridership impacts of alternative service and fare scenarios
- Unconstrained demand estimates underpinning capacity constrained demand
- Fare elasticities of demand estimates by six fare categories

2. Information Uses

WSF uses these projections for:

- Forthcoming fiscal year and current biennium budgeting and short-range service planning
- Revenue estimates for the Transportation Revenue Forecast Council for state-wide budgeting
- Testing fare policy scenarios for use by the Washington State Transportation Commission (WSTC) Tariff Policy Committee

3. Accuracy of Forecasts

The model, which is updated quarterly, has proven to be quite accurate, see Table 1 below. During the period from 2001 to 2005, when tariffs were raised by 56 percent, the difference between forecasted revenue and actual ranged from -8.3 percent for the June 2001 forecast of 2005 revenue, to a low of 0 percent for the June 2004 forecast of 2004 revenue. For ridership, the model ranged from a -6.3 percent variance between actuals and forecast for the June 2001 forecast of 2005 ridership, and -0.1 percent for the June 2004 forecast of 2004 ridership.

**Table 1. Econometric Model:
Comparison of Forecasts and Actuals (000s)**

	2001	2002	2003	2004	2005
Historical Date					
Actual Revenue	\$96,200	\$110,497	\$119,825	\$126,920	\$132,030
Actual Ridership	26,600	25,630	24,425	24,408	23,860
Actual Fare Changes					
Actual	20.0%	12.5%	5.0%	5.0%	5.0%
Effective with rounding	22.9%	13.6%	7.7%	5.4%	6.3%
June 2001 Forecast					
Forecast Revenue	\$95,784	\$103,308	\$110,538	\$117,860	\$121,085
% variance	-0.4%	-6.5%	-7.8%	-7.1%	-8.3%
Forecast Ridership	26,695	24,702	23,644	23,029	22,349
% variance	0.4%	-3.6%	-3.2%	-5.6%	-6.3%
June 2002 Forecast					
Forecast Revenue		\$109,744	\$114,427	\$123,531	\$131,413
% variance		-0.7%	-4.5%	-2.7%	-0.5%
Forecast Ridership		25,630	23,714	23,142	23,001
% variance		0.0%	-2.9%	-5.2%	-3.6%
June 2003 Forecast					
Forecast Revenue			\$119,755	\$121,567	\$128,756
% variance			-0.1%	-4.2%	-2.5%
Forecast Ridership			24,606	23,606	23,736
% variance			0.7%	-3.3%	-0.5%
June 2004 Forecast					
Forecast Revenue				\$126,862	\$129,099
% variance				0.0%	-2.2%
Forecast Ridership				24,377	24,056
% variance				-0.1%	0.8%

Source: PB Consult Presentation, June 19, 2006

4. Data

The model relies on ridership and fares data from WSF, as well as economic and demographic data from the following sources: the Office of Financial Management (OFM), the Washington State Department of Transportation (WSDOT), and Global Insight, a commercial provider of databases of economic information.

a) WSF ridership data

The model relies on detailed ridership, fares and revenue data from WSF. Monthly ridership by seventeen route breakdowns is provided (see Table 2 for a sample month's data). For each of the seventeen routes, ridership is provided by three passenger and three auto fare categories (full fare, commuter, and other), along with two further passenger delineations (surcharge and walk-on), and two further auto delineations (surcharge and oversized).

**Table 2. Econometric Model:
Sample Monthly Ridership Data (April 2006)**
(000s)

Route (17)	Passenger Categories						Auto Categories					
	Full Fare	Commuter	Other	Total	Sur	Walk-on	Full	Commuter	Other	Total	Sur	Over
Seattle-Bremerton	49,267	57,039	24,725	131,031	2,771	89,311	30,998	20,256	6,871	58,125	104	508
Seattle-Bainbridge Island	106,295	174,494	59,109	339,898	10,942	197,718	74,942	76,969	22,557	174,468	824	3,426
Edmonds-Kingston	71,636	38,381	50,269	160,286	510	42,384	101,196	62,191	27,215	190,602	736	6,222
Tahlequah-Pt. Defiance	6,044	10,544	5,338	21,926	274	6,614	6,750	22,620	2,720	32,090	452	1,332
Southworth-Vashon	1,502	3,312	1,206	6,020	8	3,580	2,484	6,604	912	10,000	122	2,342
Fauntleroy-Vashon	15,460	42,410	11,924	69,794	1,044	24,756	17,658	69,204	6,206	93,068	564	2,342
Fauntleroy-Southworth	10,388	15,944	6,549	32,881	472	13,168	17,581	19,345	7,822	44,748	86	397
Seattle-Vashon POF	880	9,148	202	10,230	428	10,230						
Mukilteo-Clinton	52,928	53,688	40,654	147,270	424	40,570	71,164	93,475	21,216	185,855	1,629	6,021
Pt. Townsend-Keystone	17,846	1,850	11,280	30,976	223	1,260	19,992	1,993	6,716	28,701	173	1,699
Interisland							3,192	4,066	672	7,930	156	522
Anacortes-Lopez	4,710	2,970	3,520	11,200	416	3,294	4,152	6,714	1,628	12,494	138	760
Anacortes-Shaw	316	316	432	1,064	6	244	280	732	110	1,122	4	60
Anacortes-Orcas	11,364	3,742	6,722	21,828	120	4,186	10,402	8,374	2,694	21,470	230	1,416
Anacortes-Friday Harbor	15,214	5,494	7,968	28,676	292	10,056	10,012	10,320	3,632	23,964	238	2,104
Interisland-Sidney	681		387	1,068	14	448	418		143	561		26
Anacortes-Sidney B.C.	2,401		1,376	3,777	21	806	1,584		412	1,996	6	67
Monthly Total	366,932	419,332	231,661	1,017,925	17,965	448,625	372,805	402,863	111,526	887,194	5,462	29,244

Source: Parsons Brinckerhoff Presentation, June 19, 2006

WSF provides monthly farebox revenue information by route, plus sales at the customer service kiosks, and by a total of twenty-two fare categories (seven passenger, ten vehicle, two motorcycle, three permit), and hazmat charter, freight, charter cruises, and miscellaneous fare revenues.

**Table 3: Econometric Model:
Sample Farebox Revenue Monthly Data**
(\$000s)

Farebox Revenue	Seattle-Bremerton	Seattle-Bainbridge	Edmonds-Kingston	Seattle-Vashon POF	➤ Cont. for Other Routes
Passenger					
Full Fare	209,994	430,300	317,088	-15,085	
Commuter	42,199	222,518	69,525	14,469	
Other	-246	266	-437	69	
Monthly Pass	504,228	381,497	42,968	52,589	
Passenger Only					
Full Fare				19,102	
Commuter				410	
Other Discount					
Vehicle					
Full Fare	384,166	800,834	1,077,390		
Commuter	200,806	822,725	656,522		

Farebox Revenue	Seattle-Bremerton	Seattle-Bainbridge	Edmonds-Kingston	Seattle-Vashon POF	➤ Cont. for Other Routes
Other Discount	32,855	84,688	145,609		
Oversize-Non-commercial	1,719	10,837	31,369		
Misc.		349			
Commercial					
Auto	0				
Auto Discount	0				
Oversize-Non-commercial	14,870	126,161	229,010		
Discount					
Reservation Fee					
Motorcycle					
Full Fare	2,764	5,812	7,514		
Commuter	9,859	42,909	17,002		
Permits					
Bicycles	517	671	185	49	
Vanpool			20		
Carpool	20	20			
Hazmat Charter					
Freight					
Charter Cruises					
Miscellaneous					
Total Farebox Revenue	1,403,750	2,929,587	2,593,763	71,604	

Source: Parsons Brinckerhoff Presentation, June 19, 2006

b) Economic and demographic data projections

Information is provided on employment, population, real personal income, inflation, price indices for gas and refined petroleum, vehicle fleet efficiency and housing units from OFM, WSDOT and Global Insight.

c) Fare data

Actual fare inputs are based on the historical and current nominal fares. Future fare increases are applied to the Central Puget Sound fares (i.e., rates for Seattle-Bainbridge, Seattle-Bremerton, and Edmonds-Kingston routes), and rounded up to the nearest nickel. Fares on other routes are then determined using the tariff route equity (TRE) relationships, with the fares expressed as a percentage of the Central Sound fares. For example, rate changes are applied to the Central Sound fares, rounded to the nearest nickel, and then applied to the other routes by the TRE percentage (i.e., 59 percent for Mukilteo-Clinton) and rounded to the nearest nickel. The resulting fare series for each fare category are converted to real (inflation adjusted) fares using the history and forecast for the Implicit Price Deflator for Personal Consumption as compiled by Global Insight.

Six fare categories of ridership are forecasted:

1. Passenger full fare

2. Passenger commuter (frequent user discount book/pass)
3. Passenger other discounted (seniors, youth, etc.)
4. Vehicle/driver full fare
5. Vehicle/driver commuter (frequent user discount book)
6. Vehicle oversize + other discounted (based on average fare realized)

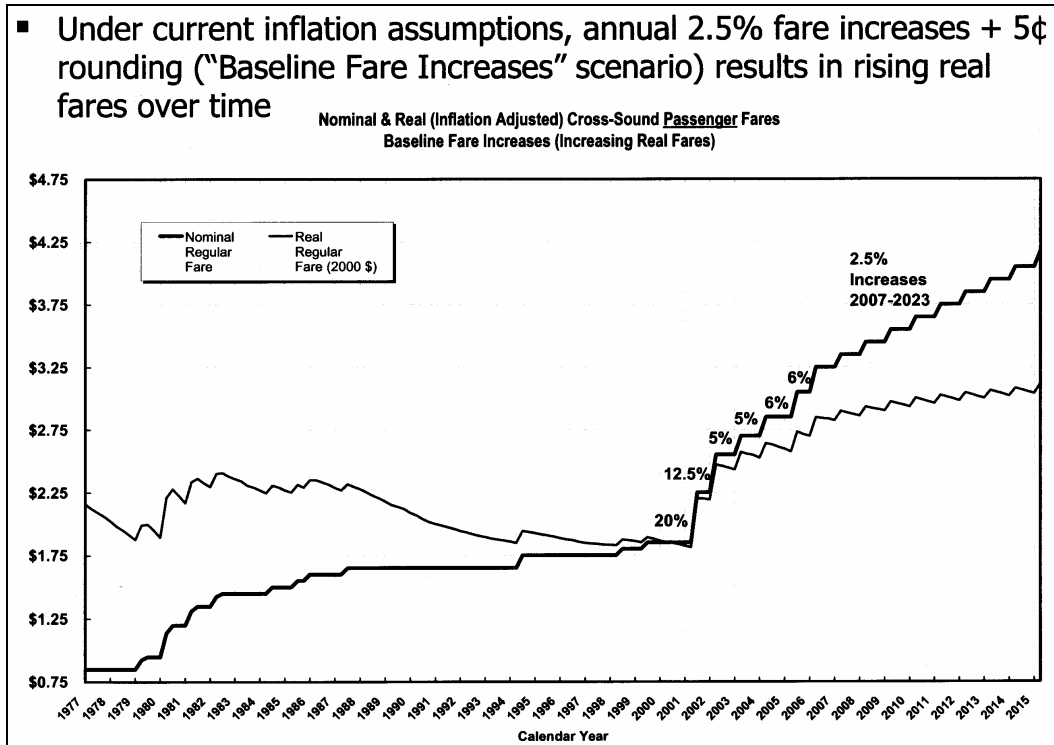
Table 4 illustrates these fare categories and the TRE percentages.

**Table 4. Econometric Model:
Actual (no inflation) Fare Inputs with Tariff Rate Equity Factor**

Fares**	Central Puget Sound*		Port Townsend-Keystone & Fauntleroy-Southworth & Interisland		Pt. Defiance-Tahlequah & Fauntleroy-Vashon & Vashon-Southworth		Mukilteo-Clinton		Anacortes-San Juans (Ave)	
	Pass	Veh/Driver	Pass	Veh/Driver	Pass	Veh/Driver	Pass	Veh/Driver	Pass	Veh/Driver
One Way Fares	\$3.25	\$11.25	\$2.50	\$8.70	\$2.10	\$7.20	\$1.93	\$6.65	\$5.12	\$14.96
Regular Fare:		\$14.10		\$10.90		\$9.00		\$8.35	\$6.16	\$20.14
Peak Season Fare		\$9.00		\$6.69		\$5.76		\$5.32	\$3.46	\$10.90
Commuter Fare	\$2.60		\$2.00		\$1.68		\$1.54		\$2.55	
Half Fare (Pass)	\$1.60		\$1.25		\$1.05		\$0.95		\$1.00	
Surcharge Fare:	\$0.50	\$11.25	\$0.50	\$8.70	\$0.50	\$7.20	\$0.50	\$6.65	\$2.00	\$14.96
Peak Season Vehicle		\$14.10		\$10.90		\$9.00		\$8.35		\$20.14
Tariff Rate Equity % Central Puget Sound									115% Lopez 138% Shaw, Orcas 164% Friday Harbor	
* Includes Bainbridge-Seattle, Bremerton-Seattle and Edmonds-Kingston routes										
** Model also uses actual other average fares peak and non-peak, which vary by route.										

For forecasting, the demand model uses “real” fares, which are the actual fares adjusted for inflation. Current forecasts assume an average fare increase of 2.5 percent per year, which results in rising real fares over time because inflation is assumed to be less than 2.5 percent per year. This is shown in Figure 1 below.

Figure 1. Fares and Inflation



Source: PB Consult Presentation, June 19, 2006

4. Forecasts

Using the ridership, revenue, economic forecast, and fare data described above, the model projects both unconstrained and constrained systemwide demand, and route ridership and revenue by six fare categories for the current biennium and the sixteen-year period of the capital plan.

a) Unconstrained demand

Systemwide unconstrained demand is projected using quarterly data from 1981 forward by the six fare categories. Different sets of demand forecasts are produced for different sets of fare policy assumptions. A separate process using autoregressive-integrated-moving average models with monthly data is used to apportion the system-wide projections by route and fare category.

b) Constrained demand

The constrained demand is factored for vehicle capacity constraints on vessels and resultant mode shifts (i.e., from vehicle to walk-on) on a quarterly basis. The model is not adjusted for constraints on walk-on passengers because none currently exist. Passenger and vehicle surcharges are forecast for revenue purposes.

c) Revenue forecasts

The process applies projected fares to the capacity constrained ridership forecasts to yield revenue forecasts by six fare categories. The econometric model estimation process yields price elasticities of demand for each of the six fare categories. Over time, the

models will adapt to changing ridership patterns, and the elasticities will evolve. For example, Parsons Brinckerhoff, the consultant who manages the model for WSF, notes that after a series of significant real fare increases in the first part of the current decade, “Ridership has proved to be more inelastic to real fare and real gas price increases than previously estimated.” (Presentation, June 19, 2006). Vehicle-driver full fare revenues have proven to be the most inelastic fares.

B. Travel Demand Model

1. Information Provided by the Model

The travel demand model, which is used by WSF for its long-range strategic plan, provides:

- Estimates of ridership for a twenty-five year period
- Estimates of ridership by route, method of boarding and mode of access/egress for the four-hour PM peak period on a typical weekday (assumed to be a Tuesday, Wednesday or Thursday in May)
- Estimates under different service assumptions, which for the Draft Long-Range Strategic Plan 2006-2030 are for the baseline or currently planned service with four new 144-vehicle vessels and for the Draft Plan service levels.

2. Information Uses

WSF uses the projections from the travel demand model for:

- Long-range system, corridor, and route planning
- Identifying future service and capital needs
- Providing long-range travel demand forecasts to the Puget Sound Regional Council (PSRC) and Metropolitan Planning Organizations (MPOs) to support regional transportation planning
- Data for other major transportation projects such as the Alaskan Way Viaduct
- Guiding terminal design

3. Accuracy of Forecasts

WSF does not track actual ridership and/or revenues against this model, in part because it is updated only when a new long-range system plan is developed. The consultants note that the twenty-year projection for the 1999 Long-Range Systems Plan was for a 70 percent increase in ridership by 2018. By comparison the 2006-2030 Draft Long-Range Strategic Plan projects a 39 percent increase in ridership between 1998 and 2018 (see Table 5). This reflects the actual drop in ridership that occurred with the increase in fares between 2001 and 2005, which was not anticipated in the 1999 Long-Range Systems Plan.

**Table 5. Travel Demand Model Ridership Projections for 2018,
From 1999 and 2006 Long-Range Plans**

Ridership	1998 Actual	2005 Actual	98-05	2018 (1999 Proj)	2018 (2006 Proj)	98-18
Passenger	14,701	13,071	-11%	n/a	14,130	-4%
Vehicle	11,215	10,810	-4%	n/a	21,967	96%
Total Riders	25,916	23,881	-8%	70%	36,097	39%

4. Data

The travel demand model relies on information from the PSRC Regional Travel Demand Model, which includes King, Pierce, Snohomish and Kitsap counties; from OFM on population and growth outside of the PSRC areas; and on WSF data, including the results of the WSF 1999 origin and destination survey. As shown in Table 6, below, eighty-one percent (81%) of 2005 ridership is from the eleven terminals in the PSRC counties.

**Table 6. Terminals: Location
in Relation to PSRC Counties**

Terminal	Within PSRC	Outside PSRC
Bainbridge	x	
Bremerton	x	
Edmonds	x	
Kingston	x	
Seattle	x	
Pt. Defiance	x	
Tahlequah	x	
Southworth	x	
Vashon	x	
Fauntleroy	x	
Mukilteo	x	
Clinton		x
Port Townsend		x
Keystone		x
Anacortes		x
Friday Harbor		x
Lopez		x
Orcas		x
Shaw		x
Sidney		x
# of terminals	11	9
% 2005 ridership	81%	19%

a) PSRC Regional Travel Demand Model

The PSRC Regional Travel Demand Model “is one of a number of regional models whose inputs and outputs are interrelated to form a set of regional analytic and forecasting tools. They include a regional forecast model, land use model, land use sketch

planning tool and travel demand model” (Draft Long-Range Strategic Plan, Technical Appendix A, p 2).

The Regional Travel Demand Model includes four sub-models:

- Trip generation model, which uses information from the land-use model and other information to generate projected trips classified by purpose and time of day;
- Trip distribution model, which uses information from the trip generation models along with other information to distribute trips across the PSRC region by origin and destination;
- Mode choice model, which determines which trips are assigned to highways and which to transit; and
- Trip assignment model, which distributes modal flows of trip origins and destinations to each mode’s own transportation network.

Information inputs to the PSRC model include two inputs from WSF—transit route and ferry fares. Other inputs include: roads and non-motorized facilities, other transit routes, other tolls, park-and-ride lots with capacities, transit walk access, time transfer stations, through trips and external trips, and vanpool demand.

The Draft Long-Range Strategic Plan 2006-2030 used Version e05 of the PSRC model. The model is currently being updated by PSRC.

b) OFM

OFM projections are used to forecast employment and population outside of the four county PSRC area. WSF also receives input regarding local land-use forecasts and local transportation plans compiled by OFM.

c) WSF data

WSF provides data to the travel demand model including information from its 1999 Origin and Destination Survey (See *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, for further information.). Other information provided by WSF includes: data on levels of service including fares, frequencies of service, and capacities. For the Draft Long-Range Strategic Plan, this included for each route: the average headway; the average vehicle capacity per sailing; the average vehicle capacity over the four-hour PM peak; the average crossing time; the average passenger fare; and the average vehicle fare for 2003, 2020, and 2030.

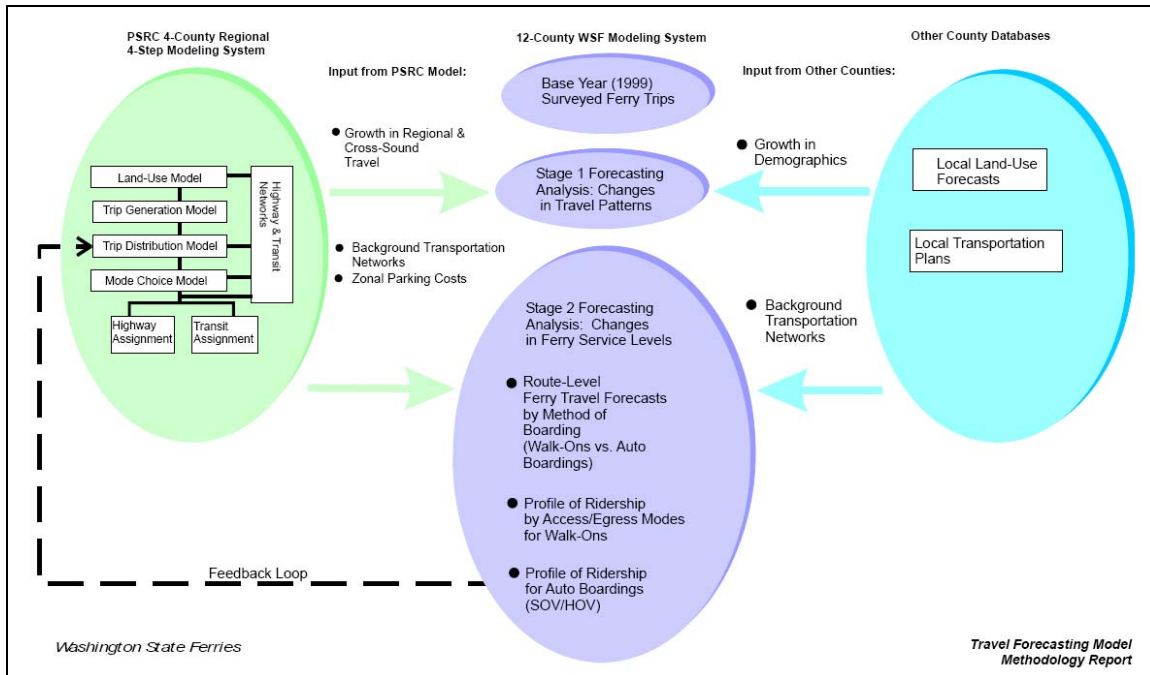
Table 7 below shows the level-of-service assumptions used in the travel demand model for the Draft Long-Range Strategic Plan 2006-2030.

Table 7: Level of Service Assumptions							2020											
	2003						Under Currently Planned Service						Under Draft Plan Service					
Route	Hwy	Cap	Cap-4h	Xtime	Pfare	Vfare	Hwy	Cap	Cap-4h	Xtime	Pfare	Vfare	Hwy	Cap	Cap-4h	Xtime	Pfare	Vfare
Point Defiance - Tahlequah	50	65	312	15	93	371	56	87	373	15	151	567	56	87	373	15	151	567
Southworth - Vashon	55	75	327	15	91	378	50	40	192	15	151	567	50	40	192	15	151	67
Fauntleroy - Vashon	30	90	720	15	93	370	35	91	624	15	151	567	30	107	856	15	151	567
Southworth - Fauntleroy	40	61	366	31	141	569	44	75	409	31	164	745						
Seattle - Southworth													50	124	595	35	239	979
Seattle - Southworth (Psngr Only)	86	125		50	132		86	125		50	296							
Seattle - Vashon (Psngr Only)	60	125		25	132		86	125		30	296		86	250		30	296	
Seattle - Bremerton	75	110	352	55	143	583	75	144	461	55	239	979	50	136		55	239	979
Seattle - Bremerton (Psngr Only)	60	350		37	136													
Seattle - Bainbridge Island	46	218	1,137	30	139	567	51	202	951	30	239	979	51	202	951	30	239	979
Seattle - Kingston (Psngr Only)													30	350	2,800	35	478	
Edmonds - Kingston	40	212	1,272	25	144	582	40	195	1,170	25	239	979	22	166	1,811	25	239	979
Mukilteo - Clinton	30	130	1,040	15	95	387	30	144	1,152	15	124	564	20	136	1,632	15	124	564
Port Townsend - Keystone	46	75	391	30	153	614	90	124	331	30	175	822	90	144	384	30	175	822
Total	5,917						5,663						9,594					
	2030												Key:					
	Under Currently Planned Service						Under Draft Plan Service						Hwy (in minutes): Average headway, or the average time between departures. Cap: Average capacity per sailing (with the exceptions of the passenger only routes, which are average passenger capacity per route.) Ca-4h: Average vehicle capacity over the 4-hour PM peak. Xtime (in minutes): Average crossing time. Pfare (in cents): A measure of the average passenger fare (constant \$2005). Vfare (in cents): A measure of the average vehicle fare (constant \$2005).					
Route	Hwy	Cap	Cap-4h	Xtime	Pfare	Vfare	Hwy	Cap	Cap-4h	Xtime	Pfare	Vfare						
Point Defiance - Tahlequah	56	87	373	15	151	567	56	87	373	15	151	567						
Southworth - Vashon	50	40	192	15	151	567	50	40	192	15	151	567						
Fauntleroy - Vashon	35	91	624	15	151	567	30	124	992	15	151	567						
Southworth - Fauntleroy	44	75	409	31	164	745												
Seattle - Southworth							50	188	902	35	239	979						
Seattle - Southworth (Psngr Only)	86	125		50	296													
Seattle - Vashon (Psngr Only)	86	125		30	296		86	250		30	296							
Seattle - Bremerton	75	144	461	55	239	979	50	144	691	55	239	979						
Seattle - Bremerton (Psngr Only)																		
Seattle - Bainbridge Island	51	202	951	30	239	979	51	202	951	30	239	979						
Seattle - Kingston (Psngr Only)							30	350	2,800	35	478							
Edmonds - Kingston	40	195	1,170	25	239	979	22	144	1,571	25	239	979						
Mukilteo - Clinton	30	144	1,152	15	124	564	20	144	1,728	15	124	564						
Port Townsend - Keystone	90	124	331	30	175	822	90	144	384	30	175	822						
Total	5,663						10,584											

4. Forecasts

Figure 2 below shows the relationship between the PSRC model, other county information, and the WSF model in developing forecasts.

Figure 2. Schematic Relationship Among the PSRC Model, WSF Model, and Other Jurisdictional Databases



Source: Draft Long-Range Plan, Technical Appendix

The forecasts are developed in two stages, as follows.

- Stage One** – Takes into consideration changes in demographics between the base year 2003 and future years, and produces expected growth rates in cross-Sound trips by auto and transit modes. “This stage is necessary so that WSF’s ridership forecasts reflect expected changes in regional demographics, transportation system development and cross-Sound travel patterns, especially the dynamics of modal shifts between auto and transit. It also captures the diversion of cross-Sound trips using the Tacoma Narrows Bridge. Ridership forecasts in this stage are primarily dependent on the PSRC Regional Model, which encompasses four of the twelve counties included in the WSF model and approximately 60 percent of WSF’s systemwide ridership” (Draft Long-Range Strategic Plan, Technical Appendix A, p. 11).
- Stage Two** – Uses the growth rates calculated in stage one to expand the ferry trip tables by boarding mode as observed in the 1999 origin and destination survey. The expanded trip tables are then distributed among ferry routes using equilibrium travel assignment principles. “Trips are also segregated into four walk-on modes of travel (walk-walk, walk-auto, auto-walk and auto-auto) and

two auto-boarding modules (single-occupancy vehicle and high-occupancy vehicle)” (Draft Long-Range Strategic Plan, Technical Appendix A, p. 11).

The forecasts provide the annual ridership for each route under different service assumptions by direction, total vehicle, in-vehicle passengers, and walk-on passengers. For the Draft Long-Range Strategic Plan, projections were made for a baseline level of service (current service plans including acquisition of four new 144-vehicle vessels) and for the planned level of service.

Section Three Ridership Projections

The two models have significantly different ridership projections, with the econometric model's projections substantially lower than those from the travel demand model. The baseline ridership projection from the travel demand model is compared with the econometric model in Table 8 below. These are the most comparable projections from the models. There are some differences, as follows.

1. The travel demand model assumes changes in service level resulting from the addition of four 144-vehicle vessels to the fleet and the retirement of four 65-vehicle vessels.
2. The econometric model makes an adjustment in 2009 for closure of the Hood Canal Bridge.
3. The travel demand model ridership does not include the Interisland route or the Vashon-Seattle passenger-only ferry service, the econometric model does include these services.

Both projections assume 2.5 percent annual nominal fare increases, rounded up to the nearest nickel, on May 1 of each year, and both are capacity constrained.

The econometric model's September forecast anticipates that annual ridership will increase by between .8 percent and 3.5 percent between 2008 and 2010 but otherwise will grow at between 0.7 percent and 1.5 percent per year. The travel demand model assumes ridership will grow at rates as high as 5 percent per year.

Total growth between 2006 and 2023 is anticipated in the econometric model to be 24 percent, compared to 56 percent under the travel demand model (see Table 8). By 2023, the models show a 25 percent difference in projected ridership, with the econometric model having total ridership of 29.5 million and the travel demand model having ridership of 36.9 million. Projected ridership is closer for vehicle travel (4 percent higher in travel demand model) than for passenger travel (43 percent higher).

**Table 8. Econometric Model and Travel Demand Model
Ridership Projections, 2006-2023**

(000s)

Econometric Model Forecast Sept. 2006*					Travel Demand Model**				
Sept. 2006 Capacity Constrained Projections					Baseline Projection - Draft Long Range Strategic Plan				
Passenger	Vehicle/Driver	Total Ridership	Annual Rate of Growth		Passenger	Vehicle/Driver	Total Ridership	Annual Rate of Growth	% Econ vs. Travel Demand
2006	13,033	10,784	23,817		13,056	10,563	23,619		1%
2007	13,380	10,637	24,017	0.8%	13,253	10,740	23,993	1.6%	0%
2008	13,634	10,966	24,600	2.4%	13,412	11,093	24,505	2.1%	0%
2009	13,913	11,237	25,150	2.2%	13,456	11,187	24,643	0.6%	2%
2010	14,366	11,657	26,023	3.5%	13,707	11,309	25,016	1.5%	4%
2011	14,525	11,901	26,426	1.5%	14,204	11,463	25,667	2.6%	3%
2012	14,659	12,061	26,720	1.1%	14,956	11,648	26,604	3.7%	0%
2013	14,799	12,213	27,012	1.1%	15,942	11,860	27,802	4.5%	-3%
2014	14,931	12,365	27,296	1.1%	17,104	12,091	29,195	5.0%	-7%
2015	15,064	12,502	27,566	1.0%	18,341	12,328	30,669	5.0%	-11%
2016	15,182	12,624	27,806	0.9%	19,501	12,555	32,056	4.5%	-15%
2017	15,316	12,704	28,020	0.8%	20,326	12,743	33,069	3.2%	-18%
2018	15,452	12,778	28,230	0.7%	21,036	12,918	33,954	2.7%	-20%
2019	15,600	12,843	28,443	0.8%	21,786	13,098	34,884	2.7%	-23%
2020	15,762	12,914	28,676	0.8%	22,579	13,282	35,861	2.8%	-25%
2021	15,935	12,985	28,920	0.9%	22,806	13,408	36,214	1.0%	-25%
2022	16,116	13,064	29,180	0.9%	23,036	13,536	36,572	1.0%	-25%
2023	16,307	13,146	29,453	0.9%	23,270	13,666	36,936	1.0%	-25%
Total Growth 2006-2023				23.7%	56.4%				
*Adjusted to eliminate Seattle-Vashon POF service not included in the travel demand model									
** Does not include San Juan Interisland ridership									

Source: WSF and Parsons Brinckerhoff June 2006 Projections

WSF's Draft Long-Range Strategic Plan anticipates adding new service. With these additions, total ridership in 2023 is projected at 39.4 million, an increase of 67 percent over the 2006 projected ridership in the travel demand model. Ridership in the plan is projected to 2030, with a total growth of 88 percent projected with the new service additions compared to 68 percent under the baseline service levels. See Table 9, below.

**Table 9. Travel Demand Model Projections:
Baseline vs. Planned Service in Draft Long-Range Strategic Plan (2006-2030)**

(000s)

	Travel Demand Model*				Travel Demand Model*				% Base vs. Planned Demand
	Baseline Projection - Draft Long-Range Strategic Plan				Planned Service Projection - Draft Long-Range Strategic Plan				
	Passenger	Vehicle/Driver	Total Ridership	Annual Rate of Growth	Passenger	Vehicle/Driver	Total Ridership	Annual Rate of Growth	
2006	13,056	10,563	23,619		13,056	10,563	23,619		0%
2007	13,253	10,740	23,993	1.6%	13,253	10,740	23,993	1.6%	0%
2008	13,412	11,093	24,505	2.1%	13,412	11,093	24,505	2.1%	0%
2009	13,456	11,187	24,643	0.6%	13,456	11,187	24,643	0.6%	0%
2010	13,707	11,309	25,016	1.5%	13,868	11,349	25,217	2.3%	-1%
2011	14,204	11,463	25,667	2.6%	14,296	11,488	25,784	2.2%	0%
2012	14,956	11,648	26,604	3.7%	15,042	11,674	26,716	3.6%	0%
2013	15,942	11,860	27,802	4.5%	16,241	11,979	28,220	5.6%	-2%
2014	17,104	12,091	29,195	5.0%	17,328	12,218	29,546	4.7%	-1%
2015	18,341	12,328	30,669	5.0%	19,213	13,051	32,264	9.2%	-5%
2016	19,501	12,555	32,056	4.5%	20,366	13,621	33,987	5.3%	-6%
2017	20,326	12,743	33,069	3.2%	21,155	13,888	35,043	3.1%	-6%
2018	21,036	12,918	33,954	2.7%	21,967	14,130	36,097	3.0%	-6%
2019	21,786	13,098	34,884	2.7%	22,755	14,329	37,084	2.7%	-6%
2020	22,579	13,282	35,861	2.8%	23,590	14,532	38,122	2.8%	-6%
2021	22,806	13,408	36,214	1.0%	23,866	14,701	38,567	1.2%	-6%
2022	23,036	13,536	36,572	1.0%	24,148	14,872	39,020	1.2%	-7%
2023	23,270	13,666	36,936	1.0%	24,434	15,047	39,481	1.2%	-7%
Total Growth 2006-2023				56.4%	67.2%				
2024	23,506	13,797	37,303	1.0%	25,036	15,389	40,425	2.4%	-8%
2025	23,746	13,930	37,676	1.0%	25,436	15,623	41,059	1.6%	-9%
2026	23,989	14,064	38,053	1.0%	25,829	15,855	41,684	1.5%	-10%
2027	24,236	14,199	38,435	1.0%	26,231	16,091	42,322	1.5%	-10%
2028	24,486	14,337	38,823	1.0%	26,641	16,332	42,973	1.5%	-11%
2029	24,739	14,476	39,215	1.0%	27,061	16,578	43,639	1.5%	-11%
2030	24,996	14,616	39,612	1.0%	27,490	16,829	44,319	1.6%	-12%
Total Growth 2006-2030				67.7%	87.6%				
* Does not include POE Vashon Service nor San Juans Interisland ridership									

Section Four Model Differences

The models generate substantially different ridership projections because of the inputs used, how frequently they are updated, and their use of peak period forecasts. WSF has not attempted to reconcile the differences in the models. As noted in WSF's Draft Long-Range Strategic Plan: "Ridership projections are adjusted to match the econometric model's annual totals through 2008. Projections for the year 2017 and beyond rely only on the regional transportation model and a smooth curve is assumed during the transition period between 2008 and 2017" (p. 13).

A. Model Updates

The two models provide different results in part because they are updated on different cycles. The econometric model is updated quarterly based on OFM's quarterly updates of population and employment. The travel demand model is dependent on the PSRC updates, which are completed less frequently. "In contrast, the statewide projections for population and employment prepared by OFM are quarterly time series — four data points for each year from the present through 2030. The population series is for the adult population age 18 and over. The employment series includes all non-agricultural employment, with quarterly seasonality removed. The population projection is updated annually; all other forecast variables including employment are revised each quarter. As a result, the WSF revenue and ridership forecasts will get revised over time as they react to changing forecasts for the input variables — an expected and desired result" (Parsons Brinckerhoff response to consultant questions, Oct. 24, 2006).

B. Auto Operating Costs

One of the difference between the two models is in how they deal with the cost of operating an automobile. Auto operating costs are a primary driver of vehicle ridership on the ferries. Ridership is reduced as the costs of operating an automobile increase. In the PSRC travel demand model, auto operating costs are assumed to remain constant with inflation. "A primary difference is that constant real auto operating costs within the PSRC travel demand model is an assumption — there is no forecast for auto operating costs in one sense because the model bases costs in constant year dollars, and no real growth in this cost has been assumed. In contrast, real gasoline prices — as well as a measure of marginal vehicle operating costs per mile that take into account the projection for vehicle fleet fuel efficiency — are forecast inputs as time series variables with quarterly resolution [in the econometric model]. In other words, changes in the projections for real fuel costs are assumed to affect travel decisions with respect to ferry use" (Parsons Brinckerhoff response to consultant questions, Oct. 24, 2006).

C. Peak Period

Unlike the econometric model, the travel demand model is based on the four-hour PM peak period, which is then extrapolated to the rest of the day, week, and year. "To develop revenue projections WSF extrapolates commute-period ridership to the rest of

the day, week and year. To annualize the models' commute-period projections, WSF uses historic ridership data on the relationships between peak-period ridership and ridership totals for other periods (daily & annual) supplemented by an econometric model that provides reliable projections of annual ridership in the short-term. Ridership projects are adjusted to match the econometric model's annual totals through 2008. Projections for the year 2017 and beyond rely only on the regional transportation models and a smooth curve is assumed during the transition period between 2008 and 2017" (Draft Long-Range Strategic Plan, p. 13).

If the relationship between the peak and non-peak periods changes as a result of tariff increases or service modifications from the historic pattern, it will affect the extrapolation to an annual ridership. The 2003 South Sound Travel Survey indicates that some of this may be happening, noting particularly the increased ridership in the PM peak on the Point Defiance-Tahlequah route between 1999 and 2003, which "may be the result of service reductions since 1999, which could be concentrating more ridership within the PM peak period" (2003 South Sound Travel Survey Analysis and Results Report, p. 17).

Section Five

PSRC Travel Demand Model: Cross-Sound Demand

A key input to WSF's travel demand ridership projection is the estimate of cross-Sound growth forecast by the PSRC model. WSF used model Version e05 of the PSRC travel demand model, which is currently being updated, for development of the Draft Long-Range Strategic Plan 2006-2030.

The consultant's review of the methodology used to estimate cross-Sound growth, which is based on interviews with PSRC and WSF staff and consultants, indicates that Version e05 of the travel demand model may overstate cross-Sound demand. "A new Tacoma Narrows Bridge is being built. The bridge is an important transportation corridor in the South Sound and is a key factor in the forecast of future ferry ridership. The PSRC regional model . . . accounts for the relative attractiveness of ferry service and the new expanded bridge" (Draft Long-Range Strategic Plan, p.25). The bridge will have tolls collected one-way, with the toll currently estimated at \$3.00.

As explained in more detail in Appendix A, there is a significant discrepancy between the WSDOT estimate of vehicles that will use the Tacoma Narrows Bridge and the numbers included in the forecast in Version e05 of the PSRC model. The PSRC model assumes 66,000 vehicles will use the Tacoma Narrows Bridge daily in 2020, compared to an estimate of 120,000 vehicles a day made by WSDOT (www.wsdot.wa.gov).¹

Mirai Associates recalculated the cross-Sound ridership projection in the PSRC model using a more reasonable calculation of daily vehicle use of the Tacoma Narrows Bridge. The resulting estimate calculated 4.6 million fewer ferry trips across the Sound, resulting in a revised systemwide baseline ridership estimate in 2030 of 36.1 million—an 11 percent reduction in systemwide ridership projected in the travel demand model.

**Table 10. Tacoma Narrows Bridge Revised Use:
Impact on Systemwide Ridership**

PSRC Model- Daily Vehicles TNB	Mirai Estimate Daily Vehicles TNB*	Difference	AVO**	2030 Person Trips	% Non- Ferry	Daily Person Trips Transferred from Ferry to TNB	Reduction in Annual Cross-Sound Ferry Riders	Systemwide Ridership (000s)	%
85,765	132,555	46,790	1.2	56,148	75%	14,037	4,562,025	35,050	-11%
* Calculated from WSDOT estimate of 120,000 vehicles in 2020.									
** Average vehicle occupancy									

¹ WSF estimate is 95,000 vehicles per day in 2020. The web site was revised in Dec. 2006.

Appendix B shows the ridership by route as projected by the econometric model and the travel demand forecast for 2007, 2010, 2015 and 2020. The largest discrepancy in the projections is for the Seattle-Bremerton route which in 2020 in the econometric model has 53 percent fewer trips (2.5 million) than the travel demand model. The South Sound total is 52% (840,000 trips) lower in 2020 in the econometric model than in the travel demand model. Both of these routes are particularly affected by the Tacoma Narrows Bridge projections and together account for 48% of the difference in the ridership projections.

Section Six

Relationship to Historical Ridership Growth

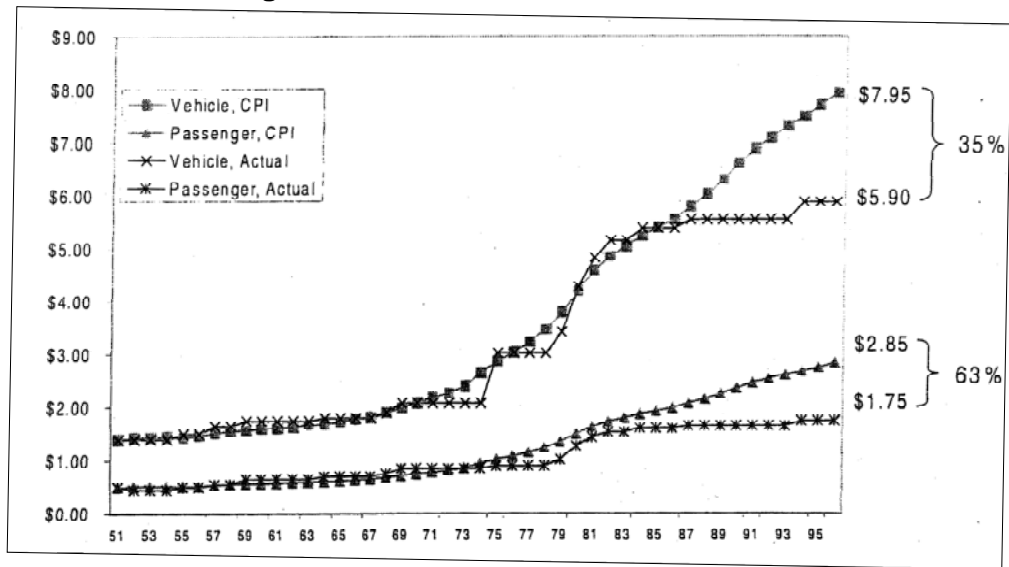
The Draft Long-Range Strategic Plan suggests that the relatively high growth rates anticipated in the baseline and the planned service projections are reasonable in part because they are consistent with previous growth rates.

History shows the influence of fares on ridership demand. Ridership increased substantially from 1985 to 2000 while inflation-adjusted fares declined to historically low levels. Since 2000 when fares were increased rapidly in response to I-695, systemwide ridership declined by about 10 percent. A regional recession in this time frame also contributed to the decline in ridership. As future inflation-adjusted fares stabilize, ridership is projected to bounce back. . . . While the . . . annual rate of growth expected in total trips is high (trips grow more than population at the same time period) it is certainly not unprecedented in WSF history. Average rate of growth from 1970-1979 was 6.4 percent, led primarily by significant vehicle growth—a period where fares were similar to those projected for the planning period. This suggests that the recent fare increases have only temporarily suppressed demand growth, and once fares stabilize, ridership will return to a pre-I-695 trajectory (Draft Long-Range Strategic Plan, p. 17).

This comparison with growth in previous time periods should be reviewed with caution because of the following factors:

1. The 1970-1980 decade cited above had the highest increase in two-worker household formation in U.S. history. During that time period an increase in households would create an increase of work trips at a significantly higher percentage rate than in the current decade, which has already absorbed women into the workforce.
2. Rates during this period actually lagged behind inflation, so that the real cost of ferry ridership declined during this period. The 1999 Long-Range System Plan included the following chart (Figure 3) comparing inflation and fare price increases.

Figure 3. Historic Rates vs. Inflation



Source: WSF 1999-2018 Long Range Systems Plan

3. The current plan for 2.5 percent annual rate increases assumed in both models is greater than the anticipated rate of inflation, resulting in an increase in real fares (see Figure 1, above).

Section Seven Recreational Uses

Neither model includes specific information about trends in recreational use of the ferries. The models rely on projections of population and employment. While to some extent patterns in recreational use may be inferred from calculations such as the effect of auto operating costs on ferry demand, and/or can be derived from the 1999 origin and destination study, which included the purpose of the trip, there are no specific indicators developed for tourist or other recreational use. This lack of information is most important in projecting demand for the Keystone-Port Townsend and Anacortes-San Juan Islands-Sidney routes, which have heavy recreational versus commuter use.

Section Eight

Customer Information/Origin and Destination Study

The 1998 performance audit by Booz Allen for the Joint Legislative Audit and Review Committee, while finding the travel demand model to be “robust and comprehensive” (p. 8-20), recommended that the origin and destination study be updated every five years. The 1999 Origin and Destination Study was less than five years old when work on the Draft Long-Range Strategic Plan started in 2003, which is the base year for the plan. Consequently it was not updated prior to the development of the 2006-2030 plan. In 2003 a more limited origin and destination study was undertaken in the South Sound to support analysis of passenger only ferry service.

WSF’s service and tariff structure has changed substantially since 1999. A comprehensive review of the impact of those changes on customer origin and destination patterns will not be available until the survey is updated. This is anticipated to occur in 2006.

Additionally, there is little information available on the characteristics of the vehicle market. The need for expanded capacity to support vehicular use of the ferries is driving the capital plan. There are no surveys or other market information available on vehicular drivers’ likely response to operational or tariff changes.

Section Nine Recommendations

The projection of ridership is critical to WSF's financial, operational, and capital planning. The consultant's recommendations are intended to meet the study objectives of reviewing the accuracy of ridership and revenue forecast and developing performance measures.

A. Reconcile Econometric and Travel Demand Model Projections

The consultants recognize that the two models provide different and important information for WSF planning. It is recommended that the two models be reconciled so consistent projections are used for short and long-term planning.

The consultants have found that the econometric model is quite accurate and is updated frequently. The model is critical to the ability of WSF and the state to forecast revenue and ridership, and helps support tariff decisions. The travel demand model provides important information that is not available from the econometric model on rider origin and destination, peak and non-peak patterns, and actual vehicle wait times. This is information critical to understanding the ferry market and allows ferry planning to integrate with work done by the PSRC and MPOs.

B. Use of Model Information

The consultants found that WSF is using the travel demand forecast for capital planning and terminal design. Until the reconciliation of ridership forecasts can occur and/or the legislature has approved a revised forecast, it is recommended that the legislature use the econometric demand model forecast as the basis for its review of capital requests. This is particularly important for decisions in the Central and South Sound travel sheds where ridership forecast in the travel demand model is substantially higher than that forecast in the econometric model.

C. Develop Additional Ferry Market Information

1. Recreation Use

The travel demand model provides little information on recreation users since it relies primarily on forecasts of population and income. The consultants recommend a market study of current and forecast recreational use of the ferry system with a particular focus on the Keystone-Port Townsend and Anacortes-San Juans-Sidney routes.

2. Vehicle Use

A new origin and destination survey will be undertaken in 2006. This will provide more current information on ferry users. The consultants recommend a supplementary market study of vehicle customers to help inform planning, operations, and tariff policies affecting this key market, which is driving capital planning. The study should be

designed to provide information on the reaction of this market to traffic demand strategies and tariff alternatives.

D. Performance Measures

WSF regularly reports on actual ridership and revenue against the quarterly forecasts from the econometric model in the WSDOT Gray Notebook and other performance reports. WSF has not historically reported ridership in comparison to the forecast in the travel demand model. The consultants recommend that WSF add a key performance measure focused on tracking actual versus forecasted ridership from the travel demand model.

Table 11 on the following pages summarizes the two WSF demand forecasting models and the consultants' recommendations.

Table 11. Comparison Matrix for the Two WSF Demand Forecasting Processes

Attribute	Econometric Demand Model & Revenue Forecasting Process	Network-Based Travel Demand Forecasting Process
Purpose	<ul style="list-style-type: none"> • To provide mid-range revenue and ridership projections monthly or annually for WSF budgeting and state financial planning purposes. • To assess revenue and ridership impacts of fare increases and various tariff policies. • To assess revenue and ridership impacts or conduct “what-if analyses” for minor service changes. • To estimate revenue impacts from major service changes where the demand impacts come from the network-based travel demand model forecasting process. 	<ul style="list-style-type: none"> • To forecast how many people and vehicles will use WSF facilities on a daily basis (with emphasis on weekday peak travel periods) under a specified set of circumstances (e.g., with a given set of service specifications, land use assumptions, etc.). Forecasting period is from the present through long-range future, with current forecasts going out to 30 years. • To test the likely ferry travel demand and mode choice impacts of alternative ferry routes; service attributes (frequency, travel time, costs, capacity); and supporting highway and transit service characteristics. • To provide network-based demand estimates to support environmental work regarding WSF service and/or facility expansions, as required under NEPA.
Uses/Forum for Use	<ul style="list-style-type: none"> • WSF budgeting and short-range service planning. • Provides revenue estimates for the Transportation Revenue Forecast Council for statewide budgeting. • Tests fare policy scenarios for use by the Washington State Transportation Commission Tariff Policy Committee. 	<ul style="list-style-type: none"> • WSF long-range system, corridor, and route planning. • Identifies future service and capital needs. • Provides long-range travel demand forecasts in context of metropolitan transportation planning in cooperation with PSRC and outlying MPOs. • Provides pertinent data to other projects, e.g., Alaskan Way Viaduct, terminal design efforts, etc.
Brief Description of Methods	<ul style="list-style-type: none"> • Employs both ARIMA and econometric time-series techniques to estimate monthly system and route-specific travel demand by six fare categories plus two fare surcharge categories. • Considers the impacts of economic and demographic variables that drive travel behavior. • Estimates fare elasticities based upon historical impacts to changes in real fares. • Employs EViews statistical package for demand forecasting and spreadsheet models to apply fares and vessel capacity constraints for revenue forecasts. 	<ul style="list-style-type: none"> • Employs an incremental modeling process that is closely tied in with the PSRC regional forecasting model as well as with pertinent databases from outlying jurisdictions. • Estimates weekday PM peak travel demands by route, boarding method, mode of access/egress and travel direction for a given scenario and horizon year under a single blended fare structure. • Considers the impacts of individual traveler behavior (destination, route substitution, travel modes and boarding methods), and changes to population and employment by small area geography. • Employs the EMME/2 modeling software.

Attribute	Econometric Demand Model & Revenue Forecasting Process	Network-Based Travel Demand Forecasting Process
Input Requirements	<ul style="list-style-type: none"> • Detailed existing ridership history by route, mode, and fare category. • Detailed existing and proposed nominal fare structures by route and category. • Historical fare revenue by month and route. • History and projections for regional and national economic and demographic variables (e.g., real personal income, population, employment, inflation and vehicle travel costs.) • Demand and growth rates for any proposed new routes (from the network-based travel demand forecasting process). 	<ul style="list-style-type: none"> • Existing and forecast year land use, population and employment level, and parking costs by transportation analysis zone (TAZ) developed regionally and consistent with databases used by local jurisdictions. • Trip tables (origin-destination travel patterns) derived from periodic travel survey data. • Base year ridership history for calibration purposes. • Route level of service and physical operating characteristics including vessel specifications. • Average real fares by route (can calculate blended fares from real fares out of the econometric demand model & revenue forecasting process, if desired). • Background information including highway and transit networks, generalized costs of travel, and other inputs "borrowed" from the PSRC Regional Model and outlying jurisdictions.
Main Outputs	<ul style="list-style-type: none"> • Sixteen-year projections for revenue and ridership by month, route, and fare category. • Fare elasticities of demand by fare category. 	<ul style="list-style-type: none"> • Weekday PM peak ridership in origin-destination form by route, boarding mode, and mode of access/egress for a selected forecast year and scenario; expandable to week, daily or annual volumes, with results for intermediate years via interpolation. • Ferry share of adjacent mode (transit/highway) demand.
Strengths	<ul style="list-style-type: none"> • Provides detailed quarterly route-by-route traffic and revenue estimates that can be used for operations budgeting. • As part of a performance audit, was shown to be quite accurate (particularly when service changes are limited to existing routes such that the route structure remains relatively static.) • Provides information on seasonal and annual trends and yields results at a monthly detail level. • Responds to quarterly changes in the projections for state-level economic and demographic input variables as well as existing ridership and revenue trends. • Can be updated with relative ease to meet quarterly forecast requirements. 	<ul style="list-style-type: none"> • Accepted standard industry practice for long-range (10-, 20- and 30-year) forecasts and demand projections to support alternatives analysis and project-level environmental planning; conforms to both NEPA/SEPA and MTP Planning requirements. • Provides typical PM peak period (expandable to daily) travel volumes for weekday travel in a format that is consistent with other regional planning efforts. • WSF model received high marks from performance audit; model updates have been implemented under direction of panel of experts. • Captures land side diversion (e.g., TNB), changes in mode shift, mode of access/egress, as well as impacts of new routes/terminals, travel patterns of each route's users.

Attribute	Econometric Demand Model & Revenue Forecasting Process	Network-Based Travel Demand Forecasting Process
		<ul style="list-style-type: none"> Identifies future peak period ferry travel volumes by mode of access/egress to develop ferry terminal design requirements. Captures anticipated effects of future land use and other localized conditions on ferry travel behavior; links land use and transportation analyses consistent with GMA. Appropriate model for comparing alternative system plans against one another as well as alternatives at the corridor level.
Shortcomings	<ul style="list-style-type: none"> Does not specifically capture relative geographic (e.g., TAZ-specific) changes in land use over time, nor major changes in the ferry system routes or levels of service. Does not provide information about weekday versus weekend travel patterns, nor intra-day and directional travel patterns. Provides only very limited travel mode information, and no mode of access/egress information about walk-on boardings. 	<ul style="list-style-type: none"> Does not capture monthly or seasonal variation in travel and relies on external expansion factors to predict annual demand.
Consultant Observations and Recommendations	<ul style="list-style-type: none"> Very accurate. Includes auto operating costs/frequently updated. Used for performance measurement. Recommend using for legislature's capital decisions until models are reconciled 	<ul style="list-style-type: none"> Accuracy not tracked, but has changed substantially since last developed in 1999. Infrequently updated. Extrapolates from peak to non-peak which may have changed with fare increases and service reductions. Overstates ridership by understating vehicle use of Tacoma Narrows Bridge. Add performance measurement.
Both Models/Consultants Observations & Recommendations	<ul style="list-style-type: none"> Neither model provides information on recreational customers. Recommend study to gather more information on recreational customers, particularly for the Keystone-Port Townsend and San Juan routes. Recommend additional marketing study on vehicle customers with analysis of traffic demand and operational strategies. 	

Source: WSF Planning/Consultants

APPENDIX A TACOMA NARROWS BRIDGE TECHNICAL MEMORANDUM

MEMORANDUM

To: Kathy Scanlan
From: Bob Sicko, Mirai Transportation Planning and Engineering
Subject: Estimate of 2030 Cross Sound Ridership
Date: October 25, 2006

This memo summarizes the issues discussed with staff from WSF, the House Transportation Committee, the Senate Transportation Committee, PSRC and the Cedar River Group and reviews the methodology used to estimate future cross sound travel using the PSRC E_05 travel demand modeling suite. In question, are the inputs and assumptions used to develop a reasonable estimate of cross sound growth from 2004 to 2030.

I have reviewed the PSRC model outputs and developed ridership estimates that, while very generic, estimate growth rates that address the methodological issues inherent in the model and the resulting demand estimation. In this memo I will show how the growth rate may change when the estimates for the cross sound growth for ferry traffic and vehicular demand across the Tacoma Narrow Bridges take into account these issues that have been raised.

A review of the methodology used by the WSF consultants combined with input and clarification from PSRC staff identified two distinct issues. The first issue deals with the development of the PSRC model and its usability; the second focuses on the procedures used to estimate cross sound demand.

Travel Demand Models Used

The PSRC model was continually updated throughout 2005. While there had been problems with the earlier versions of the PSRC model, it was deemed functional enough to use for project analysis. This meant that the analyst using the model would need to very carefully review the outputs for any illogical results. The model was updated throughout 2005 as follows.

- Two versions of the PSRC multimodal transportation demand model were used in the development of the Long Range Plan. The output from the models was used as input to the WSF model.
 - a. The PSRC B_05 (4/15/5) model had several inconsistencies in the modeling structure and issues with the representation of network and

transit attributes. A Technical Modeling Group was formed to support improvements to the model.

- b. The PSRC E_05 (6/1/5) model incorporated suggested enhancements, but core issues with the modeling structure continued to provide illogical results. A national expert panel was formed to provide further guidance. The modeling structure was extensively modified and re-released in late 2005.
- The current WSF Model requires inputs similar to those used in running the PSRC model. A key input to the WSF model is the estimate of cross sound growth forecast by the PSRC model. The WSF model is a mature model and has a solid foundation to develop reasonable estimates of demand.

Cross Sound Demand

The process, used to estimate cross sound demand, examined the growth in cross sound person trips in the four county region and subtracted the trips using the Tacoma Narrows Bridge (TNB). While this is a straight forward and completely logical approach, when comparing the model output with previous estimates of future vehicular demand on the TNB, inconsistencies are found.

To be consistent with the State's planning paradigm, other sources of data should be used as comparison to check the logic of the results. For instance, the WSDOT web page states that by the year 2020, almost 120,000 vehicles a day will cross the TNB. This estimate of demand is what drives the revised estimate of cross sound demand based on the PSRC E_05 model output.

Table 1 presents the estimates of daily vehicular demand found in the E_05 model runs. Data used by PSRC for model validation shows the estimated daily vehicular demand in 2000 is 94,000. As seen in Table 1, the model estimate for 2000 is 82,835. The PSRC model underestimates the 2000 TNB demand by 13.5 percent.

Table 1. Estimates of Daily Vehicular Modeled Demand across the TNB

Year	Vehicles
2000	82,835
2010	62,000
2020	66,000
2030	85,765

Table 2 shows the growth assumed between 2000 and 2020, the absolute growth rate, the annualized growth rate and a estimate of 2030 vehicular demand. The TNB vehicular demand is estimated to grow by 27.6 percent for an annualized growth rate of 1.23 percent a year. A conservative estimate for growth from 2020 to 2030, annualized growth rate of 1.1 percent is used to created a 2030 vehicle demand

estimate. Using the 1.1 percent annualized growth rate, a demand of 132,500 vehicles was assumed for the TNB in 2030.

Table 2. Assumed Tacoma Narrows Bridge Growth

2000 Observed Volume	2020 TNB Volume	Percent Growth	Annualized Growth Rate	Assumed Annualized rate 2020 to 2030)	Estimated 2030 Vehicular Demand
94,000	120,000	27.6	1.23	1.10	132,555

Table 3 shows that there is a difference of 46,790 daily vehicles between the model and the estimate derived in Table 2 for 2030. Using an average vehicle occupancy of 1.2 (derived from PSRC model output), the 2030 estimate of daily person trips is 56,148 less than required.

Table 3. Estimate of Deficient Person Trips

2030 PSRC Model (vehicle)	2030 WSDOT Based (vehicles)	Difference (vehicles)	Average Vehicle Occupancy	2030 Person trips
85,765	132,555	46,790	1.2	56,148

Table 4 provides a summary of the analysis used to develop the annual cross sound ridership estimate. A significant portion of the “missing” person trips would be trips that would in all likelihood not use the ferry system. The analysis of the commute shed for the TNB shows that this would be approximately 75 percent of the daily person trips. Therefore 25 percent of the 56,148 person trips (approximately 14,000 person trips) would be drawn from the cross sound commute shed. In converting the daily person trip estimate to an annual estimate an annualization factor of 325 is used to account for seasonality variations in demand. It is estimated that about 4.5 million riders would be shifted from the cross sound shed to the Tacoma Narrows Bridge.

Table 4. Reduction in Cross Sound Trips

Person Trip Deficit	Percentage Non Ferry Trips	Person Trips Transferred from Cross Sound	Annualization Factor	Reduction in annual Cross Sound Riders
56,148	75%	14,037	325	4,562,025


The revised estimate of systemwide ridership would be 35.05 million, an 11 percent reduction in demand. The revised estimate of annualized growth, between 2003 and 2030, would be 1.4 percent versus the 1.9 percent shown in the Long Range Plan.

APPENDIX B

ROUTE PROJECTIONS

Route	Econometric Model (9/06 Forecast)			Travel Demand Model			Difference (Econometric vs. Travel Demand)					
	2007											
	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Passenger	%	Vehicle	%	Total	%
PT. DEFIANCE—TAHLEQUAH	299,233	391,017	690,250	315,128	430,081	745,210	(15,896)	-5%	(39,064)	-10%	(54,960)	-8%
SOUTH PUGET SOUND												
VASHON—SOUTHWORTH	87,841	125,407	213,248	84,227	128,003	212,230	3,614	4%	(2,597)	-2%	1,018	0%
FAUNTLEROY—VASHON	952,432	1,128,809	2,081,241	829,972	1,127,231	1,957,203	122,460	13%	1,578	0%	124,037	6%
FAUNTLEROY—SOUTHWORTH	448,832	552,756	1,001,588	354,643	508,481	863,124	94,189	21%	44,275	8%	138,464	14%
SOUTH PUGET SOUND TOTAL	1,489,105	1,806,972	3,296,076	1,268,842	1,763,716	3,032,556	220,263	15%	43,256	2%	263,519	8%
CENTRAL PUGET SOUND												
SEATTLE—BREMERTON	1,677,026	693,243	2,370,269	2,008,417	671,561	2,679,979	(331,392)	-20%	21,682	3%	(309,710)	-13%
SEATTLE—BAINBRIDGE ISLAND	4,558,353	2,057,197	6,615,550	4,597,257	2,353,069	6,950,326	(38,904)	-1%	(295,872)	-14%	(334,776)	-5%
EDMONDS—KINGSTON	2,046,049	2,262,996	4,309,045	1,823,689	2,140,285	3,963,974	222,360	11%	122,711	5%	345,071	8%
CENTRAL PUGET SOUND TOTAL	8,281,428	5,013,436	13,294,863	8,429,364	5,164,915	13,594,279	(147,936)	-2%	(151,479)	-3%	(299,415)	-2%
MUKILTEO—CLINTON	1,903,872	2,169,473	4,073,346	1,812,661	2,205,559	4,018,220	91,212	5%	(36,085)	-2%	55,126	1%
PORT TOWNSEND—KEYSTONE	403,640	361,761	765,401	419,920	372,336	792,256	(16,280)	-4%	(10,575)	-3%	(26,855)	-4%
ANACORTES—SAN JUAN ISLAND	918,138	852,907	1,771,045	941,009	769,133	1,710,142	(22,871)	-2%	83,774	10%	60,903	3%
ANACORTES/ISLAND—SIDNEY	84,949	41,358	126,308	65,930	34,536	100,466	19,019	22%	6,822	16%	25,842	20%
System Totals	13,380,365	10,636,924	24,017,289	13,252,854	10,740,275	23,993,129	127,511	1%	(103,351)	-1%	24,160	0%
Route	2010											
	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Passenger	%	Vehicle	%	Total	%
PT. DEFIANCE—TAHLEQUAH	332,603	430,769	763,372	318,286	435,513	753,799	14,316	4%	(4,744)	-1%	9,573	1%
SOUTH PUGET SOUND												
VASHON—SOUTHWORTH	91,708	137,076	228,784	87,526	135,067	222,593	4,183	5%	2,009	1%	6,191	3%
FAUNTLEROY—VASHON	994,363	1,233,845	2,228,208	850,711	1,182,101	2,032,812	143,652	14%	51,745	4%	195,396	9%
FAUNTLEROY—SOUTHWORTH	459,723	627,362	1,087,085	382,162	582,408	964,570	77,561	17%	44,955	7%	122,515	11%
SOUTH PUGET SOUND TOTAL	1,545,794	1,998,283	3,544,077	1,320,399	1,899,576	3,219,974	225,395	15%	98,708	5%	324,103	9%
CENTRAL PUGET SOUND												
SEATTLE—BREMERTON	1,807,974	731,383	2,539,356	2,161,367	771,040	2,932,407	(353,393)	-20%	(39,657)	-5%	(393,051)	-15%
SEATTLE—BAINBRIDGE ISLAND	4,961,401	2,186,996	7,148,397	4,634,420	2,370,977	7,005,397	326,981	7%	(183,981)	-8%	143,000	2%
EDMONDS—KINGSTON	2,179,554	2,566,612	4,746,166	1,926,041	2,302,357	4,228,399	253,513	12%	264,254	10%	517,767	11%
CENTRAL PUGET SOUND TOTAL	8,948,929	5,484,990	14,433,919	8,721,829	5,444,374	14,166,203	227,101	3%	40,615	1%	267,716	2%
MUKILTEO—CLINTON	2,034,511	2,359,289	4,393,801	1,864,431	2,293,054	4,157,485	170,080	8%	66,236	3%	236,316	5%
PORT TOWNSEND—KEYSTONE	429,701	385,229	814,929	431,167	385,281	816,448	(1,466)	0%	(53)	0%	(1,519)	0%
ANACORTES—SAN JUAN ISLAND TOTALS	989,653	957,651	1,947,304	980,013	813,514	1,793,527	9,640	1%	144,137	15%	153,777	8%
ANACORTES/ISLAND—SIDNEY	85,143	40,704	125,847	71,255	37,987	109,242	13,888	16%	2,717	7%	16,605	13%
System Totals	14,366,334	11,656,915	26,023,249	13,707,379	11,309,299	25,016,678	658,954	5%	347,617	3%	1,006,571	4%

Route	Econometric Model (Sept. 06 Forecast)			Travel Demand Model			Difference (Econometric vs. Travel Demand)					
	2015											
	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Passenger	%	Vehicle	%	Total	%
PT. DEFIANCE—TAHLEQUAH	346,692	489,694	836,387	354,020	444,514	798,535	(7,328)	-2%	45,180	9%	37,852	5%
SOUTH PUGET SOUND												
VASHON—SOUTHWORTH	92,247	148,095	240,341	126,628	147,104	273,732	(34,381)	-37%	991	1%	(33,390)	-14%
FAUNTLEROY—VASHON	1,000,201	1,333,031	2,333,231	1,010,957	1,275,618	2,286,575	(10,756)	-1%	57,413	4%	46,657	2%
FAUNTLEROY—SOUTHWORTH	485,626	651,568	1,137,194	741,977	718,928	1,460,905	(256,351)	-53%	(67,361)	-10%	(323,711)	-28%
SOUTH PUGET SOUND TOTAL	1,578,074	2,132,693	3,710,767	1,879,561	2,141,650	4,021,212	(301,488)	-19%	(8,957)	0%	(310,445)	-8%
CENTRAL PUGET SOUND												
SEATTLE—BREMERTON	1,823,606	768,978	2,592,584	3,281,149	954,396	4,235,545	(1,457,543)	-80%	(185,419)	-24%	(1,642,961)	-63%
SEATTLE—BAINBRIDGE ISLAND	5,238,819	2,323,308	7,562,127	5,972,868	2,421,259	8,394,127	(734,049)	-14%	(97,952)	-4%	(832,000)	-11%
EDMONDS—KINGSTON	2,380,828	2,835,731	5,216,559	2,815,507	2,586,268	5,401,776	(434,679)	-18%	249,462	9%	(185,217)	-4%
CENTRAL PUGET SOUND TOTAL	9,443,254	5,928,016	15,371,270	12,069,524	5,961,924	18,031,448	(2,626,270)	-28%	(33,908)	-1%	(2,660,178)	-17%
MUKILTEO—CLINTON	2,114,877	2,475,827	4,590,704	2,295,434	2,439,797	4,735,230	(180,557)	-9%	36,030	1%	(144,527)	-3%
PORT TOWNSEND—KEYSTONE	452,656	414,805	867,461	430,116	406,933	837,049	22,540	5%	7,872	2%	30,411	4%
ANACORTES—SAN JUAN ISLAND TOTALS	1,042,131	1,020,792	2,062,922	1,176,559	889,174	2,065,732	(134,428)	-13%	131,618	13%	(2,810)	0%
ANACORTES/ISLAND—SIDNEY TOTALS	86,024	39,902	125,926	89,608	44,092	133,700	(3,584)	-4%	(4,190)	-11%	(7,773)	-6%
System Totals	15,063,707	12,501,729	27,565,436	18,294,822	12,328,083	30,622,905	(3,231,115)	-21%	173,645	1%	(3,057,469)	-11%
Route	2020											
	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Forecasted Passenger Ridership	Forecasted Vehicle Ridership	Forecasted Fiscal Year Ridership	Passenger	%	Vehicle	%	Total	%
PT. DEFIANCE—TAHLEQUAH	361,349	553,408	914,757	385,068	452,075	837,143	(23,720)	-7%	101,333	18%	77,614	8%
SOUTH PUGET SOUND												
VASHON—SOUTHWORTH	93,111	158,049	251,160	167,755	157,636	325,391	(74,644)	-80%	412	0%	(74,231)	-30%
FAUNTLEROY—VASHON	1,009,572	1,422,628	2,432,199	1,133,960	1,357,506	2,491,466	(124,388)	-12%	65,121	5%	(59,266)	-2%
FAUNTLEROY—SOUTHWORTH	515,348	651,568	1,166,915	1,157,090	852,972	2,010,063	(641,742)	-125%	(201,405)	-31%	(843,147)	-72%
SOUTH PUGET SOUND TOTAL	1,618,031	2,232,244	3,850,275	2,458,805	2,368,115	4,826,919	(840,774)	-52%	(135,871)	-6%	(976,645)	-25%
CENTRAL PUGET SOUND												
SEATTLE—BREMERTON	1,822,688	807,770	2,630,457	4,287,891	1,133,808	5,421,699	(2,465,203)	-135%	(326,038)	-40%	(2,791,241)	-106%
SEATTLE—BAINBRIDGE ISLAND	5,498,641	2,427,746	7,926,387	7,145,229	2,486,988	9,632,217	(1,646,588)	-30%	(59,242)	-2%	(1,705,830)	-22%
EDMONDS—KINGSTON	2,603,390	2,880,245	5,483,635	3,749,362	2,844,912	6,594,274	(1,145,973)	-44%	35,333	1%	(1,110,639)	-20%
CENTRAL PUGET SOUND TOTAL	9,924,718	6,115,761	16,040,479	15,182,482	6,465,708	21,648,190	(5,257,764)	-53%	(349,947)	-6%	(5,607,711)	-35%
MUKILTEO—CLINTON	2,206,725	2,505,864	4,712,589	2,654,535	2,565,254	5,219,789	(447,810)	-20%	(59,390)	-2%	(507,200)	-11%
PORT TOWNSEND—KEYSTONE	473,723	435,872	909,595	513,086	425,372	938,458	(39,363)	-8%	10,500	2%	(28,863)	-3%
ANACORTES—SAN JUAN ISLAND TOTALS	1,090,951	1,032,382	2,123,333	1,333,451	955,408	2,288,859	(242,499)	-22%	76,974	7%	(165,526)	-8%
ANACORTES/ISLAND—SIDNEY TOTALS	86,797	38,965	125,762	52,821	24,864	77,685	33,976	39%		0%		0%
System Totals	15,762,294	12,914,496	28,676,790	22,580,248	13,256,795	35,837,043	(6,817,953)	-43%	(356,401)	-3%	(7,208,331)	-25%

	Washington State Ferries Financing Study
	Technical Appendix 5: Operating Budget Review
	
	Prepared For:
	Joint Transportation Committee Washington State Legislature
	Consultant Team:
	Cedar River Group, LLC Mirai Associates Norway Hill Development RL Collier Company
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Executive Summary

This review of Washington State Ferries' (WSF) operating budget is part of the Washington State Ferries Financing Study. This review was conducted primarily by staff from the Senate Transportation Committee and the House Transportation Committee. The consultants were asked to incorporate the legislative staffs' work into the ferry financing study, and have included additional analysis and consultant recommendations.

Operating Resources

The review of operating resources available to support WSF operations is based on the 2006 legislative plan amended by June 2006 projections of motor vehicle fuel tax and income from licenses, permits, and fees.

Revenues

Earned revenue: The ferry system is supported primarily through farebox revenues. WSF also earns revenue from leases and concessions. In the 2005-07 biennium, earned income provides 77 percent of revenue.

Tax revenues: The Puget Sound Ferry Operations Account receives dedicated tax support from the motor vehicle fuel tax; motor vehicle registration fees; combined licensing fees; and 80 percent of treasury deposit earnings. In 2006 the legislature decided that the fuel taxes and fees collected from the additional gas taxes levied in 2003 and 2005 in San Juan and Island counties would be made available for WSF operations through the 2019-21 biennium rather than being returned to the counties under the Capron laws.

From 1993 through 2005, WSF received additional tax support from direct appropriations and transfers primarily from the Multimodal Transportation Account and the Motor Vehicle Account. However, no tax support beyond the dedicated taxes is anticipated in future years.

Transfers to Capital

The legislative plan anticipates transfers from the Puget Sound Ferry Operations Account to the Puget Sound Capital Construction Account, which supports the WSF capital program. By the 2019-21 biennium, 10 percent of earned revenue is anticipated to be transferred to the capital account, along with 100 percent of the dedicated operations tax support.

Operating Expenses

WSF operating expenses are 97 percent of the expenses supported by the Puget Sound Ferry Operating Account. The account also funds the Marine Employees Commission (MEC); and expenses incurred by the Washington State Department of Transportation (WSDOT) on behalf of WSF. WSF operations are also supported by various expenses

incurred by WSDOT and the Washington State Patrol that are not charged to the Puget Sound Ferry Operations Account.

Farebox Revenue

Fares are the most important source of revenue for WSF. Fares fund 75 percent of WSF's operating expenses in the 2005-07 biennium, and are projected to fully fund operating expenses by 2013-15, with additional funds transferred to the capital account. As a result of projected ridership growth and tariff increases, farebox revenue is projected to grow at between 6 percent and 11 percent per biennium through the 2019-21 biennium.

Sources

The most significant source of farebox revenue is vehicle tariffs, accounting for 75 percent of all farebox revenues. Vehicle tariffs include the vehicle and driver, plus "other" vehicles, such as motorcycles and trucks. Passengers account for 24 percent of farebox revenues. Miscellaneous revenues makeup the remaining 1 percent of farebox revenue.

Tariffs

Increases: Tariffs increased 62 percent between 2001 and 2006 in response to the loss of the motor vehicle excise tax (MVET) funding in 2000. Tariffs are projected in the legislative financial plan to increase 2.5 percent per year from 2007 to 2021.

Structure: WSF has a complex tariff structure with more than 2,500 ticket types, including 810 possible fares for the Anacortes/San Juan Islands and Sidney B.C. routes. Passenger fares include three basic categories (full fare, youth, and senior/disabled), with discount books or passes available for frequent users. On the San Juan routes there are also peak fares and weekend premiums. Vehicle fares are more complex. They include: vehicle and driver fares for cars under 20 feet; regular fares, senior or disabled fares at approximately 85 percent of the full fare rate; height surcharges and length fees. All routes have peak season vehicle rates and the San Juan routes also have weekend rates.

Tariff policies: Ferry tariffs are set by the Washington State Transportation Commission (WSTC). State law outlines factors the WSTC may consider in reviewing tariffs. State law also requires WSF to solicit advice from Ferry Advisory Committees in considering tariff changes. The WSTC has created a 20-member Tariff Policy Committee (TPC) to assist it in meeting the statutory obligation to consult with affected ferry users.

The TPC's review in 2005-06 of fare increases and transportation demand management strategies included discussion of the following issues.

- *Fare increase and fuel surcharge:* The TPC recommended and the WSTC adopted a 6 percent general fare increase effective May 2006, but did not recommend a fuel surcharge, because they felt the state should cover the increased fuel cost.

- *Traffic demand management:* The TPC examined traffic demand management, including the passenger/vehicle fare relationship, congestion (time-of-day) pricing, and value pricing, but did not make changes in this tariff cycle.
- *Tariff route equity:* This program is based on the relationship of fares among routes. All riders are expected to contribute equally to the fixed costs of the ferry system, and each rider to contribute proportionally for the space used and the time occupying space on the vessel. Rates are established for the central Sound routes and then distributed based on tariff route equity variables to the other routes.

Electronic Fare System

WSF is implementing an electronic fare system that will be integrated with the regional fare collection program (SmartCard) among seven transit providers. The system will improve cash control and customer service. The TPC has adopted tariff changes to integrate with the electronic fare system. To date, the electronic fare system is in use at the Port Townsend and Keystone terminals and on Anacortes-based routes.

Concessions and Other Revenue

Income from concessions and other leases was 1 percent of revenue available for ferry operations from FY 1993 to FY 2005. In the 2005-07 biennium, this income will be 2 percent of revenue, and is anticipated to grow to 3 percent by the 2019-21 biennium.

From 1995 to 2005, on-board concessions were the largest source of concession revenues. For 2006 through 2015, WSF projects growth in revenue from: on-board food, beverage, and retail sales; wireless communication; and terminal food, beverage, retail, vending, advertising, and parking revenues. WSF is projecting a higher reliance on terminal based revenues, particularly from parking, vending, and concessions.

WSF Expenses: Overview

Labor and fuel costs have historically been 78 percent of WSF operating expenses, and are projected to be 83 percent in future biennia. Labor is the largest expense at 60 percent historically, and projected at 62 percent for future biennia.

The 2006 legislative financial plan assumes a 0.8 percent to 2.2 percent annual increase in WSF expenses to 2021. From the 1993-05 to 2005-07 biennium, the actual average cost increase was 9.4 percent.

WSF Labor Costs

Labor constitutes approximately 60 percent of WSF's operating costs. Labor costs are driven primarily by Coast Guard requirements for minimum staffing levels on vessels, labor contracts, and WSF department heads' decisions within their approved budgets.

Labor Cost and Positions Increase

Over the last ten years, annual labor cost changes have ranged from a 2 percent decrease to an 8 percent increase. This pattern reflects the changes in full time equivalent (FTE)

positions as well as service or other cost reductions. The largest labor costs are: vessel staff (67 percent of labor costs from 1996 through 2006); followed by terminal staff (17 percent); maintenance staff (13 percent); and administrative staff (4 percent).

Labor Union Agreements and Collective Bargaining

Ninety-two percent of WSF employees are represented by bargaining units, including eleven separate labor organizations.

Historically, WSF negotiated agreements with maritime labor unions separately from the rest of the state. However, in 2006 the legislature modified the process for entering into labor agreements for WSF maritime employees. Under this legislation, WSF is to use the same timeframe as used in other state labor negotiations. In the event of an impasse, WSF and the bargaining unit must submit to arbitration. Funding to implement an agreement must be certified as financially feasible by the director of the Office of Management and Budget. Once certified, the request is included in the Governor's budget proposal to the legislature. If the legislature rejects or fails to act on the request, either party may reopen the agreement.

Labor Relations

WSF labor relations are subject to the processes conducted by the Marine Employees Commission (MEC) for maritime employees, rather than the Public Employee Relations Commission, which covers other represented state employees and a small group of non-maritime WSF employees. The MEC is responsible for adjudicating complaints, grievances, and disputes; providing for impasse mediation; and conducting salary surveys for maritime employees.

The relationship between WSF and the unions has often been contentious. A 1998 performance audit by Booz Allen found that labor relations bargaining and dispute resolution processes adversely affect the ability of WSF to operate effectively and efficiently, and that the organization experiences an extraordinary number of unfair labor practice charges and grievances.

There are two outstanding labor related lawsuits that could impact WSF operating costs: one involving engine room employees and the other licensed deck employees.

Key Labor Agreement Provisions

The labor agreements that affect WSF operations have a number of provisions that affect WSF cost of operation.

- ***Eight-hour minimum call:*** WSF labor agreements provide for a minimum eight hour consecutive day, which means that WSF cannot schedule split shifts or less than eight hour shifts to meet peak demand or other scheduling requirements.
- ***Overtime Pay:*** Overtime pay represents 8 percent of annual total labor wages paid by WSF in FY 1996 through FY 2006. Seventy percent of overtime expense is incurred by vessel staff, followed by maintenance staff at 18 percent, and terminal staff at 10 percent.

- **Travel Time:** Travel time pay represents between 2 and 3 percent of annual total labor wages paid by WSF from FY 1996 through FY 2006. Most of the travel time expense is incurred by vessel staff, varying from 81 percent to 91 percent of annual overtime costs from FY 1996 through FY 2006. Employees may receive mileage reimbursement for use of a private automobile during such travel. Mileage reimbursement is a significant cost to WSF and runs over \$1 million per year.
- **Penalty Pay:** Penalty pay represents 1 percent of the total labor wages paid by WSF in FY 1996 through FY 2006. Seventy-five percent of penalty pay goes to vessel staff, and 25 percent to Eagle Harbor maintenance staff.
- **Minimum Staffing Provisions:** Labor agreements require staffing on vessels beyond those required by the Coast Guard to staff the vessels safely, and what WSF would do if not required by the labor agreements. Nine percent of vessel crewing and 7 percent of costs included in this analysis are the result of labor union requirements, at a cost estimated at \$4.1 million annually.
- **Other Provisions:** Other non-salary provisions that affect WSF's operating costs or represent lost revenues include additional paid holidays, half-price meals on vessels, uniforms and jackets, schooling, crew minimum staffing, and ferry passes. These provisions have an estimated cost of \$3.0 million a year, of which \$1 million represents foregone revenue.
- **Scheduling:** Contracts for some of the maritime bargaining units also affect how WSF schedules staff for vessels, terminals, and the Eagle Harbor repair facility. This can lead to increased overtime and travel pay.

Vessel Labor Costs

Vessel labor is 67 percent of all labor costs and is the most impacted by overtime, travel time, and penalty pay provisions. Overtime, travel time, and penalty pay were 13 percent of total vessel staffing costs from FY 1996 through FY 2006.

Impact of Recent Labor Agreements and Settlements

The transfer of responsibility for labor negotiations from WSF to the Governor's office has resulted in settlement of all outstanding labor agreements. These combined with various arbitration agreements will result in increased labor cost for WSF of \$8.9 million in FY 2007 with an ongoing biennial cost of \$8.6 million. Additionally, negotiated 2007-09 labor contracts will result in increased labor costs for WSF of \$17 million in the 2007-09 biennium with an ongoing biennial cost of \$19.1 million.

Fuel Costs

In the 2006 legislative plan, fuel is projected to be 21 percent of WSF expenses from the 2005-07 biennium through the 2019-21 biennium. Fuel expenses were projected to increase by 45 percent from 2003-05 to 2005-07. This projection was based on the February 2006 fuel forecast. However, an updated forecast in September 2006 projects that fuel prices will stabilize and begin to decrease from a peak of \$2.47 per gallon in FY 2008 to a low of \$1.96 per gallon in FY 2013. Consumption is assumed to be constant at 17.7 million gallons per year.

Impact of Cost Changes on Operating Fund

The labor cost increases and changes in forecast of fuel prices will affect the Puget Sound Ferries Operations Account, reducing its ability to transfer funds to the capital account. The 2006 legislative plan assumed a \$518 million transfer to the capital account, but increased labor and fuel costs will likely reduce this transfer to approximately \$450 million. This projection depends on all other assumptions regarding costs and revenues remaining constant. It is likely that in reality the operating fund will not be able to contribute even this reduced amount to capital.

Farebox Recovery

Farebox recovery, as used by WSF, shows the percentage of WSF operating costs, including WSDOT costs, that are recovered by earned revenues from the farebox and other income. In FY 2005 recovery is at 76 percent systemwide, ranging from a low of 23 percent on the Vashon-Seattle passenger only ferry service to a high of 111 percent on the Seattle-Bainbridge route.

WSF has not historically calculated the percentage of total earned income against total ferry expenses, including expenses incurred by WSP and MEC, nor shown the percent of direct tax support against operating costs. Legislative staff have calculated these additional recovery percentages on a biennium basis. Their analysis shows that for the 2005-07 biennium, earned income is projected to be 72 percent of WSF operating costs (farebox 70 percent and other income 2 percent) and direct tax support 13 percent. Earned income as a percentage of all ferry operating costs is expected to be 67 percent, with direct tax support providing an additional 12 percent.

Consultant Observations and Recommendations

The consultants have reviewed the legislative staffs' analysis of the WSF operating budget and added some additional analysis. Based on this review, the consultants offer the following observations and recommendations for consideration by the legislature.

Operating Transfers to Capital

The 2006 legislative financial plan and WSF's Draft Long-Range Strategic Plan both assume significant capital funding from operations.

Consultant Findings:

- Rising labor costs and the volatility of fuel costs make it unlikely that surplus operating funds will be available to transfer to the capital account at the forecasted level.
- The decision to transfer surplus operating funds to the capital account makes the operating fund less stable, especially given that WSF is highly dependent on earned income.
- Transferring dedicated tax revenues to capital negates the legislature's intent in dedicating tax revenues to support ferry operations.

- The policy of using revenues from fares and concessions (part of the operating account) to support the capital account, if continued, should be clearly stated by the legislature.
- Providing capital funding from surplus operating funds subjects the capital account to the volatility of operating revenues and expenses.
- WSF's operating account has only a \$5 million minimum fund balance, which is 1 percent of its operating funds per biennium. This is insufficient for an enterprise dependent on volatile labor and fuel costs and on farebox and other earned revenue. Traditionally, WSF has been appropriated a 2 percent reserve for labor and a 10 percent reserve for fuel. Both of those reserves were taken out in 2006 to fund their increased labor and fuel.

Consultant Recommendations:

1. Either merge capital and operating accounts, or
2. Do not transfer funds if the accounts are not merged.
3. Maintain a larger operating reserve to balance the volatility of WSF operating expenditures and revenues.

Tariffs and Other Earned Income

WSF earns more than 75 percent of its revenue from farebox, concessions, and other income. The most significant revenue is from the farebox. Tariff policies also play a key role in traffic demand strategies and in the potential to increase revenue by increasing non-peak usage of the ferries.

Consultant Findings:

- The legislature has provided limited guidance on tariff policy. The 2006 legislative financial plan assumed future fare increases of 2.5 percent a year, which may not be sufficient to meet future operating expenses and has been assumed as a directive for the WSF Draft Long-Range Strategic Plan 2006-2030.
- The Tariff Policy Committee (TPC) was created by the WSTC at a time when the WSTC had administrative responsibility for WSDOT. The role of the WSTC was changed by the 2005 legislature, with hiring/firing the Secretary of Transportation and management direction for WSDOT being transferred to the Governor. The TPC includes elected officials, which makes it more difficult to insulate the legislature from tariff decisions. The Legislature has designated the WSTC as the body to set tariffs for both ferries and other transportation tariffs, such as the Tacoma Narrows Bridge, in order to provide separation from the legislative process.
- Public participation requirements may be carried out through hearings in local communities or a survey of affected ferry users. By conducting hearings and not a market survey, the TPC hears from and is affected by organized groups, but has limited information on the broad base of ferry users.
- While the concepts underpinning the tariff route equity program are reasonable, the concept does not recognize the differences in the travel sheds WSF serves. Tariff route equity also affects farebox recovery.

- The TPC has discussed traffic demand management, congestion pricing, and value pricing as ways to improve vehicle occupancy and encourage drive-ons to become walk-ons, but has not explored using these policies to encourage off-peak ridership.
- WSF earns most of its revenue from fares and has a largely fixed-cost operation. There is ample capacity to accommodate increased ridership in non-peak periods.
- Farebox recovery varies between routes based on market characteristics and operating costs. There is little discussion, however, of individual route farebox recovery rate goals or ways to improve recovery on a route-by-route basis.
- Concessions and other revenues are a small portion of WSF's earned revenue. The majority of concession revenue comes from vessel-based concessions, parking, and vending.

Consultant Recommendations:

1. The legislature should consider providing more specific policy direction on tariffs to the WSTC that would give priority to traffic demand management and market considerations of the individual travel sheds. The legislature should also consider being specific on the role it wants dedicated tax support to play in establishing tariffs.
2. The WSTC should examine the role of the TPC in establishing rates, given its new, more limited role, and examine whether elected officials should serve on the Committee if it remains.
3. The legislature should consider requiring a market survey to inform biennial fare decisions.
4. Tariff route equity policies should be re-examined for calibration with regard to traffic demand, value pricing, and farebox recovery goals. The legislature could establish the relative importance of tariff route equity in revising its tariff policy directions.
5. Traffic demand strategies that encourage walk-on riders, discourage single-occupant vehicles, and that might spread demand to non-peak periods should be pursued. Value pricing in comparison to transit system charges within the various travel sheds should also be pursued.
6. To encourage non-peak ridership, the legislature should consider providing funding to WSF to support marketing and programs that promote non-peak ridership.
7. Farebox recovery and ridership goals should be established by route.
8. Priority should be given to increasing non-peak ridership over state capital-investment-based concessions revenue.

Expenses

WSF expenses have grown at an average rate of 9.4 percent per biennium between the 1993-95 and 2005-07 biennia. Full-time equivalent positions have increased by 9 percent over the same time period. Labor and fuel costs account for approximately 80 percent of WSF's expenses.

Consultant Findings:

- Expense projections are understated because the state does not project future labor agreement expenses.

- Fuel and labor account for nearly 80 percent of WSF operating costs. Since 92 percent of WSF's employees are represented, management has limited opportunities to manage and control costs.
- WSF has a high fixed-cost operation. Since Coast Guard and union staffing requirements do not vary with the number of passengers, vessel operation costs the same no matter the number of passengers.
- WSF provides limited cost projections at the route or travel shed level.
- Labor agreements constrain WSF operations and drive additional staffing, overtime, and other costs. The most significant constraints appear to be the required eight-hour minimum shift and consequent inability to operate with split shifts, and the staffing required on vessels beyond Coast Guard requirements.
- WSF might control costs by making service modifications, but the ability to save funds is made more difficult by labor agreement requirements. WSF's analysis found that eliminating one or more round trips in many cases resulted only in fuel savings, since the service time reduction would not be large enough to affect the eight-hour minimum call provisions of the labor agreements.

Consultant Recommendations:

1. WSF should provide expense projections that assume an allowance beyond inflation at 70 percent of IPD for labor costs, for use in setting tariffs and for legislative planning. These projections should be consistent with past increases.
2. Farebox recovery rate goals by route should be established. The legislature should request WSF to provide cost and revenue information consistently by route.
3. Priority should be given in collective bargaining to modifications to the eight-hour shift and the extra vessel staffing provisions of the agreements.

Section One Introduction

This review of Washington State Ferries' (WSF) operating budget is part of the Washington State Ferries Financing Study. This review was conducted primarily by staff from the Senate Transportation Committee and the House Transportation Committee. The consultants were asked to incorporate the legislative staffs' work into the ferry financing study, and have included additional analysis and consultants' recommendations.

Section Two Operating Resources

Below is an overview of the resources available to support WSF operations, based on the 2006 legislative financial plan amended by June 2006 projections of the motor vehicle fuel tax and income from licenses, permits, and fees. See also Table 2 on the next page.

A. Earned Revenue

The ferry system is supported primarily through farebox revenues. WSF also earns revenue from leases and concessions. Table 1 lists historical and projected earned revenue.

Table 1. Percentage Earned Revenue

	1993-2005	2005-07 biennium	2007-09 biennium	2009-11 biennium	2011-13 biennium	2013-15 biennium	2015-17 biennium	2017-19 biennium	2019-21 biennium
Farebox Revenue	71%	75%	82%	89%	94%	99%	103%	107%	113%
Income from Property	1%	2%	2%	2%	2%	2%	3%	3%	3%
Total Earned Income	72%	77%	84%	91%	96%	101%	106%	110%	116%

B. Tax Revenues

1. Dedicated Tax Support

The Puget Sound Ferry Operations Account receives dedicated tax support from the motor vehicle fuel tax (2.3283% of net gas tax collections or 0.54 cents of the 23-cent dedicated gas tax); motor vehicle registration fees (\$2.02 per new registration, \$0.93 per renewal); combined licensing fees (1.411% of collections); and 80 percent of treasury deposit earnings. In 2006 the legislature decided that the fuel taxes and fees collected from the additional gas taxes levied in 2003 and 2005 in San Juan and Island counties would not be refunded to the counties as required by the Capron Refunds law, but instead would be made available for WSF operations. These Capron funds are anticipated to generate \$74 million for ferry operations from the 2005-07 biennium through the 2019-21 biennium.

Table 2. Ferry Operating Funds
(\$'000,000s)

	actuals - LEAP & agency data								forecast																	
	93/95	95/97	97/99	99/01	01/03	03/05	% 93-05	05/07	%	07/09	%	09/11	%	11/13	%	13/15	%	15/17	%	17/19	%	19/21	%	05/21	%	
FERRY OPERATING RESOURCES AVAILABLE																										
Puget Sound Ferry Operations Account (Account 109) and Marine Operating Account (Account 519) Revenues:																										
Farebox Revenues *	148.8	157.8	173.6	192.3	230.9	259.4	71%	289.6	75%	321.0	82%	353.5	89%	382.3	94%	410.1	99%	437.3	103%	465.8	107%	496.0	113%	3,155.5	96%	
Motor Vehicle Excise Tax	45.4	51.6	59.8	14.4	(0.0)	(0.0)	11%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	
Motor Vehicle Fuel Tax **	28.4	30.8	32.7	33.5	34.1	34.7	12%	35.3	9%	37.7	10%	40.0	10%	41.4	10%	42.5	10%	43.4	10%	44.3	10%	45.4	10%	329.9	10%	
Motor Vehicle Fuel Tax - Capron**	-	-	-	-	-	-	0%	3.0	1%	8.3	2%	9.5	2%	10.0	2%	10.3	2%	10.6	2%	10.9	3%	11.3	3%	73.8	2%	
Licenses, Permits, and Fees **	10.7	11.1	11.8	12.3	13.5	13.7	4%	15.1	4%	15.6	4%	16.3	4%	16.8	4%	17.3	4%	17.8	4%	18.3	4%	18.8	4%	135.9	4%	
Income from Property*	1.9	3.6	1.0	2.9	2.7	3.8	1%	6.5	2%	8.5	2%	9.7	2%	9.7	2%	10.4	2%	10.9	3%	11.6	3%	12.3	3%	79.6	2%	
Miscellaneous	1.0	2.9	5.0	(4.9)	(6.0)	1.2	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	
	236.3	257.7	283.9	250.4	275.2	312.8	99%	349.4	91%	397.0	100%	429.0	108%	460.1	113%	490.5	118%	520.0	122%	550.9	127%	583.7	133%	3,774.8	115%	
Transfers & Direct Appropriations:																										
Multi Modal Transportation Account	-	2.5	-	5.1	-	5.1	1%	3.7	1%	-	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	3.7	0%
Motor Vehicle Account	-	-	-	-	38.3	31.3	4%	31.0	8%	-	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	31.0	1%
PS Capital Construction Account**	-	-	-	(67.0)	-	(22.0)	-5%	-	0%	(1.0)	0%	(30.0)	-8%	(54.0)	-13%	(75.0)	-18%	(95.0)	-22%	(117.0)	-27%	(146.0)	-33%	(518.0)	-16%	
General Fund	-	-	-	20.0	-	-	1%	-	0%	-	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%
	-	2.5	-	(41.9)	38.3	14.4	1%	34.7	9%	(1.0)	0%	(30.0)	-8%	(54.0)	-13%	(75.0)	-18%	(95.0)	-22%	(117.0)	-27%	(146.0)	-33%	(483.3)	-15%	
TOTAL OPERATING INCOME	236.3	260.2	283.9	208.5	313.5	327.2		384.1		390.0		399.0		406.1		415.5		425.0		433.9		437.7		3,291.4		
FERRY OPERATING COSTS																										
Expenditures - actuals/2006 Leg Plan:																										
WSF Operations	220.6	236.0	258.7	302.4	310.3	329.1	97%	375.9	97%	379.1	97%	386.6	97%	395.2	97%	403.6	97%	412.3	97%	421.3	97%	430.4	97%	3,204.3	97%	
WSDOT	4.5	7.9	3.8	10.8	11.5	9.1	3%	9.9	3%	10.1	3%	10.2	3%	10.4	3%	10.7	3%	10.9	3%	11.1	3%	11.3	3%	84.5	3%	
Marine Employees Commission	0.3	0.3	0.3	0.3	0.3	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.4	0%	0.5	0%	3.4	0%	
TOTAL FERRY OPERATING COST	225.4	244.2	262.8	313.4	322.1	338.6		386.2		389.5		397.2		406.0		414.7		423.6		432.8		442.2		3,292.2		
Estimated PSOA Balance at end of biennium								0.4		0.9		2.7		2.8		3.7		5.1		6.2		1.8				
* 2006 Legislative Plan																										
** June 2006 Forecast																										

Source: Legislative Staff

Table 3. WSF Operating Cost Detail

	93/95	95/97	97/99	99/01	01/03	03/05	%	05/07	%	07/09	%	09/11	%	11/13	%	13/15	%	15/17	%	17/19	%	19/21	%	2005-21	%
Labor	152.9	163.5	183.1	202.1	207.3	204.0	67%	226.5	60%	231.3	61%	237.2	61%	243.9	62%	250.6	62%	257.5	62%	264.8	63%	272.3	63%	1,984.0	62%
Fuel	19.7	22.6	20.3	38.2	33.8	52.1	11%	75.3	20%	77.6	20%	80.4	21%	83.6	21%	86.9	22%	90.4	22%	94.0	22%	97.8	23%	686.0	21%
Other	48.0	50.0	55.3	62.0	69.2	72.9	22%	74.2	20%	70.1	18%	69.0	18%	67.6	17%	66.1	16%	64.4	16%	62.5	15%	60.3	14%	534.2	17%
Total	220.6	236.0	258.7	302.4	310.3	329.1		375.9		379.1		386.6		395.2		403.6		412.3		421.3		430.4		3,204.2	

Source: Legislative Staff, using 2006 Legislative financial plan assumptions

2. Supplemental Tax Support

From the 1993-95 through the 2003-05 biennia, WSF received tax support beyond the dedicated taxes. This support included direct appropriations and transfers primarily from the Multimodal Transportation Account and the Motor Vehicle Account, with a distribution from the General Fund in 2000 following the repeal of motor vehicle excise tax (MVET) funding. In the 2005-07 biennium, \$31 million was appropriated from the Motor Vehicle Account and \$3.7 million from the Multimodal Transportation Account to the Puget Sound Ferry Operations Account. No tax support beyond the dedicated taxes is anticipated in future years.

Table 4 shows the percentage each of these two forms of tax support provides for the Operations Account.

Table 4. Percentage Tax Support: Puget Sound Ferry Operations Account

	1993-2005	2005-07	2007-09	2009-11	2011-13	2013-15	2015-17	2017-19	2019-21
Dedicated Tax Support	27%	14%	16%	16%	17%	17%	17%	17%	16%
Supplemental Tax Support	6%	9%							
Total Tax Support	33%	23%	16%	16%	17%	17%	17%	17%	16%

C. Transfers to Capital

From 1993 through 2005, \$89 million was transferred from the Puget Sound Ferry Operations Account to the Puget Sound Capital Construction Account, which supports the WSF capital program. During the period 2005-21, the 2006 legislative plan anticipates transferring \$518 million to the capital account from the operating account. By the 2013-15 biennium, 100 percent of the dedicated operating tax support is anticipated to be transferred to capital along with 1 percent of farebox revenue. By the 2019-21 biennium, 10 percent of earned revenue is anticipated to be transferred to the capital account, along with 100 percent of the dedicated tax support. Table 5 shows these transfers by biennium.

Table 5. Transfers from Operating Account to Capital Account
(\$000,000)

	1993-2005	2005-07	2007-09	2009-11	2011-13	2013-15	2015-17	2017-19	2019-21
Dedicated Tax Revenue	438	53	62	66	68	70	72	73	75
Transfer to Capital	-89	0	-1	-30	-54	-75	-95	-117	-146
% of Tax Revenue	20%	0%	2%	46%	79%	107%	132%	159%	194%
Net – From Earned Income						5	23	44	71
% of Earned Income Transferred						1%	5%	9%	14%

D. Operating Expenses

The Puget Sound Ferry Operations Account funds WSF operations; the Marine Employees Commission (MEC); Governor's Labor Relations Office activities on behalf of WSF/WSDOT, and the information technology, revenue collection system, and administration expenses incurred by the Washington State Department of Transportation

(WSDOT) on behalf of WSF. WSF operating expenses are 97 percent of the expenses supported by the Puget Sound Ferry Operations Account.

E. Other WSF Support

WSF operations are supported by expenses incurred by WSDOT for torts defense, risk management, and claims; by WSDOT for other information technology and revenue collection system expenses; and by the Washington State Patrol (WSP) for security and traffic control (see Table 6). These expenses are not charged to the Puget Sound Ferry Operations Account, and are projected to grow from \$16.7 million in the 2003-05 biennium to \$27.2 million in the 2019-21 biennium. (The projection does not include the impact of labor cost changes for the WSF, and so, to that extent, is understated.)

Table 6. Ferry Costs Absorbed by other Agencies/Accounts

	(\$000,000s)												
	95/97	97/99	99/01	01/03	03/05	05/07	07/09	09/11	11/13	13/15	15/17	17/19	19/21
WSP - Security & Traffic	1.9	1.9	1.6	3.2	5.6	12.9	15.0	15.0	15.0	15.0	15.0	15.0	15.0
WSDOT - Torts Defense					5.3	6.8	8.7	9.1	9.5	9.8	10.2	10.6	11.5
WSDOT - IT & Revenue			0.2	2.1	5.8	1.9	0.6	0.6	0.6	0.6	0.7	0.7	0.7
Total	1.9	1.9	1.8	5.3	16.7	21.5	24.3	24.7	25.1	25.5	25.9	26.3	27.2

Source: Legislative staff

Section Three Farebox Revenue

Fares are the most important source of revenue for WSF, providing 75 percent of funding for the Puget Sound Ferry Operations Account in the 2005-07 biennium, and projected to fully fund the operating expenses of that account by 2013-15, with additional funds transferred to the capital account through 2021.

A. Farebox Revenue Growth

Farebox revenues are projected using an econometric model, which is reviewed in the *Washington State Ferries Financing Study Technical Appendix 4: Forecasting Models Review*. As a result of projected ridership growth and tariff increases, farebox revenue is projected to grow at between 6 percent and 11 percent per biennium between the 2007-09 and 2019-21 biennia, as shown in Table 7.

Table 7. Farebox Revenue Growth

(\$000,000s)		
Fiscal Year	Revenue	%
93/95	148.8	
95/97	157.8	6%
97/99	173.6	10%
99/01	192.3	11%
01/03	230.9	20%
03/05	259.4	12%
05/07	289.6	12%
07/09	321.0	11%
09/11	353.5	10%
11/13	382.3	8%
13/15	410.1	7%
15/17	437.3	7%
17/19	465.8	7%
19/21	496.0	6%

Source: Legislative staff

B. Tariff Rates

Tariffs increased 62 percent (79 percent on a compounded basis) between 2001 and 2006 in response to the loss of MVET funding. Tariffs are projected to increase 2.5 percent per year from 2007 to 2021, as stated in the 2006 legislative financial plan. As noted in the *Washington State Ferries Financing Study Technical Appendix 4: Forecasting Models Review*, new tariffs are established each May 1. Tariff rate increases are applied to the central Sound routes and rounded to the nearest nickel. Based on tariff rate equity (see discussion below), rates are then calculated for the other routes and rounded to the nearest nickel. Table 8 shows the past and projected tariff increases.

Table 8. WSF Fare Increases

Year	% Increase
1994	6.0%
1998	2.3%
1999	4.4%
2001*	22.9%
2002*	13.6%
2003*	7.7%
2004*	5.4%
2005*	6.3%
2006	6.0%
2007-21	2.5%

*Increase with nickel rounding

Sources: Legislative Staff; PB Consult June 19, 2006, Revenue Forecast Presentation

C. Sources of Farebox Revenue

The most significant source of farebox revenue is vehicle tariffs, accounting for 75 percent of all farebox revenues. Vehicle tariffs include the vehicle and driver, plus “other” vehicles, such as motorcycles and trucks. Passengers account for 24 percent of farebox revenues. Miscellaneous revenues from charter cruises, the duty free shop, and reservation deposits makeup the remaining 1 percent of farebox revenue. Table 9 shows the distribution of farebox revenues by biennium.

Table 9. Farebox Revenues

(\$000s)

109 - PUGET SOUND FERRY OPERATIONS ACCOUNT											
Transportation Services Accounts		95-97	%	97-99	%	99-01	%	01-03	%	03-05	%
0497 10 Passenger Services		33,799	21%	35,919	21%	39,198	20%	45,269	20%	50,425	19%
0497 11 Passenger Only Express		956	1%	1,833	1%	2,522	1%	3,499	2%	1,008	0%
0497 15 Transit Pass		1,446	1%	2,802	2%	4,229	2%	6,765	3%	10,456	4%
0497 17 WSF Web Pass Sales			0%		0%	26	0%	765	0%	849	0%
Sub-total Passengers		36,201	23%	40,554	23%	45,975	24%	56,298	24%	62,738	24%
0497 20 Automobiles		106,004	67%	115,523	67%	126,703	66%	151,380	66%	168,892	65%
0497 40 Other Vehicles		15,274	10%	17,304	10%	19,077	10%	22,624	10%	27,194	10%
0497 50 Freight		168	0%	106	0%	167	0%	235	0%	238	0%
0497 55 Charter Cruises		21	0%	21	0%	73	0%	47	0%	134	0%
0497 65 Duty Free Shop		116	0%	103	0%	126	0%	109	0%	121	0%
0497 97 WSF Reservation Deposit			0%	-36	0%	190	0%	142	0%	122	0%
Total		157,784		173,575		192,311		230,835		259,439	

D. Tariff Structure

WSF has a complex tariff structure with more than 2,500 ticket types, including 810 possible fares for the Anacortes/San Juan Islands and Sidney B.C. routes. “WSF has fares for adult, child, senior, disabled, motorcycle, motorcycle with side car, bicycles, over-height, over-

width, under 20 feet and then in 10 foot increments, frequent users, monthly passes, day-of-week in the San Juan Islands, a different definition of frequent users between the San Juan Islands and the rest of the system, employer vouchers, business accounts, senior convenience tickets, etc.” (WSF Electronic Fare System Project and Regional Fare Coordination Project Report to the Legislature, June 30, 2006, p. 8).

Fares by travel shed as of May 1, 2006 are shown in Appendix A and summarized in Table 10, below. The most complex fares are for the San Juan routes with 210 separate fares, followed by the South Sound routes, which have 78 separate fares. Together these routes account for 21 percent of system ridership and 62 percent of the possible fares.

Table 10. Fares and Riders by Travel Shed

	% FY2005 Riders	% Passengers	% Vehicles	Farebox Recovery	# of Fare Types	% of Fares
Central Sound	55%	61%	47%	93%	36	8%
Mukilteo Clinton	17%	14%	20%	97%	36	8%
Pt. Townsend-Keystone	3%	3%	3%	58%	36	8%
South Sound	14%	12%	17%	54%	78	17%
Pt. Defiance-Tahlequah	3%	2%	4%	66%	36	8%
Anacortes-Sidney	1%	1%	1%	73%	39	8%
San Juan Islands	7%	7%	8%	49%	210	45%
Total					471	

1. Passenger Fares

Passenger fares include three categories of fares (full fare, youth, and senior/disabled), with discount books or passes available for frequent users. Children under six ride free. Youth 6-18 pay 80 percent of the regular full fare. Senior and disabled passengers pay 50 percent of the regular full fare. With the exception of the San Juan Island routes, passengers do not pay a seasonal peak fare. On the San Juan Island routes, passengers also pay a higher fare on weekends (Wednesday–Saturday). See Table 11, below.

With the exception of the Port Townsend-Keystone and Anacortes-Sidney routes, passenger fares are sold as round trip tickets at one terminal on each route.

Passengers can purchase frequent user books and passes on all routes except the Anacortes-Sidney route. The frequent user books or multi-ride commute cards include ten round trips and are priced generally at 80 percent of the regular full adult fare (i.e., at the youth fare rate). Monthly passes are available on all routes except the San Juan and Anacortes-Sidney routes. WSF’s intention is to have the monthly passes used for no more than 31 round trips, although there is currently no way to enforce this restriction.

Passengers on the Interisland runs in the San Juan Islands ride for free.

**Table 11. Passenger Fares (Round Trip)
Effective May 2006**

	Full Fare	Youth Fare	Senior Fare	Peak Fare	Weekend Premium	Frequent User	Monthly Pass, per use*
Central Sound	\$6.50	\$5.20	\$3.25	no	no	\$5.20	\$2.72
Mukilteo Clinton	\$3.85	\$3.10	\$1.90	no	no	\$3.08	\$1.62
Pt. Townsend-Keystone**	\$5.00	\$4.00	\$2.50	no	no	\$4.00	\$2.10
South Sound							
Vashon POF	\$8.50	\$7.20	\$4.25	no	no	\$7.20	\$3.75
Fauntleroy-Southworth	\$5.00	\$4.00	\$2.50	no	no	\$4.00	\$1.94
Fauntleroy-Vashon & Southworth-Vashon	\$4.20	\$3.40	\$2.10	no	no	\$3.36	\$1.77
Pt. Defiance-Tahlequah	\$4.20	\$3.40	\$2.10	no	no	\$3.36	\$1.77
Anacortes-Sidney**	\$31.20	\$25.00	\$15.60	no	no	n/a	n/a
San Juan Islands **				(Adult)			
Anacortes-Lopez	\$9.60	\$7.70	\$4.80	\$11.55	yes	\$6.93	n/a
Anacortes-Shaw & Anacortes-Orcas	\$9.60	\$7.70	\$4.80	\$11.55	yes	\$6.93	n/a
Anacortes-Friday Harbor	\$9.60	\$7.70	\$4.80	\$11.55	yes	\$6.93	n/a
Interisland	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	
* Pass fare assumes 31 uses							
** Shown as round-trip. Fares collected one-way. Fares shown are Sunday-Tuesday fares.							

2. Vehicle Fares

Vehicle fares are more complex than passenger fares. They include: vehicle and driver fares for cars under 20 feet; regular fares; senior or disabled fares at approximately 85 percent of the full fare rate; and height surcharges. See Table 12, below.

Motorcycle rates are available for the regular fare and at senior/disabled fares, which are approximately 70 percent of the regular fare.

Frequent user books or commuter cards are available for vehicles and motorcycles on all routes except the Sidney-Anacortes route. Twenty one-way trips are included in the books or commuter cards (except in the San Juans where ten round trips are included) and are priced at 80 percent of the full fare.

Vehicle-length-based fares include seven increments, then a cost per foot over eighty feet.

Vehicles of all lengths and motorcycles pay a peak season premium on all routes. In the San Juans they also pay a weekend premium. Promotional rates are offered on the Anacortes-Sidney route for vehicles over 30 feet, including recreational vehicles.

Fares are collected one-way on all routes except the San Juan Islands routes, the Vashon Island routes in the South Sound and the Pt. Defiance-Tahlequah route, where they are collected round-trip from one terminal.

Table 12. Vehicle Fares (One-Way)
May 2006

	Regular Fare	Senior Fare	Regular Peak	Senior Peak	Weekend Premium	Frequent User
Vehicles Under 20"						
Central Sound	\$11.25	\$9.60	\$14.10	\$12.45	no	\$9.00
Mukilteo Clinton	\$6.65	\$5.65	\$8.35	\$7.35	no	\$5.32
Pt. Townsend-Keystone	\$8.70	\$7.45	\$10.90	\$9.65	no	\$6.96
South Sound						
Fauntleroy-Southworth	\$8.70	\$7.45	\$10.90	\$9.65	no	\$6.96
Fauntleroy-Vashon & Southworth-Vashon*	\$7.20	\$6.15	\$9.00	\$7.95	no	\$5.76
Pt. Defiance-Tahlequah*	\$7.20	\$6.15	\$9.00	\$7.95	no	\$5.76
Anacortes-Sidney	\$41.90	\$34.10	\$52.40	\$44.60	no	promo fares
San Juan Islands						
Anacortes-Lopez*	\$11.68	\$9.28	\$15.78	\$12.88	yes	\$9.72
Anacortes-Shaw & Anacortes-Orcas*	\$13.98	\$11.58	\$18.88	\$15.98	yes	\$11.65
Anacortes-Friday Harbor*	\$16.63	\$14.23	\$22.45	\$19.55	yes	\$13.84
Interisland*	\$7.73	\$7.73	\$9.68	\$9.68	**	\$6.18
Motorcycles						
Central Sound	\$4.85	\$3.20	\$6.10	\$4.45	no	\$3.88
Mukilteo Clinton	\$2.90	\$1.90	\$3.65	\$2.65	no	\$2.32
Pt. Townsend-Keystone	\$3.75	\$2.50	\$4.50	\$3.45	no	\$3.00
South Sound						
Fauntleroy-Southworth*	\$3.75	\$2.50	\$4.70	\$3.45	no	\$3.00
Fauntleroy-Vashon & Southworth-Vashon*	\$3.13	\$2.08	\$3.93	\$2.88	no	\$2.50
Pt. Defiance-Tahlequah*	\$3.13	\$2.08	\$3.93	\$2.88	no	\$2.50
Anacortes-Sidney	\$20.90	\$13.10	\$26.15	\$18.35	no	n/a
San Juan Islands						
Anacortes-Lopez*	\$6.18	\$3.78	\$8.35	\$5.45	yes	\$5.14
Anacortes-Shaw & Anacortes-Orcas*	\$6.65	\$4.25	\$9.00	\$6.10	yes	\$5.53
Anacortes-Friday Harbor*	\$7.18	\$4.78	\$9.70	\$6.80	yes	\$5.96
Interisland*	\$2.20	\$2.20	\$2.75	\$2.75	**	n/a

* Shown as one way. Fares are collected at one terminal only for the round-trip. Fares shown are Sunday-Tuesday fares.

** Fares may vary depending on destination and day of week.

E. Tariff Policies

Ferry tariffs are set by the Washington State Transportation Commission (WSTC).

1. Legislative Direction

Legislative direction to the WSTC in setting tariffs is reviewed in *Washington State Ferries Financing Study Legislative Concerns and Directions Report*, September 2006.

RCW 47.60.326 states that the following factors may be considered by the WSTC in setting tariffs:

- a. The amount of subsidy available to the ferry system for maintenance and operation.
- b. The time and distance of ferry runs.
- c. The maintenance and operation costs for ferry runs, with a proper adjustment for higher costs of operating outmoded or less efficient equipment.
- d. The efficient distribution of traffic between cross-Sound routes.
- e. The desirability of reasonable rates for persons using the ferry system to commute daily to work and other frequent users who live in ferry-dependent communities.
- f. The effect of proposed fares in increasing walk-on and vehicular passenger use.
- g. The effect of proposed fares in promoting all types of ferry use during non-peak periods.
- h. The estimated revenues that are projected to be earned by the ferry system from commercial advertisements, parking, contracts, leases and other sources.
- i. The pre-purchase of multiple fares, whether for a single rider or multiple riders.
- j. Such other factors as prudent managers of a major ferry system would consider (RCW 47.60.326).

RCW 47.60.300 directs WSF to undertake a review of tariffs and charges that shall include, but not be limited to, tariffs for automobiles, passengers, trucks, commutation rates, and volume discounts. The RCW states that the review shall give proper consideration to:

- a. time of travel
- b. distance of travel
- c. operating costs
- d. maintenance and repair expenses
- e. effect on the debt service requirements
- f. allocation of vessels to particular runs
- g. the scheduling of particular runs
- h. the adequacy and arrangements of docks and dock facilities
- i. any other subject deemed by the department to be properly within the scope of the review (RCW 47.60.300).

RCW 47.60.330 states that before increasing ferry tolls, the Department is to consider all possible cost reductions, with full public participation regarding the possible reductions, and also to consider adapting service levels equitably on a route-by-route basis to reflect trends in and forecasts of traffic usage.

2. Tariff Policy Committee

Existing state law requires WSF to solicit advice from Ferry Advisory Committees in considering tariff changes. See *Washington State Ferries Financing Study Technical Appendix 2: Legislative Concerns and Direction*, for discussion of the composition of Ferry Advisory Committees.

RCW 47.60.330 states that before a substantial expansion or curtailment of service or a revision in the schedule of ferry tolls or charges, the Department is to consult with affected ferry users by:

- a. Public hearings in affected local communities, or
- b. Conducting a survey of affected ferry users, and
- c. Review with ferry advisory committees pursuant to RCW 47.60.310.

The WSTC has created a 20-member Tariff Policy Committee (TPC) to assist it in meeting these statutory obligations. The TPC is responsible for:

- Working collaboratively with WSF to conduct an annual review of the ferry system's tariff structure and revenue needs.
- Recommending to the WSTC a schedule of tariffs reflecting adopted principles.
- Recommending administrative clarifications and improvements to the tariff schedule.
- Developing alternative fare scenarios and implementation plans.
- Soliciting and incorporating public and stakeholder comments on tariff proposals.

The current TPC includes representatives from:

- Ferry Advisory Committees – 6 members
- Transit Agencies – 4 members
- King County Labor Council – 1 member
- Washington State Bicycle Advisory Commission – 1 member
- Washington State Senate – 2 members
- Washington State House of Representatives – 2 members
- WSF Chief Financial Officer – 1 member
- Business interests – 1 member
- Chair – 1 member
- WSTC – 1 non-voting member

3. Tariff Issues

In 2005-06 the TPC examined general fare increases and transportation demand management. Discussions were informed by a projection of ferry finances and other analysis provided by WSF. Underlying the discussion was a commitment to the existing tariff route equity policies.

a) Fare increases: fuel surcharge

The TPC recommended and the WSTC adopted a 6 percent general fare increase effective May 2006, which was consistent with the WSF long-range financial plan. The TPC did not recommend a fuel surcharge because they felt the state should cover the additional expense with non-farebox revenue.

b) Traffic demand management

The TPC requested that traffic demand management be an area of focus during the 2005-06 tariff discussions. A TPC analysis of traffic demand management options examined the

passenger/vehicle fare relationship and congestion (time-of-day) pricing options. No changes were made in this tariff cycle.

The following discussions of passenger/vehicle fare relationship and congestion (time of day) pricing are excerpted from TPC November 2005 meeting packets:

Passenger/vehicle fare relationship: “The passenger/vehicle fare relationship is often seen as a key issue related to transportation demand Management. The current passenger/vehicle fare relationship dates to 1975 Over the years, discussions of the passenger/vehicle fare ratio centered around two principal ideas: (1) increase the gap between the passenger and vehicle fares to promote more high occupancy vehicle and walk-on use of ferries, and (2) passenger fares are too low when compared with other public transportation service providers and should be raised based on a value pricing approach” (TPC Transportation Demand Management, Nov. 9, 2005, p. 1).

Congestion (Time of Day) Pricing: “In previous tariff review cycles, the TPC examined time of day pricing and came to the conclusion that the only way to implement a time of day surcharge under the electronic fare system (see discussion below) is to limit the surcharge to cash transactions for vehicles only. Essentially a time of day surcharge would amount to a congestion pricing for vehicles, the goals of which would be to increase revenue and achieve transportation demand management goals by shifting more riders out of the vehicle mode and into the passenger mode” (TPC Transportation Demand Management, Nov. 9, 2005, p. 3).

c) Tariff route equity

Appendix B includes a copy of the tariff route equity program, which is based on the relationship of fares among routes. All riders are expected to contribute equally to the fixed costs of the ferry system, and each rider to contribute proportionally for the space used and the time occupying space on the vessel. Rates are established for the Central Sound routes and then distributed based on tariff route equity variables to the other routes. See *Washington State Ferries Financing Study Technical Appendix 4: Forecasting Models Review*, for further information.

4. Electronic Fare System

WSF is implementing an electronic fare system that will be integrated with the regional fare collection program (SmartCard) among seven transit providers (Sound Transit, King County METRO, Kitsap Transit, Pierce Transit, Community Transit, Everett Transit, and WSF).

The electronic fare system was piloted at the Port Townsend and Keystone terminals in the spring and summer of 2006 and is in use on the Anacortes based Sidney and San Juan Island routes as of fall 2006. The system, once fully installed, will improve cash control and customer service. The TPC has adopted tariff changes to integrate with the electronic fare system. These include: (1) a transition from commuter ticket books to multi-ride cards; (2) initiation of advance single-fare ticket sales; (3) alignment of eligibility requirements with regional public transit policies for youth, seniors and disabled; (4) establishment of a first-day-of-the month effective date for new tariffs, to place WSF in line with other public

transportation entities; and (5) introduction of a 5 percent surcharge for purchasing multi-ride tickets at the tollbooth (WSF Electronic Fare System Project and Regional Fare Coordination Project Report to the Legislature, June 30, 2006, p. 12).

Section Four Concessions and Other Revenue

Income from concessions and other leases was 1 percent of revenue available for ferry operations from FY 1993 to FY 2005. In the 2005-07 biennium, this income will be 2 percent of revenue, and is anticipated to grow to 3 percent by the 2019-21 biennium. These projections were developed by WSF and adopted in the 2006 legislative financial plan.

A. Sources of Concessions and Other Revenue

1. Concessions and Other Revenue to 2005

The largest source of concession revenue from 1995 to 2005 was on-board concessions, which, in 2003-05, represented 59 percent of all concessions revenue. All net concessions revenue from FY 1997 to FY 2003 was from on-board concessions. During this period terminal concessions revenue was more than offset by a capital construction credit.

On-board concession revenue was disrupted in 2003-05 when the on-board concessionaire ceased operation and there were delays before other vendors began operation.

**Table 13. Concessions and Parking Revenue,
1995-97 to 2003-05**

	(\$000s)									
	1995-97	%	1997-99	%	1999-01	%	2001-03	%	2003-05	%
0402 16 Parking									640	17%
0402 25 Vending Signing Bonus									2	0%
0402 70 Vessel Concession Revenue	2,919	82%	2,255	233%	2,885	101%	2,690	98%	2,261	59%
0402 72 Marriot Capital Construction Credit	-135		-2,040		-749		-741		-130	
0402 75 Terminal Concession - Marriot	237		307		324		316		437	
0402 76 Terminal Concession Revenue - Other	20		9		1		2		51	
0402 77 Terminal Concession Revenue - McDonalds	326		252		318		260		322	
<i>Net Terminal Concession Revenue</i>	<i>448</i>	<i>13%</i>	<i>-1,472</i>	<i>152%</i>	<i>-106</i>	<i>-4%</i>	<i>-163</i>	<i>-6%</i>	<i>680</i>	<i>18%</i>
0402 85 Advertising Income	190	5%	183	19%	90	3%	211	8%	218	6%
Total	3,557		966		2,869		2,738		3,801	

2. Concessions and Other Revenue Projected 2006-2015

WSF has focused attention on increasing its concessions, advertising, and other sources of revenue. WSF projects growth in revenue from: on-board food, beverage, and retail sales; wireless communication; terminal food, beverage, and retail sales, vending, advertising, and parking revenues. As shown in Table 14, WSF is projecting a higher reliance on terminal based revenues, particularly from parking, vending, and concessions. New revenue from customer use of paid wireless services is also projected.

**Table 14. Projected Concessions and Other Revenue,
2005-07 to 2013-15**

	(\$000s)															
	05-07	%	07-09	%	09-11	%	11-13	%	13-15	%	15-17	%	17-19	%	20-21	%
Vessels																
F&B & Retail	1,052		1,078		1,082		1,073		1,071		1,114		1,181		1,253	
Freight	309		348		370		380		388		406		430		455	
Charter	90		103		108		111		113		120		128		136	
Duty Free	121		125		131		135		137		144		152		160	
WIFI *	92		555		817		0		0		0		0		0	
<i>Sub-total</i>	1,664	25%	2,209	26%	2,508	26%	1,699	18%	1,709	16%	1,784	16%	1,891	16%	2,004	16%
Terminal																
F&B & Retail	933		1,140		1,214		1,207		1,206		1,256		1,331		1,411	
Vending *	1,859		1,991		2,150		2,288		2,373		2,507		2,658		2,818	
Advertising*	764		1,721		2,275		2,804		3,278		3,485		3,693		3,917	
Parking	1,317		1,459		1,576		1,694		1,800		1,902		2,017		2,138	
<i>Sub-total</i>	4,873		6,311		7,215		7,993		8,657		9,150		9,699		10,284	
Total	6,537	75%	8,520	74%	9,723	74%	9,692	82%	10,366	84%	10,934	84%	11,590	84%	12,288	84%
Per capita	\$0.14		\$0.16		\$0.17		\$0.17		\$0.18		\$0.19		\$0.20		\$0.21	
* Income earned on both vessels and terminals.																

Source: WSF

Key assumptions are as follows:

- *Vessel Food, Beverage & Retail:* Continuation of concession agreements with Olympia Cascade, CDX, and Sound Food. Sales are based on 2006 actual revenue adjusted for increases in ridership and inflation.
- *Wireless:* WIFI income is projected based on a five year contract with Parsons Transportation Group.
- *Terminal Food, Beverage & Retail:* Terminal revenues depend on large increases in revenue from Bainbridge Island when the concession is moved indoors and from construction of a new terminal at Anacortes with expanded food service. See *Washington State Ferries Financing Study Technical Appendix 3: Terminal and Repair Facility Project Review* for a discussion of the risks of concession income at Anacortes. WSF anticipates approximately \$50,000 more per year in Anacortes concession income from additional investment in concessions-related space, which will require a prolonged payback period to amortize the investment. Seattle, the largest source of concession revenue, is assumed to have no pre-inflation increase in revenue. Table 15 shows the projected concessions revenue at each terminal by year.

Table 15. Terminal Concessions Income Projection

(\$000s)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	Rate
Seattle - WSF	342	377	377	377	377	377	377	377	377	377	
Bainbridge*											
Gross Sales		284	650	715	780	780	780	780	780	780	
WSF %	0	27	62	68	74	74	74	74	74	74	9.50%
Anacortes**											
Gross Sales	585	585	598	1,084	1,101	1,110	1,117	1,125	1,132	1,138	
WSF %	53	53	54	98	99	100	101	101	102	102	9.00%
Sidney WSF	27	27	27	27	27	27	27	27	27	27	
Southworth	6	6	6	6	6	6	6	6	6	6	
Total	428	490	526	575	583	584	585	585	586	587	
Adjust***	428	505	546	594	611	603	603	604	603	603	
* Bainbridge - food service move inside 2007											
** Anacortes - new terminal building 2009											
*** Adjusted for inflation & ridership											

- **Parking:** Parking estimates are based on 2006 actual and projected 2007 revenue and then adjusted for inflation and ridership projections. The basis of the calculation is shown in Table 16.

Table 16. Parking Revenue Basis

(\$000s)

	2006	2007
Bainbridge Island	230	230
Edmonds	36	36
Anacortes	330	331
Southworth	25	75
Kingston	3	8
Mukilteo	0	0
Total	624	680

- **Vending:** The estimate is based on FY 2006 projected revenue of \$890,000, with anticipated growth of 3 percent to 5 percent per year adjusted for inflation and ridership factors. WSF has a contract with Sodexo for vending machines.
- **Advertising:** WSF earns approximately \$111,000 per year from advertising in its printed materials. This is anticipated to grow to \$132,000 by FY 2021 based on inflation. The remaining advertising income is anticipated to come from an advertising RFP, although specifics are not available. Table 17 shows the annual projected revenues.

Table 17. Projected Advertising Revenue

(\$000s)

	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Brochures - Printed Materials	111	113	115	117	118	120	122	125	128	132
All other		520	650	780	910	1,040	1,170	1,300	1,430	1,495
Total	111	633	765	897	1,028	1,160	1,292	1,425	1,558	1,627
Adjusted Total	111	653	795	926	1,076	1,198	1,334	1,470	1,605	1,673

Section Five

WSF Expenses: Overview

WSF expenses broken down between labor, fuel, and other costs are included in the summary chart of the Puget Sound Ferry Operations Account (see Table 3). Labor and fuel costs have historically been 78 percent of WSF operating expenses, and are projected to be 83 percent of expenses in future biennia. Labor is the largest expense at 60 percent historically, and projected at 62 percent for future biennia.

A. Rate of Growth of Expenses

The 2006 legislative plan assumes a 0.8 percent to 2.2 percent annual increase in WSF expenses from the 2005-07 biennium through the 2019-21 biennium, compared to an actual average cost increase of 9.4 percent from 1993-05 to 2005-07. See Table 18.

Table 18. Annual Expense Increases
2006 Legislative Plan

Biennium	Expense	% Increase	Average
93/95	220.6		9.4%
95/97	236.0	7.0%	
97/99	258.7	9.6%	
99/01	302.4	16.9%	
01/03	310.3	2.6%	
03/05	329.1	6.1%	
05/07	375.9	14.2%	
07/09	379.1	0.8%	
09/11	386.6	2.0%	
11/13	395.2	2.2%	
13/15	403.6	2.1%	
15/17	412.3	2.2%	
17/19	421.3	2.2%	
19/21	430.4	2.2%	

Source: Legislative staff

Section Six WSF Labor Costs

Labor constitutes approximately 60 percent of WSF's operating costs. Labor costs are driven primarily by the following factors:

- *Coast Guard* – Vessel minimum staffing levels are mandated by the U.S. Coast Guard.
- *Labor contracts* – Wages and benefits are set by labor contracts for 92 percent of WSF's employees. In some cases, marine employee labor contracts also set minimum vessel staffing levels above Coast Guard requirements.
- *Department of Transportation, Ferries* – Terminal, administrative, and support staffing levels are determined by department decision makers, within the department's approved budget. Terminal operating-staff-level decisions are based on sailing schedules, facility and route characteristics, and ridership patterns. Requests for new positions and related expenses must be approved by the Governor's Office of Financial Management (OFM) and included in the budget enacted by the legislature.

A. Labor Cost and Positions Increase

Over the last ten years, annual labor cost changes have ranged from a 2 percent decrease to an 8 percent increase. This pattern reflects the changes in full time equivalent (FTE) positions as well as service or other cost reductions. Table 19 shows the relationship of labor costs and FTEs.

**Table 19. Labor Costs and Positions,
FY 1996 to FY 2006**

(\$000s)											
Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
Costs	81,176	82,312	89,032	94,034	99,071	103,056	104,253	103,082	101,146	102,891	108,286
FTEs	1,486	1,481	1,544	1,648	1,784	1,636	1,744	1,579	1,641	1,633	1,629
% Increase Costs		1%	8%	6%	5%	4%	1%	-1%	-2%	2%	5%
% Increase FTE		0%	4%	7%	8%	-8%	7%	-9%	4%	0%	0%

Source: Legislative staff

WSF labor expenses are divided into four categories: vessel staff, Eagle Harbor repair facility staff, terminal staff, and administrative staff. Appendix C provides a detailed breakdown of labor costs in each of these categories.

The largest labor costs are: vessel staff, representing 67 percent of labor costs from FY 1996 through FY 2006; followed by terminal labor, at 17 percent; maintenance at 13 percent; and administrative at 4 percent. See Table 20.

Table 20. Labor Costs by Type

(\$000s)

	1996	1997	1998	99	2000	2001	2002	2003	2004	2005	2006	Total
Vessel	54,658	55,818	59,705	64,109	67,517	69,293	69,624	68,909	66,490	66,974	71,881	714,979
Maint.	9,753	9,315	12,018	11,290	12,313	13,261	14,119	13,089	13,273	13,711	14,262	136,405
Terminal	13,690	13,895	14,717	16,200	16,319	17,217	17,181	16,642	16,694	16,986	17,987	177,527
Admin.	3,074	3,284	2,591	2,436	2,922	3,286	3,329	4,441	4,693	5,218	4,155	39,427
Total	81,176	82,312	89,032	94,034	99,071	103,056	104,252	103,082	101,150	102,889	108,285	1,068,339
% Vessel	67%	68%	67%	68%	68%	67%	67%	67%	66%	65%	66%	67%
% Maint.	12%	11%	13%	12%	12%	13%	14%	13%	13%	13%	13%	13%
% Terminal	17%	17%	17%	17%	16%	17%	16%	16%	17%	17%	17%	17%
% Admin.	4%	4%	3%	3%	3%	3%	3%	4%	5%	5%	4%	4%

Source: Legislative staff

B. Labor Union Agreements

Ninety-two percent (92%) of WSF employees are represented by bargaining units, including:

- OPEIU – Office and Professional Employees International Union Local 8 (58 members) – Administrative staff
- Metal Trades Council (97 members) – Eagle Harbor trade and craft staff
- SEIU - Service Employees International Union (6 members) – Custodial staff
- MM&P - International Organization of Masters, Mates and Pilots (167 members) – Licensed deck personnel
- MM&P Operations Watch Supervisors (6 members) – Operations watch supervisors
- MEBA Licensed – Marine Engineers Beneficial Association—Licensed (232 members) – Licensed engine room staff
- MEBA Non-licensed – Marine Engineers Beneficial Association—Unlicensed (166 members) – Unlicensed engine room staff
- FASPAA – Ferry Agents, Supervisors, and Project Administrators Association (37 members) – Terminal supervisors
- IBU – Inlandboatmen’s Union of the Pacific, Marine Division, International Longshore and Warehouse Union (804 members) – Unlicensed deck and terminal staff, information agents at 2901 Administration Building, and shoregang at Eagle Harbor.
- WFSE – Washington Federation of State Employees (23 members)—Administrative staff
- IFPTE – International Federation of Professional and Technical Engineers (19 members) – capital engineering staff

In September 2005:

- 60 percent of WSF's employees worked on vessels, represented by four bargaining units;
- 6 percent at the Eagle Harbor repair facility, represented by two bargaining units;
- 20 percent at terminals, represented by three bargaining units; and
- 6 percent in administration, represented by five bargaining units.

See Table 21.

Table 21. WSF Employees: Bargaining Unit Status
(Sept. 2005)

Bargaining Unit Name	# of WSF Employees	%
Merit 1 Non-Union	144	8%
Vessels		
IBU Unlicensed Deck*	481	27%
MEBA Licensed Engine Room	232	13%
MM&P Licensed Deck	167	9%
MEBA Non-Licensed Engine Room	166	9%
<i>Total Vessels</i>	<i>1,046</i>	<i>59%</i>
Maintenance		
Metal Trades	97	6%
IBU Shoregang*	15	1%
<i>Total Maintenance</i>	<i>112</i>	<i>6%</i>
Terminals		
FASPAA Terminal Supervisors	37	2%
SEIU Custodians	6	0%
IBU Terminals	293	17%
<i>Total Terminals</i>	<i>336</i>	<i>19%</i>
Administrative		
IBU Information Desk*	15	1%
MM&P Marine Ops Watch	6	0%
Merit 1 - WFSE	23	1%
Merit 1 - IFPTE, Local 17	19	1%
OPEIU	58	3%
<i>Total Administrative</i>	<i>121</i>	<i>7%</i>
Total Employees	1,759	

*All of these groups are represented in the IBU collective bargaining agreement

Source: Legislative Staff/WSF

C. WSF Collective Bargaining

1. Bargaining

Historically, WSF negotiated agreements with labor unions separately from the rest of the state. As discussed in *Washington State Ferries Financing Study Technical Appendix 2: Legislative Concerns and Directions*, the legislature has modified the process for entering into labor agreements for WSF employees.

WSF's labor contracts must be renegotiated each biennium. Substitute House Bill 3178, passed in the 2006 session, contains a number of changes to the labor negotiation process established in 1983. WSDOT submitted a form of the bill as agency request legislation; and WSDOT, the Office of the Governor, and the ferry bargaining units testified in support of the substitute bill.

Previously, WSF began negotiations with its bargaining units in each odd-numbered year immediately following the adoption of the biennial budget. SHB 3178 adopted the timeframe used in other state wage negotiations, meaning an agreement must be completed prior to October 1, 2006, for the 2007-09 biennium. In subsequent biennia, an agreement must be completed prior to September 1st of each even-numbered year. The parties are considered to be at an impasse if they have not reached an agreement by April 1st.

In the event of an impasse, WSF and the bargaining unit must submit to arbitration. Under RCW 47.64.210, the arbitration is conducted in so-called "baseball style," where each party submits each of its proposals to the arbitrator who must choose one of the two proposals. SHB 3178 gives the parties the additional option of agreeing to grant the arbiter the ability to adopt his or her own proposal on each issue. The arbitration award is not binding if funding for the award is not granted by the legislature.

Under the legislation, funding to implement an agreement, whether arrived at through negotiation or arbitration, must be certified as financially feasible for the state by the director of OFM. Upon certification, the request is then included in the Governor's budget proposal to the legislature. The legislature must approve or reject the requested funding for individual agreements as a whole. If the legislature rejects or fails to act on the request, either party may reopen the agreement.

2. Marine Employees Commission (MEC)

As discussed in *Washington State Ferries Financing Study Technical Appendix 2: Legislative Concerns and Directions*, for maritime unions only, WSF labor relations are subject to the processes conducted by the MEC, as opposed to the Public Employee Relations Commission, which covers other represented state employees. The MEC has three members and is charged with adjudicating most complaints, grievances, and disputes between maritime labor and management; providing for impasse mediation; and conducting salary surveys to guide collective bargaining. The following unions must use a private arbiter for grievance resolution, i.e. arbitration: MM&P, Metal Trades, FASPAA, SEIU, and OPEIU. The other unions use MEC as an arbiter.

3. Relationship

The relationship between WSF and the unions has often been contentious. As discussed in *Washington State Ferries Financing Study Technical Appendix 1: Review of Studies and Reports*, a 1998 performance audit by Booz Allen found that: collective bargaining and dispute resolution processes impacted WSF's day-to-day operations and management and its ability to operate efficiently and effectively; grievances and unfair labor practice charges were disproportionately high compared to other state agencies; and the services provided by the MEC were not fully utilized by WSF management and labor unions. The findings that labor relations adversely affect the ability of WSF to operate effectively and efficiently, and that the organization experiences an extraordinary number of unfair labor practice charges and grievances, remain the case.

4. Outstanding Labor Related Lawsuits

There are two outstanding labor related lawsuits that could impact WSF operating costs: one involving engine room employees and the other licensed deck employees.

a) Engine room employees

On January 6, 2006, a Pierce County superior court judge ruled on a motion for summary judgment that approximately 300 WSF engine room employees were entitled to an award for back pay. The employees claimed that they were entitled to fifteen minutes of overtime pay for "off the clock" work time during watch changes in vessel engine rooms.

The court determined that the workers were entitled to be paid for this time, despite the maritime industry practice of not paying for time spent on this type of activity. The court also doubled the amount of the award based on a state law that entitles employees to double the amount of the withheld wages if the employer acted willfully. The total fiscal impact of the back pay, if the court's judgment is upheld, would be approximately \$7 to \$8 million.

A motion for summary judgment is generally granted only when the court determines that there is no genuine issue of material fact upon which a party can prevail. WSDOT appealed this ruling. The appellate court will hear oral argument on December 8, 2006.

b) Licensed deck employees

A follow-up lawsuit brought on behalf of members of MM&P (licensed deck personnel) has been put in abeyance pending the outcome of the engine room employees' lawsuit. WSF has calculated the potential back pay liability for the class at approximately \$275,000 a year, back to February 2003. If there is a finding of willfulness and an award of double damages, the liability potential is approximately \$550,000 a year.

D. Key Labor Agreement Provisions

The labor agreements that affect WSF operations have a number of provisions that affect WSF cost of operation. These are outlined below.

1. Eight-hour minimum call

Labor agreements call for a minimum eight-hour shift, which prevents WSF from splitting shifts or using shorter calls to meet peak or other scheduling demands. The result is that schedules are in some cases set to accommodate the labor agreement rather than to best meet customer demand.

2. Overtime Pay

Overtime pay represents 8 percent annual of total labor wages paid by WSF in FY 1996 through FY 2006. Seventy percent of overtime expense is incurred by vessel staff, followed by maintenance staff at 18 percent and terminals at 10 percent. See Table 22.

Table 22. Overtime Costs

(\$000s)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
OT	5,498	6,295	7,572	7,451	7,929	8,171	8,152	7,378	7,011	7,353	7,644	80,453
Pay	81,176	82,312	89,032	94,034	99,071	103,056	104,253	103,082	101,146	102,891	108,286	1,068,340
% OT	7%	8%	9%	8%	8%	8%	8%	7%	7%	7%	7%	8%
Vessels	3,539	4,258	5,443	5,583	5,892	5,864	5,650	5,260	4,653	5,115	5,316	56,573
Maint.	1,005	1,048	1,265	1,003	1,214	1,496	1,670	1,355	1,549	1,439	1,576	14,620
Terminals	897	897	814	788	695	681	701	616	669	635	640	8,033
Admin.	57	92	49	76	128	130	131	147	141	165	112	1,228
%												
Vessels	64%	68%	72%	75%	74%	72%	69%	71%	66%	70%	70%	70%
% Maint.	18%	17%	17%	13%	15%	18%	20%	18%	22%	20%	21%	18%
%												
Terminals	16%	14%	11%	11%	9%	8%	9%	8%	10%	9%	8%	10%
%												
Admin..	1%	1%	1%	1%	2%	2%	2%	2%	2%	2%	1%	2%

Key provisions of labor agreements that affect WSF's overtime costs include:

- *Double-time pay*: Staff are paid overtime at double their normal rate of pay rather than at time-and-a-half, as other state employees are paid.
- *Triple-time pay*: Triple-time is paid for hours worked past 16 consecutive hours, unless a six-hour break is provided.
- *Pay increments*: Staff are:
 - Staff are paid a full hour of overtime if they work over more than 15 minutes, and 0.25 hour if over by 1 to 15 minutes.
 - Entitled to pay in one hour increments if required to report before the start of a shift or called back to work.
 - Entitled to overtime for eight hours if called back to work after they have completed a scheduled shift and been released prior to starting the next scheduled shift.
- *Days off*: Staff are paid eight hours' overtime if required to work on a scheduled day off. Employees at Eagle Harbor working on a Saturday or Sunday are paid overtime for the hours worked.
- *Mileage reimbursement for use of private automobile*: Employees receive mileage reimbursement for the use of a private automobile for travel.

3. Travel Time

Travel time pay represents between 2 and 3 percent of annual total labor wages paid by WSF from FY 1996 through FY 2006. Most of the travel time expense is incurred by vessel staff, varying from 81 percent to 91 percent of annual overtime costs in FY 1996 through FY 2006. See Table 23.

Table 23. Travel Time Costs

	(\$000s)											
	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
TT	1,727	2,010	2,484	2,489	2,595	2,834	2,943	2,944	2,796	2,729	3,166	28,718
Pay	81,176	82,312	89,032	94,034	99,071	103,056	104,253	103,082	101,146	102,891	108,286	1,068,340
% TT	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	3%	3%
Vessels	1,403	1,708	2,149	2,189	2,278	2,484	2,631	2,681	2,542	2,456	2,794	25,316
Maint.	208	184	215	179	202	210	170	133	141	153	252	2,046
Terminals	116	118	120	121	115	140	141	130	117	117	118	1,355
Admin.	0	0	0	0	0	0	0	0	0	0	1	2
% Vessels	81%	85%	86%	88%	88%	88%	89%	91%	91%	90%	88%	88%
% Maint.	12%	9%	9%	7%	8%	7%	6%	5%	5%	6%	8%	7%
% Terminals	7%	6%	5%	5%	4%	5%	5%	4%	4%	4%	4%	5%
% Admin.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Key provisions of the labor agreements that affect travel time costs have their basis in the assignment of employees to a home base or terminal.

- *Travel between terminals:* Employees receive travel time and mileage when required to travel between terminals.
- *Relief assignments:* Employees assigned to more than one terminal are assigned a relieving terminal and paid travel time between the relieving terminal and the terminal nearest to the employee's home.
- *Eagle Harbor:* Eagle Harbor employees are paid travel overtime if they travel outside of scheduled work hours and are entitled to travel pay on work days if required for their job or for training.
- *Deadheading:* Employees are entitled to travel pay if not relieved from same terminal of commencement (deadheading).
- *San Juans and Port Townsend-Keystone Routes:* Permanently assigned employees on the San Juan-Anacortes-Sidney or the Port Townsend-Keystone routes are paid travel pay for one round trip per week, calculated from the terminal closest to the employee's residence. In addition, regular employees permanently assigned to the Inter-Island vessel route are paid daily travel time from Anacortes to Friday Harbor. This allowance is three-and-a-half (3½) hours roundtrip per day. Payment is for travel actually performed; employees staying in state-provided facilities in Friday Harbor are not entitled to daily travel pay.
- *Assignment to maintenance yard:* Staff assigned to the maintenance yard for more than 30 days are entitled to one round-trip per week if they elect not to stay in employer furnished quarters.

4. Penalty Pay

Penalty pay represents 1 percent of the total labor wages paid by WSF in FY 1996 through FY 2006. Seventy-five percent of penalty pay goes to vessel staff, and 25 percent to Eagle Harbor maintenance staff. See Table 24.

Table 24. Penalty Pay
(\$000s)

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
PP	768	811	878	999	1,135	1,308	1,408	1,278	1,274	1,323	1,401	12,584
Pay	81,176	82,312	89,032	94,034	99,071	103,056	104,253	103,082	101,146	102,891	108,286	1,068,340
% PP	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Vessels	561	597	663	785	886	981	994	1,034	986	977	1,016	9,480
Maint.	205	212	214	212	247	324	411	241	285	343	383	3,076
Terminals	2	2	2	2	2	3	3	3	4	3	2	28
Admin.	0	0	0	0	0	0	0	0	0	0	0	0
% Vessels	73%	74%	75%	79%	78%	75%	71%	81%	77%	74%	73%	75%
% Maint.	27%	26%	24%	21%	22%	25%	29%	19%	22%	26%	27%	24%
% Terminals	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Admin.	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Penalty pay, at an additional rate per hour, is paid under the labor agreements when employees are required to perform particular work. Specific examples include:

- *Eagle Harbor*: Employees receive penalty pay if required: to come into contact with asbestos, fiberglass, mineral wool, animal/avian feces; to work in tanks, bilges, or under floor plates where oil or water has accumulated, inside boilers or in sewage tanks; to lift tanks; or to come in contact with sewage.
- *MEBA*: Employees receive penalty pay if working in confined spaces or using power tools.

5. Minimum Staffing Provisions

Labor agreements require staffing on vessels beyond those required by the Coast Guard. There are instances where WSF is required to staff beyond Coast Guard requirements and beyond what WSF would do because of labor agreements. Nine percent of vessel crewing and 7 percent of costs included in this analysis are the result of labor union requirements at a cost estimated at \$4.1 million annually.

Labor staffing requirements are established by type of vessel, with 13 of WSF's 23 auto-passenger vessels in active service requiring additional staffing in addition to the only passenger-only ferry still in active service. See Table 25.

Table 25. Labor Agreement Staffing

Route	Vessel Class	Coast Guard	CBA	Total	% CBA	Collective Bargaining Agreement-Required Staffing	Cost * (\$000)	Cost
Seattle/Bremerton	Super	11	3	14	21%	2 Ordinary Seaman - IBU/1 Asst. Eng. MEBA	542	19 %
Seattle/Bremerton	Jumbo	13	1	14	7%	1 Ordinary Seaman - IBU	52	5%
Seattle/Bremerton	Iss. 130	10	1	11	9%	1Bos'n-IBU Upgrade**	224	8%
Seattle/Bainbridge	Mark II	15	0	15	0%			
Seattle/Bainbridge	Mark II	15	0	15	0%			
Faunt/Vashon/South	Iss. 130	10	1	11	9%	1 Bos'n-IBU Upgrade**	302	8%
Faunt/Vashon/South	Ever.	10	1	11	9%	1 Ordinary Seaman - IBU	195	6%
Faunt/Vashon/South	Ever.	10	1	11	9%	1 Ordinary Seaman - IBU	168	6%
Seattle-Vashon POF	POF	4	1	5	20%	1 Asst. Eng. MEBA	98	21 %
Pt. Defiance-Tahl.	Rhod.	8	0	8	0%			
Edmonds-Kingston	Mark II	15	0	15	0%			
Edmonds-Kingston	Jumbo	13	1	14	7%	1 Ordinary Seaman - IBU	195	5%
Mukilteo-Clinton	Iss. 130	10	1	11	9%	1 Bos'n-IBU Upgrade**	286	8%
Mukilteo-Clinton	Iss. 130	10	1	11	9%	1 Bos'n-IBU Upgrade**	228	7%
Pt. Townsend-Key	Steel E.	8	0	8	0%			
Pt. Townsend-Key	Steel E.	8	0	8	0%			
Anacortes-S.J. Islands	Super	11	3	14	21%	2 Ordinary Seaman - IBU/1 Asst. Eng. MEBA	829	20 %
Anacortes-S.J. Islands	Super	11	3	14	21%	2 Ordinary Seaman - IBU/1 Asst. Eng. MEBA	699	21 %
Anacortes-S.J. Islands	Super	11	3	14	21%	2 Ordinary Seaman - IBU/1 Asst. Eng. MEBA	171	22 %
Anacortes-S.J. Islands	Issaq.	10	0	10	0%			
San Juans Interisland	Steel E.	8	0	8	0%			
Anacortes-Sidney	Super	10	2	12	17%	2 Ordinary Seaman - IBU	148	14 %
		231	23	254	9%		4,137	7%

* Cost weighted to include overtime, penalty pay and travel time.

** Additional crew member is an ordinary seaman (OS); a Dec. 2005 arbitration decision required additional pay for the most senior able bodied seaman (ab-bos'n). Previous to the decision WSF only used Bos'ns on car carrying ferries that had upper decks. The decision required a Bos'n on all car carrying boats because of responsibility changes determined by the arbiter which apply to all car carrying ferries.

Source: WSF, July 12, 2006

The routes most heavily affected by extra staffing include some of those with the lowest farebox recovery rates, particularly Seattle-Bremerton, the Southworth-Vashon-Fauntleroy, Vashon POF, and Anacortes based routes, as shown in Table 26.

Table 26. Extra Staffing & Effect on Farebox Recovery
(000s)

	Extra Staffing Cost	2005 Farebox Recovery	Est. Rate w/o Extra Staffing
Bremerton	931	51%	54%
Fauntleroy-Vashon-Southworth	700	58%	59%
Vashon POF	98	23%	24%
Edmonds-Kingston	195	108%	109%
Mukilteo-Clinton	575	97%	101%
Anacortes-San Juans	1,699	49%	51%
Anacortes-Sidney	148	73%	76%
Total Systemwide	4,346	76%	77%

Notes: Cost are in 2006 dollars

6. Other Provisions

Other non-salary provisions in the labor agreements affect WSF's operating costs or represent lost revenues. These include additional paid holidays, half-price meals on vessels, uniforms and jackets, schooling, crew minimum staffing, and ferry passes. These provisions have an estimated cost of \$3.0 million a year, of which \$1 million represents foregone revenue. See Table 27.

Table 27. Costs of Miscellaneous Contract Provisions
(\$000s)

Contract Provision	Est. Annual Cost
Two paid holidays in addition to state holidays (all bargaining units).	650
Half-price meals on vessels (for 8 bargaining units)	185
Uniforms and jackets (for 5 bargaining units). <i>(Note: Costs vary depending on the vendor and on negotiated contract prices. WSF indicates Correctional Industries will handle the uniform contract in the near future.)</i>	500
Schooling - Includes tuition reimbursement or schooling allowance and paid leave; for licenses and/or qualifications pertaining to WSF operations (5 bargaining units).	540
Crew minimum staffing - If minimum staffing identified in labor contract is not met, the wages of the missing position are divided among the employees performing the work (1 bargaining unit).	38
Ferry passes on a space-available basis - Annual pass for employee and vehicle, spouse, and dependents after six months of employment; additional vehicle pass for spouse after 2 years; annual passes for retirees and family (for all bargaining units). WSF non-maritime union employees are provided ferry passes during their time of employment at WSF. The cost estimate represents the amount of fares that would have been collected if employees and families were charged for trips, based on the frequent user, off-peak fare. WSF does not separately track trips taken by employees during business hours versus trips taken off-duty or by family members or retirees.	1,070

Contract Provision	Est. Annual Cost
Employees may accumulate up to 320 hours of vacation leave (6 bargaining units).	n/a
Total Cost	2,983

Source: WSF, except ferry cost calculated by legislative staff based on WSF data on number of passes per run.

7. Scheduling

Contracts for some of the maritime bargaining units also affect how WSF schedules staff for vessels, terminals and the Eagle Harbor repair facility. This can lead to increased overtime and travel pay.

a) Vessel and terminal staffing

- *Scheduling* – Schedules for terminals and vessels are developed based on individual labor contract specifications. For MMP&P and IBU, WSF develops schedules for permanent positions once each season, or four times a year, which is referred to as a bidding process. For MMP&P and IBU, temporary positions are bid every two weeks. WSF must award positions based on seniority. Employees represented by MM&P and IBU that hold permanent positions with WSF can also bid on temporary positions. MEBA positions are not bid, as employees are assigned permanently to a particular boat; temporary MEBA positions are filled by licensed/unlicensed employees working on the same boat, by reassigning vacation relief employees, or by the use of qualified employees who are dispatched through the MEBA hiring hall.
- *Vacation* – WSF sets vacation schedules for employees represented by MM&P, IBU, and MEBA based on a similar bidding process.
 - *Planned blocks of vacation* - Employees bid for blocks of vacation one year in advance (forty- or eighty-hour blocks, depending on union). Vacation awards are based on seniority.
 - *Individual vacation days* - For MM&P employees, an individual day off can be requested as a compensatory day (compensatory days are received for such things as working holidays in lieu of overtime or working on a scheduled day off). For IBU employees, an individual vacation day can only be taken if an employee is awarded his or her full eighty-hour block of vacation. For both bargaining units, employees who call in sick may turn in a leave slip for vacation time. (Individual vacation days apply to IBU only. MM&P does the vacation schedule for the entire year.)
- *Relief positions* - Relief employees fill shifts left vacant by employees taking vacation, compensatory, or sick leave; or by employees on leave for training or boat moves. Relief positions must be awarded based on seniority. (MEBA employees are not relieved for boat moves as they move with the boat.) Relief employees are paid travel time and mileage from their home port to the job.

b) Eagle Harbor repair facility staffing

WSF's Eagle Harbor repair facility has approximately 115 employees consisting of skilled laborers, craft persons and management staff. The majority of employees are represented by the Metal Trades Council, with approximately 15 employees represented by IBU.

- *Filling permanent positions* - Non-management staff are hired in coordination with the appropriate labor union, based on seniority and a review of qualifications by WSF.
- *Assigning Eagle Harbor staff to vessels and terminals* - Eagle Harbor staff are called out to handle routine maintenance, emergency repairs, and capital work on terminals and vessels. Work assignments are coordinated through two general foremen.
- *Operating and capital cost assignments* - Eagle Harbor staffing costs are charged to WSF's operating or capital program based on the type of work performed. Work requisitions are developed for each scope of work or requested activity. Requisitions categorized as routine maintenance are charged to the operating program, and work for items categorized as emergency repair or capital are charged to the capital program. Over the last two years, WSF has integrated the work requisition process into the budget monitoring process, and developed a process to audit these cost assignments.

E. Vessel Labor Costs

Vessel labor is 67 percent of all labor costs and is the most impacted by overtime, travel time and penalty pay provisions. Vessel labor costs are also increased by the extra staffing required under the labor agreements beyond that required by Coast Guard regulations.

Overtime, travel time and penalty pay were 13 percent of total vessel staffing costs from FY 1996 through FY 2006. See Table 28.

Table 28. Vessel Staffing Costs

(\$000s)												
Year	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	Total
Regular	49,156	49,256	51,450	55,551	58,461	59,964	60,350	59,934	58,310	58,426	62,755	623,611
Over-time	3,539	4,258	5,443	5,583	5,892	5,864	5,650	5,260	4,653	5,115	5,316	56,573
Penalty pay	561	597	663	785	886	981	994	1,034	986	977	1,016	9,480
Travel time	1,403	1,708	2,149	2,189	2,278	2,484	2,631	2,681	2,542	2,456	2,794	25,316
Total	54,658	55,818	59,705	64,109	67,517	69,293	69,624	68,909	66,490	66,974	71,881	714,979
% OT	6%	8%	9%	9%	9%	8%	8%	8%	7%	8%	7%	8%
% PP	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	1%	1%
% TT	3%	3%	4%	3%	3%	4%	4%	4%	4%	4%	4%	4%
Total	10%	12%	14%	13%	13%	13%	13%	13%	12%	13%	13%	13%

F. Impact of Recent Labor Agreements and Settlements

The transfer of responsibility for labor negotiations from WSF to the Governor's office has resulted in settlement of all outstanding labor agreements, some of which have been outstanding since the 2003-05 biennium. These combined with various arbitration agreements will result in increased labor cost for WSF of \$8.9 million in FY 2007 with an ongoing biennial cost of \$8.6 million. Additionally, negotiated 2007-09 labor contracts will result in

increased labor costs for WSF of \$17 million in the 2007-09 biennium with an ongoing biennial cost of \$19.1 million.

Table 29. 2007-09 Labor Contract Costs Increases

(\$000s)		
Negotiated Item	2007-09 Costs)	Ongoing Costs
1.6% Salary increase for all bargaining units effective 7-1-2007	3,123	3,123
3.2% Salary increase for all bargaining units effective 7-1-2007	6,346	6,346
2% Salary increase for all bargaining units effective 7-1-2008	2,047	4,093
Marine Employees Commission salary survey adjustment for all bargaining units	5,342	5,390
Increase in shift differential pay for MM&P operations watch supervisors	2	2
Increase in state's contribution to training school for MEBA	50	50
Increase in the amount of meal purchases eligible for discount on vessels for IBU	135	135
Total	\$17,045	\$19,139

Table 30. 2001-03 through 2005-07 Labor Contract Costs Increases

	2005-07 Costs	Ongoing Costs
Arbitration Decisions		
03-05 IBU - 1.7% wage increase effective July 1, 2004	1,820	1,250
03-05 IBU - comp time in lieu of overtime	570	570
05-07 IBU - 2.4% wage Increase	920	1,860
05-07 IBU - quartermaster wage increase	110	250
05-07 IBU - wage supplement for injuries on vessels (Jones Act)	100	230
Subtotal	3,520	4,160
Negotiated Agreements		
03-05 MEBA - wage increase for licensed staff chief engineer, and chief engineer, assistant engineer; unlicensed oiler and wiper	2,940	3,160
03-05 Metal Trades - wage Increase 3% effective July 1, 2003	760	400
05-07 Metal Trades - wage Increase 1.2% effective July 1, 2006	80	160
05-07 MM&P - buyback of previously negotiated vacation accrual increase	430	510
MM&P - Staff master wage increase for additional responsibilities	110	110
SEIU - 3% wage increase effective July 1, 2005	10	10
05-07 MM&P - wage increase for operations watch supervisors	40	50
Subtotal	4,370	4,400
Other Labor Agreements/Miscellaneous Issues		
Interest on retroactive wage payments	540	
Settlement on MEC case re: galley service	400	
Technical adjustments for previously awarded items for OPEIU		60
Subtotal	980	60
TOTAL	8,870	8,620

Section Seven Fuel Costs

Fuel is projected in the 2006 legislative plan to be 21 percent of WSF expenses from the 2005-07 through the 2019-21 biennium. Fuel expenses have grown from \$52.1 million in 2003-05 to a projected \$75.3 million in 2005-07 as a result of rising fuel prices, a 45 percent increase. This projection was based on the February 2006 fuel forecast.

An updated forecast in September 2006 has modified this budget (see Table 31). The September forecast is that fuel prices will stabilize and begin to decrease from a peak of \$2.47 per gallon in FY 2008 to a low of \$1.96 per gallon in FY 2013. Consumption is assumed to be constant at 17.7 million gallons per year – assuming that changes such as replacing the Steel Electric vessels with the new 144-vehicle vessels and eliminating POF service will not result in a net change in fuel consumption.

Table 31. Fuel Costs 2006 Legislative Plan & Revised

(millions of \$s and gallons)

	2005-07	2007-09	2009-11	2011-13	2013-15	2015-17	2017-19	2019-21	2005-21
FY 2006 Legislative Plan	75.3	77.6	80.4	83.6	86.9	90.4	94.0	97.8	686.0
Revised forecast									
Budgeted gallons	35.4	35.4	35.4	35.4	35.4	35.4	35.4	35.4	283.2
Price/gallon Sept. forecast*	\$2.21	\$2.42	\$2.20	\$2.07	\$1.98	\$2.01	\$2.05	\$2.10	\$2.13
Cost before taxes	78.2	85.8	77.8	73.4	70.1	71	72.6	74.4	603.3
Taxes & fees	7.2	7.8	7.1	6.7	6.5	6.6	6.7	6.9	55.5
Revised Fuel Cost	85.4	93.6	84.9	80.1	76.6	77.6	79.3	81.3	658.8
Net	10.1	16.0	4.5	-3.5	-10.3	-12.8	-14.7	-16.5	-27.2
* Average of two years									

Ferry vessel fuel expenditures are calculated as follows:

- WSDOT's Financial Planning Office starts with Global Insight's quarterly producer price index (PPI) for refined petroleum products.
- When WSDOT receives the Global Insight data, it has been adjusted to take out seasonal fuel price factors. WSDOT adds seasonal price sensitivity factors back into the index, using Bureau of Labor Statistics data (for example, wholesale fuel prices are 7.9 percent higher in August and 1.7 percent lower in January).
- The relationship between historical actual monthly fuel prices (provided by WSF) and U.S. wholesale figures is analyzed. Over a twelve year period, Washington wholesale prices have been 5.5 percent higher than U.S. wholesale prices.
- The adjusted Global Insight index is applied to the last U.S. wholesale price.
- The results are then further adjusted by the difference between Washington and U.S. wholesale prices.

- WSF takes the results of the pricing forecast and applies it to forecasted fuel consumption (gallons).
- WSF then applies sales and use taxes to estimate vessel fuel expenditures.

As of September 2006, the Transportation Revenue Forecast includes fuel price forecasts. Prior to September, the fuel price forecasts were calculated somewhat differently: (1) the Global Insight index was not adjusted to put back in the seasonality, and (2) the adjusted index was applied to the last Washington wholesale price.

While these fuel expenditure forecasts have been available for some time, they have not been incorporated in the financial plans of WSDOT, the Legislature, or the Office of Financial Management (OFM). Instead, the fuel appropriation has been inflated by U.S. Department of Commerce, Bureau of Economic Analysis's Implicit Price Deflator for Personal Consumption (IPD-PC).

In the 2006 legislation session, Substitute Senate Bill 6241 directed WSDOT, OFM, and the Washington State Economic Revenue Forecast Council to review and adopt a method of forecasting fuel prices. The WSF Finance Study is to report on the progress and results of this study as it relates to WSF fuel expenditures. While the fuel study group did review the current fuel price forecasting methodology, they did not recommend any changes.

An option identified by legislative staff is to use forecasted fuel expenditures rather than the IPD-PC factor in the financial plan for the Puget Sound Ferry Operations Account because it is tied to predicted fuel costs rather than inflation in general.

Section Eight

Impact of Cost Changes on Operating Fund

The labor cost increases and changes in forecast of fuel prices will affect the Puget Sound Ferries Operations Account, reducing its ability to transfer funds to the capital account. The 2006 legislative plan assumed a transfer to \$518 million to the capital account. Taking into account increased labor costs and taxes of \$180 million, the operating fund will be able to transfer only approximately \$450 million to capital. This projection depends on all other assumptions regarding costs and revenues remaining constant. Since both labor rates and fuel consumption are held constant in the projection, it is likely that in reality the operating fund will not be able to contribute even this reduced amount to capital.

Section Nine Farebox Recovery

Farebox recovery, as used by WSF, shows the percentage of WSF operating costs that are recovered by earned revenues from the farebox and other income. WSF calculates farebox recovery annually in its route statement summaries. In FY 2005 recovery is at 76 percent systemwide, ranging from a low of 23 percent on the Vashon-Seattle passenger only ferry service to a high of 111 percent on the Seattle-Bainbridge route. See Table 32.

Table 32. Farebox Recovery: WSF Route Statements

	FY 1996	FY 1997	FY 1998	FY 1999	FY 2000	FY 2001	FY 2002	FY 2003	FY 2004	FY 2005
Total	68%	65%	65%	66%	66%	59%	69%	73%	79%	76%
Bainbridge	102%	98%	87%	101%	94%	86%	98%	110%	120%	111%
Bremerton*	56%	51%	57%	53%	47%	44%	45%	41%	47%	51%
Edmonds	92%	94%	93%	99%	110%	95%	115%	121%	121%	108%
Clinton	85%	85%	93%	93%	91%	75%	89%	95%	100%	97%
Pt. Townsend	63%	60%	45%	51%	52%	54%	54%	56%	61%	58%
Triangle**	49%	51%	54%	54%	61%	53%	54%	51%	61%	58%
Vashon POF	18%	14%	18%	16%	18%	15%	21%	24%	21%	23%
Pt. Defiance	44%	49%	48%	56%	62%	48%	55%	60%	59%	66%
San Juans	42%	39%	40%	36%	34%	32%	46%	55%	52%	49%
Sidney	78%	72%	65%	74%	107%	69%	72%	76%	82%	73%
* Bremerton Auto-Passenger Ferry Only										
** Fauntleroy-Vashon-Southworth routes										

The farebox recovery rate as calculated in the route summary statements includes most WSF operating costs. (The legislature has directed that WSF not include costs associated with WSF increased security costs.)

WSF has not historically calculated the percentage of total earned income against total ferry expenses including expenses incurred by WSP, MEC, and WSDOT. (Some but not all WSDOT expenses are included in the route summary statements.) WSF has also not shown the percent of direct tax support against operating costs.

Legislative staff have calculated these additional recovery percentages on a biennium basis. Their analysis shows that for the 2005-07 biennium, earned income is projected to be 72 percent of WSF operating costs (farebox 70 percent and other income 2 percent) and direct tax support 13 percent. Earned income as a percentage of all ferry costs is expected to be 67 percent, with direct tax support providing an additional 12 percent. See Table 33.

Table 33. Recovery Rates: WSF and All Ferry Related Costs

	1995- 97	1997- 99	1999- 01	2001- 03	2003- 05	2005- 07	2007- 09	2009- 11	2011- 13	2013- 15	2015- 17	2017- 19	2019- 21
% of WSF Operating Costs (2007 labor & fuel projection)													
Farebox	67%	67%	64%	74%	79%	70%	76%	85%	92%	98%	103%	108%	113%
Other Income	3%	2%	-1%	-1%	2%	2%	2%	2%	2%	2%	3%	3%	3%
Total % Earned	70%	69%	63%	73%	80%	72%	78%	87%	94%	100%	105%	110%	116%
Direct Tax %	40%	40%	20%	15%	15%	13%	15%	16%	16%	17%	17%	17%	17%
Total	109%	110%	83%	89%	95%	85%	93%	103%	110%	117%	122%	127%	133%
% Of Total Costs* (2007 labor & fuel projection)													
Farebox	64%	66%	61%	71%	73%	65%	70%	78%	84%	90%	95%	99%	104%
Other Income	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Total % Earned	65%	67%	62%	72%	74%	67%	72%	79%	86%	91%	96%	100%	105%
Direct Tax %	38%	39%	19%	15%	14%	12%	13%	15%	15%	15%	16%	16%	16%
Total	103%	106%	81%	86%	88%	79%	85%	94%	101%	107%	111%	116%	121%
* Includes WSP, WSDOT, and MEC costs													

Section Ten

Consultants Observations and Recommendations

The consultants have reviewed legislative staffs' analysis of the WSF operating budget and added some additional analyses. Based on this review the consultants offer the following observations and recommendations for consideration by the legislature. These recommendations are based on the goals established in SSB 6241, which mandated this ferry financing study, and include:

- Creating predictable cash flows for WSF.
- Creating greater transparency for the legislature and members of the public.
- Suggesting performance measures for WSF operations.

Following are consultant observations and recommendations on the transfers of operating funds to the capital account, earned revenue, and expense projections and control.

A. Operating Transfers to Capital

The 2006 legislative financial plan and WSF's Draft Long-Range Strategic Plan both assume significant capital funding from operations. The 2006 legislative plan anticipates \$518 million being transferred from operating to capital through 2021. The Draft Long-Range Strategic Plan assumes that \$925.5 million will be transferred through 2029, which represents 18 percent of the draft plan's total projected capital funding.

1. Consultant Findings

a) Availability of operating funds for capital

As discussed in Section 9 of this report, the availability of operating funds to support the capital program is impacted by rising labor costs and the volatility of fuel costs. Labor and fuel represent approximately 80 percent of WSF operating expenses. The September 2006 fuel forecast suggests the availability of operating funds in the legislative plan will be reduced from \$518 million to approximately \$450 million, assuming all other revenues and expenses remain unchanged.

The legislature's 2006 financial plan and WSF's Draft Long-Range Strategic Plan inflates future labor costs at 70 percent of inflation (using the implicit price deflator for personal consumption (IPDPC) rate). The state does not forecast labor expense increases beyond this inflation rate or beyond costs that have been negotiated. The inability to accurately forecast labor means that the operating budget projections are likely significantly understated. This makes it unlikely, absent higher rate increases, service reductions, or the transfer of additional motor vehicle taxes, that surplus operating funds will be available to transfer to the capital account at the forecast level.

b) Operating reserves

The WSF operating account retains a \$5 million reserve. This reserve is a minimum fund balance and provides no additional operating reserves. This is approximately 1 percent of ferry operating expenses. The reserve cannot grow when the operating surplus is transferred

to fund the capital account. The transfer makes operating funding less stable, since if earned and dedicated tax revenues in one biennium exceed expenses, the surplus is not available to compensate for shortfalls in subsequent biennia. As a matter of policy the legislature has been reluctant to establish reserves because they are hard to maintain during lean budget years. This decision makes for less stable operational funding for ferries which, unlike the rest of WSDOT, is highly dependent on earned revenue.

c) Intent of dedicated tax revenues

The legislature has dedicated a portion of the motor vehicle fuel tax and other license, permit, and fee income to ferry operations. RCW 47.60.326 states that the WSTC may consider “the amount of subsidy available to the ferry system for maintenance and operation” in setting rates. The transfer of dedicated tax revenues to capital would appear to negate the intent of dedicating tax revenues to support operations.

d) Farebox and other earned revenue

As projected in the 2006 legislative financial plan, the amount transferred from operations to capital includes revenue earned from fares and concessions. If farebox and concession revenue is to be used to support capital, this policy should be clearly stated.

e) Uncertainty in capital funding

The intention to transfer funds from operating to capital makes capital funding, which is recognized as underfunded, subject to the volatility of operating revenues and expenses.

2. Consultant Recommendations

a) Merge capital and operating accounts

If the transfer from operating to capital (or vice-versa) is a policy direction supported by the legislature, then consideration should be given to merging the operating and capital accounts. This would include re-designating the dedicated tax revenues that support WSF as being available for either operating or capital expenses.

b) Do not transfer funds if the accounts are not merged

If the legislature wants to maintain a distinction between the operating and capital accounts, the consultants recommend that funds not be transferred between the accounts.

c) Operating reserve

In either event, the consultant recommends that WSF have larger operating reserves. A 1 percent reserve is insufficient for an enterprise with 75 percent or greater earned income and results in less stable operating funding. The consultants do not have a specific reserve recommendation.

B. Tariffs and other Earned Income

WSF earns over 75 percent of its revenue from fares, concessions, and other income. The most significant revenue is from the farebox. Tariff policies, in addition to being critical for revenue generation, also play a key role in traffic demand management and in the potential to increase revenue by increasing non-peak usage of the ferries. Other earned income from concessions, parking, advertising, and other sources generates 1 to 2 percent of WSF operating revenue.

1. Consultant Findings

a) Legislative guidance

The legislature has provided limited guidance on tariff policy. RCW 47.60.326 includes ten considerations that the WSTC may make with regards to setting tariffs, but does not require any of them to be considered. The law also does not prioritize the areas the WSTC may consider. The 2006 legislative financial plan assumed future yearly fare increases of 2.5 percent, which may not be sufficient to meet future operating expenses.

b) Tariff Policy Committee

The Tariff Policy Committee (TPC) was created by the Washington State Transportation Commission (WSTC) at a time when the Commission had administrative responsibility for WSDOT. The role of the WSTC was changed by the 2005 Legislature, with responsibility for hiring and firing the Secretary of Transportation and providing management direction for WSDOT transferred from the Commission to the Governor. The WSTC remains responsible for tolling, preparation of the Washington State Transportation Plan, bond sales, highway classification, freight and goods transportation system designation, and preparation of a ten-year investment program. The TPC includes elected officials which makes it more difficult to separate the legislature from independent tariff decisions by the WSTC.

c) Public Outreach

RCW 47.60.000 establishes public participation requirements for major service reductions or expansions and for tariff changes. The law provides the option of public hearings in local communities or a survey of affected ferry users, and requires consultation with the Ferry Advisory Committees. The TPC has conducted public hearings rather than undertaking a survey of affected ferry users. The result is that the TPC hears from and is affected by organized groups of ferry users, but has limited information on the broad base of ferry users.

d) Tariff route equity/travel shed differences

A key concept that the TPC uses in making fare decisions is tariff route equity. The concepts that underpin the tariff route equity program are reasonable, i.e. that users should share equally in covering the fixed costs of ferry system operation and contribute proportionally for vessel space and time. Under this program, rates are set for the central Sound routes, rounded to the nearest nickel, and then applied on a percentage basis to the other routes.

The tariff route equity concept does not allow for recognition of the differences in the travel sheds served by WSF. Three of the travel sheds, Keystone-Port Townsend, Anacortes-San Juan Island, and Anacortes-Sidney, are heavily dependent on tourists with a limited or non-existent commuter base. In contrast, commuters are the core of riders in central Puget Sound.

Tariff route equity affects farebox recovery. This is most apparent with the Bremerton route, which had a 51 percent farebox recovery rate in FY 2005. As shown in Exhibit C, tariff route equity has been modified to account for travel within travel sheds that have more than one route in the shed. This is done to discourage riders from changing routes within a travel shed. If not modified for the travel shed, rates on the Bremerton route would be 33% higher. If the Bremerton rates were higher, it might cause a transfer of ridership to the Bainbridge or other routes, but it might also improve Bremerton's farebox recovery rate.

**Table 34. Tariff Route Equity
Third Step – Travel Shed Adjustment**

	One-Way Travel Time	Relation to Bainbridge	One- Way Fare	Distanced Base Fare	Adjust for Travel Shed	% Adjustment
Central Puget Sound						
Edmonds-Kingston	36.5	0.77	\$6.50	\$5.25	\$6.50	24%
Seattle-Bremerton	60	1.46	\$6.50	\$9.75	\$6.50	-33%
Seattle-Bainbridge	47.2	1	6.5	\$6.50	\$6.50	0%
South Travel Shed						
Southworth-Vashon	25.7	0.54	4.5	\$3.75	\$4.25	13%
Fauntleroy-Vashon	30.1	0.54	4.5	\$4.25	\$4.25	0%
Point Defiance-Tahlequah	25.4	0.54	4.5	\$3.50	\$4.25	21%

Source: Tariff Route Equity Tariff Review 1999-00

e) Traffic demand management

The TPC reviewed tariff based traffic demand strategies during the last tariff review cycle including, congestion pricing, the relationship between vehicle and passenger pricing, and value pricing for passengers based on comparable transit costs. To be most effective, traffic demand and pricing strategies should be tailored to the individual travel sheds, which will require adjustments to tariff route equity. The consultants also note that the TPC has discussed, but not implemented, traffic demand management and pricing policies as ways to improve vehicle occupancy and to transition riders from vehicles to walk-ons. The TPC has not reviewed traffic demand management as a means to encourage off-peak ridership.

f) Non-peak ridership

WSF earns most of its operating revenue from fares and has a largely fixed cost operation, with the cost of operating a vessel the same no matter how many riders are on it. WSF has ample capacity to accommodate increased ridership in non-peak periods. If ridership can be drawn from peak periods it will achieve an important traffic demand goal, and if ridership overall can be increased it will help achieve greater revenues. British Columbia Ferries, for example, engages in promotional partnerships with hotels and other entities to encourage off-peak ridership.

g) Farebox recovery by route

Farebox recovery will vary between routes based on market characteristics and operating costs. Goals for farebox recovery have been discussed on a systemwide basis, with a goal of 80 percent cost recovery recommended by the 2001 Legislative Task Force on Ferries. There is relatively little discussion of individual route farebox recovery rate goals or of ways to improve recovery on a route-by-route basis.

h) Concessions and other revenue

Concessions and other revenues are a small portion of WSF's earned revenue, with the majority of this revenue derived from vessel based concessions, parking, and vending. Some revenue is currently generated from advertising, with WSF assuming more income from an advertising RFP that has not yet been released. In an earlier review of terminal capital

projects, the consultants noted investments planned at Anacortes and elsewhere to generate additional concessions income and discussed their inherent risks.

2. Consultant Recommendations

a) Legislative direction

The legislature should consider providing more specific policy direction on tariffs to the WSTC that would give priority to traffic demand management and market considerations of the individual travel sheds. The legislature should also consider being specific on the role it wants dedicated tax support to play in establishing tariffs. The legislature should not set specific fare increase caps but rather focus on tariff policies.

b) Tariff Policy Committee

The legislature has given the authority to WSTC to establish rates. The consultant recommends that the WSTC examine the role of the TPC given the Commission's new, more limited, role and examine whether elected officials should serve on the TPC if it remains.

c) Public outreach

The legislature should consider requiring a market survey to inform biennial fare decisions. The Ferry Financing Study has previously recommended a market survey to provide more detailed information on vehicle and recreational passengers. This survey could be combined with a survey of tariffs and other measures of customer satisfaction that would help inform tariff and other WSF decisions.

d) Tariff rate equity/travel shed differences

Tariff route equity policies should be re-examined for calibration to traffic demand, value pricing, and farebox recovery goals. The legislature could establish the relative importance of tariff route equity in revising its tariff policy directions.

e) Traffic demand management

Traffic demand strategies that encourage walk-on riders and discourage single-occupant vehicles, as well as those that might spread demand to non-peak periods, should be pursued. Value pricing in comparison to transit system charges within the various travel sheds should also be pursued. The legislature could consider including these strategies in their revised directions.

f) Non-peak ridership

To encourage non-peak ridership, the legislature should consider providing funding to WSF to support marketing and the creation of programs that promote non-peak ridership.

g) Farebox recovery by route

Farebox recovery and ridership goals should be established by route. Achieving these goals will be enhanced if WSF can identify specific individuals in charge of monitoring and achieving these route specific goals. If necessary, the legislature should consider funding such positions.

h) Concessions and other revenue

The consultant recommends that priority be given to increasing non-peak ridership over investing state capital dollars in concessions. This recommendation is not intended to affect private sector capital investments that generate income for WSF, but rather to suggest that the state limit its investment. This will necessitate lease terms sufficient to allow private sector investors to amortize their investments. Terms of up to 55 years have been authorized by the legislature in RCW 47.60.140, which should be ample to amortize investments.

3. Expenses

WSF expenses have grown at an average rate of 9.4 percent per biennium between the 1993-95 and 2005-07 biennia. Full time equivalent positions (FTEs) increased by 9 percent during the same time period. Labor and fuel costs account for approximately 80 percent of WSF's expenses.

1. Findings

a) Expense projections

As noted above, expense projections are understated because the state does not project costs of future labor agreements other than the 70 percent of inflation discussed earlier. Fuel costs are projected based on 100 percent of the same inflation factor. Other expenses are also projected to rise at 70 percent of inflation. The understatement of future expenses for labor creates a distorted picture of the likely operating revenue required to sustain existing service levels.

b) Management control of expenses

Fuel and labor account for nearly 80 percent of WSF operating costs. Ninety-two percent of WSF's employees are covered by labor contracts with binding pay provisions. As a consequence, management has very limited opportunities to manage and control costs.

c) Fixed cost operation

As noted above, WSF has a high fixed cost operation. Coast Guard and union staffing requirements do not vary with passenger levels, with the result that vessels cost the same to operate with one or 2,000 passengers. Terminal costs do vary with ridership, but these costs are a relatively minor part of WSF's operating costs.

d) Projection of costs by route

WSF provides projections of costs at the systemwide level, but limited projections at the route or travel shed level. It is important to understand the variations in cost by route in order to analyze route farebox recovery.

e) Labor agreements

Labor agreements constrain WSF operations and drive additional staffing, overtime, and other costs. The most significant constraint to the WSF operation appears to be the required eight hour minimum shift and inability to operate with split or part-time shifts. This makes responding to peak demands on those routes that experience significant AM and PM peaks more difficult. Also significant are the costs from extra vessel staffing required by labor union agreements that are beyond Coast Guard requirements.

f) Service modifications

One of the ways WSF can control costs is to make service modifications, with the ability to save funds constrained by labor agreement requirements.

The consultants asked WSF to provide an analysis of savings from service reductions. WSF notes that: “Elimination of one or more round trips can have varying degrees of impact on the cost to run the system. For example, eliminating one round trip would likely result in the elimination of the cost of fuel for that trip but no cost savings to the above deck (MM&P, IBU) or below deck (MEBA) crews. Eliminating an 8 hour block of time results in the elimination of the cost of fuel and the above deck crew but not the below deck, as vessels are crewed below deck for 24 hours per day. Only by removing a vessel entirely from service can the full cost savings for fuel and all deck crew be achieved” (WSF response to JTC Finance Question B. 6 September 25, 2006).

For the first four routes profiled below, only fuel savings are realized because the service time reduction is not large enough to affect the eight-hour minimum call provisions. The Port Townsend and Anacortes route service reductions include labor savings as well as fuel savings. WSF comments regarding the likely reaction to these profiled reductions are included.

Table 35. Sample Marginal Savings from Service Reductions

Route	Sailings Cut	Net Annual Savings	WSF Comments
<i>Bainbridge</i>	12:15 a.m. and 1:35 a.m. round trips from Seattle. Monday-Thursday nights year-round	\$150,000	Likely to be unacceptable due to swing shift/night workers.
<i>Fauntleroy</i>	2:10 a.m. sailing from Fauntleroy. Monday-Thursday nights year-round	\$40,000	Likely to be unacceptable due to swing shift/night workers, also late night island access for residents.
<i>Point Defiance/Tahlequah</i>	10:00 p.m. round trip from Pt. Defiance. Monday-Thursday nights year-round	\$15,000	Likely to be unacceptable due to earlier service cuts in 2000 which reduced service four hours/day.
<i>Mukilteo/Clinton</i>	1:05 a.m. round trip from Mukilteo. Monday-Thursday nights fall/winter/spring	\$42,000	Likely to be unacceptable due to swing shift/night workers.
<i>Keystone</i>	6:45 p.m. and 8:30 p.m. round trips from Port Townsend. Monday-Thursday, winter only	\$60,000	Would require additional part-time IBU deck crew positions to achieve full cost savings.
<i>San Juans/Sidney, B.C.</i>	Extension of current 12 week winter schedule to include November and December. Eliminates Sidney service, late afternoon weekday San Juan service, and weekend Interisland vessels for an additional 8 weeks/yr.	\$280,000	Would increase the suspension of B.C. service from current 3 months/year to 5 months and create some capacity in the San Juans during the holiday season.

Source: WSF

2. Recommendations

a) Expense projections

The legislature should use expense projections that assume some allowance for increased labor costs. The consultant recognizes that this raises the potential for establishing a minimum threshold for labor negotiations, but the failure to provide a realistic expense projection hampers understanding of the true nature of WSF's likely operating revenue needs. This affects planning for tariff increases as well as, under current policy, the amount likely to be available for transfer to the capital program.

b) Projection of costs by route

The consultants have recommended above that farebox recovery rate goals by route be established. This will require the projection of costs by routes. The consultants also recommend that the legislature request WSF to consistently provide cost and revenue information by route. Often WSF will provide information, for example, by vessel type, which is less meaningful for legislators and the public than information provided by route.

c) Labor agreements

Priority should be given in collective bargaining to modifications to the eight hour shift and the extra vessel staffing provisions of the agreements. These provisions represent the best opportunity for WSF management to gain more control of costs and scheduling.

APPENDIX A
Fares by Travel Shed - Current Tariff Schedule (May 2006)

Travel Shed	Central Puget Sound		Mukilteo-Clinton		Pt. Townsend-Keystone*		South Sound					Pt. Defiance-Tahlequah**		Anacortes-Sidney		
% of FY 05 Ridership	55%		17%		3%		14%					3%		1%		
Passengers	61%		14%		3%		12%					2%		1%		
Vehicles	47%		20%		3%		17%					4%		1%		
% Farebox Recovery	93%		97%		58%		54%					66%		73%		
							Vashon POF	Vashon& Southworth-Vashon**		Fauntleroy-Southworth						
	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Non-Peak	Peak	Promo
Passenger (round-trip)																
Full Fare	\$6.50		\$3.85		\$5.00		\$8.50	\$4.20		\$5.00		\$4.20		\$31.20		
Senior or Disabled	\$3.25		\$1.90		\$2.50		\$4.25	\$2.10		\$2.50		\$2.10		\$15.60		
Youth Fare	\$5.20		\$3.10		\$4.00		\$7.20	\$3.40		\$4.00		\$3.40		\$25.00		
Bicycle Surcharge	\$1.00		\$1.00		\$1.00		\$1.00	\$1.00		\$1.00		\$1.00		\$8.00	\$12.00	
Vehicle & Driver Fares (under 20') (one-way)																
Regular Fare	\$11.25	\$14.10	\$6.65	\$8.35	\$8.70	\$10.90		\$7.20	\$9.00	\$8.70	\$10.90	\$7.20	\$9.00	\$41.90	\$52.40	
Senior or Disabled Fare	\$9.60	\$12.45	\$5.65	\$7.35	\$7.45	\$9.65		\$6.15	\$7.95	\$7.45	\$9.65	\$6.15	\$7.95	\$34.10	\$44.60	
Over 7'6" Height Surcharge	\$11.25	\$14.10	\$6.65	\$8.35	\$8.70	\$10.90		\$7.20	\$9.00	\$8.70	\$10.90	\$7.20	\$9.00	\$41.90	\$52.40	
Frequent User Books & Passes***																
Frequent User Book-Motorcycle	\$77.60		\$46.40					\$50.00		\$60.00		\$50.00				
Frequent User Book-Vehicle	\$180.00		\$106.40					\$115.20		\$139.20		\$115.20				
Frequent User Book-Passenger	\$52.00		\$30.80				\$72.00	\$33.60		\$40.00		\$33.60				
WSF Monthly Pass-Passenger	\$84.20		\$50.30		\$65.00		\$116.20	\$54.80		\$65.00		\$54.80				
Multi-Ride Commuter Card - Motorcycle					\$60.00											
Multi-Ride Commuter Card - Vehicle					\$139.20											
Multi-Ride Commuter Card - Passenger					\$40.00											
Motorcycle & Driver, Stowage Fee (e.g. canoe, kayak) (one-way)																
Regular Fare	\$4.85	\$6.10	\$2.90	\$3.65	\$3.75	\$4.71		\$3.13	\$3.93	\$3.75	\$4.70	\$3.13	\$3.93	\$20.90	\$26.15	
Senior or Disabled Fare	\$3.20	\$4.45	\$1.90	\$2.65	\$2.50	\$3.45		\$2.08	\$2.88	\$2.50	\$3.45	\$2.08	\$2.88	\$13.10	\$18.35	
Motorcycle Trailer/Sidecar Surcharge	\$1.60	\$2.85	\$1.00	\$1.75	\$1.25	\$2.20		\$1.03	\$1.83	\$1.25	\$2.20	\$1.03	\$1.83	\$5.30	\$10.55	
Vehicle Length Based Fares (one-way)																
20' to under 30' under 7'6" tall	\$16.90	\$21.10	\$10.00	\$12.50	\$13.05	\$16.35		\$10.80	\$13.50	\$13.05	\$16.35	\$10.80	\$13.50	\$62.85	\$78.60	
20' to under 30' over 7'6" tall	\$33.75	\$42.20	\$19.95	\$24.95	\$26.10	\$32.65		\$21.60	\$27.00	\$26.10	\$32.65	\$21.60	\$27.00	\$125.70	\$157.15	
30' to under 40'	\$45.00	\$56.25	\$26.60	\$33.25	\$34.80	\$43.50		\$28.80	\$36.00	\$34.80	\$43.50	\$28.80	\$36.00	\$167.60	\$209.50	\$104.75
40' to under 50'	\$56.25	\$70.35	\$33.25	\$41.60	\$43.50	\$54.40		\$36.00	\$45.00	\$43.50	\$54.40	\$36.00	\$45.00	\$209.50	\$261.90	\$130.95
50' to under 60'	\$67.50	\$84.40	\$39.90	\$49.90	\$52.20	\$65.25		\$43.20	\$54.00	\$52.20	\$65.25	\$43.20	\$54.00	\$251.40	\$314.25	\$157.15
60' to under 70'	\$78.75	\$98.45	\$46.55	\$52.20	\$60.90	\$76.15		\$50.40	\$63.00	\$60.90	\$76.15	\$50.40	\$63.00	\$293.30	\$366.65	\$183.35
70' to under 80'	\$90.00	\$112.50	\$53.20	\$66.50	\$69.60	\$87.00		\$57.60	\$72.00	\$69.60	\$87.00	\$57.60	\$72.00	\$335.20	\$419.00	\$209.50
Cost per ft. Over 80'	\$1.15	\$1.45	\$0.70	\$0.85	\$0.90	\$1.10		\$0.73	\$0.90	\$0.90	\$1.10	\$0.73	\$0.90	\$4.20	\$5.25	\$2.65
# of fares	36		36		36		78					36		39		

* Passenger fares collected one-way ** Vehicle fares collected round trip *** Books sold at half of price shown in San Juans with 10 instead of 20 rides.

** Vehicle fares collected round trip

*** Books sold at half of price shown in the San Juans with 10 instead of 20 rides

Travel Shed	San Juan Island Routes													
% of FY 05 Ridership	7%													
Passengers	7%													
Vehicles	8%													
% Farebox Recovery	49%													
	Anacortes-Lopez Island**				Anacortes-Shaw & Anacortes-Orcas**				Anacortes-Friday Harbor**				Inter-Island	
	Wed-Sat NP	Wed-Sat P	Sun-Tues NP	Sun-Tues P	Wed-Sat NP	Wed-Sat P	Sun-Tues NP	Sun-Tues P	Wed-Sat NP	Wed-Sat P	Sun-Tues NP	Sun-Tues P	Non-Peak	Peak
Passenger (round-trip)														
Full Fare					\$10.65	\$12.80	\$9.60	\$11.55					\$0.00	\$0.00
Senior or Disabled					\$5.30	\$6.40	\$4.80	\$5.75					\$0.00	\$0.00
Youth Fare					\$8.55	\$10.25	\$7.70	\$9.25					\$0.00	\$0.00
Bicycle Surcharge					\$2.00	\$4.00	\$2.00	\$4.00					\$0.00	\$0.00
Vehicle & Driver Fares (under 20') (one-way)														
Regular Fare	\$12.95	\$17.50	\$11.68	\$15.78	\$15.53	\$20.98	\$13.98	\$18.88	\$18.45	\$24.93	\$16.63	\$22.45		
Senior or Disabled Fare	\$10.28	\$14.30	\$9.28	\$12.88	\$12.85	\$17.78	\$11.58	\$15.98	\$15.78	\$21.73	\$14.23	\$19.55	\$7.73	\$9.68
Over 7'6" Height Surcharge	\$12.95	\$17.50	\$11.68	\$15.78	\$15.53	\$20.98	\$13.98	\$18.88	\$18.45	\$24.93	\$16.63	\$22.45		
Frequent User Books & Passes***					\$2.68									
Frequent User Book-Motorcycle														
Frequent User Book-Vehicle														
Frequent User Book-Passenger														
WSF Monthly Pass-Passenger														
Multi-Ride Commuter Card - Motorcycle	\$102.75				\$110.65				\$119.25					
Multi-Ride Commuter Card - Vehicle	\$97.15				\$116.45				\$138.90				\$61.80	
Multi-Ride Commuter Card - Passenger	\$69.25				\$69.25				\$69.25					
Motorcycle & Driver, Stowage Fee (e.g. canoe, kayak) (one-way)														
Regular Fare	\$6.85	\$9.25	\$6.18	\$8.35	\$7.38	\$9.98	\$6.65	\$9.00	\$7.95	\$10.75	\$7.18	\$9.70		
Senior or Disabled Fare	\$4.18	\$6.05	\$3.78	\$5.45	\$4.70	\$6.78	\$4.25	\$6.10	\$5.28	\$7.55	\$4.78	\$6.80	\$2.20	\$2.75
Motorcycle Trailer/Sidecar Surcharge	\$1.53	\$2.85	\$1.38	\$2.58	\$2.05	\$3.58	\$1.85	\$3.23	\$2.63	\$4.35	\$2.38	\$3.93		
Vehicle Length Based Fares (one-way)														
20' to under 30' under 7'6" tall	\$19.43	\$26.23	\$17.53	\$23.65	\$23.30	\$31.45	\$20.98	\$28.30	\$26.68	\$36.00	\$24.00	\$32.40	\$11.60	\$14.50
20' to under 30' over 7'6" tall	\$38.85	\$52.45	\$35.03	\$47.30	\$46.58	\$62.90	\$41.93	\$56.60	\$53.28	\$72.00	\$48.00	\$64.80	\$23.18	\$28.98
30' to under 40'	\$51.80	\$69.95	\$46.70	\$63.05	\$62.10	\$83.85	\$55.90	\$75.48	\$71.10	\$96.00	\$64.00	\$86.40	\$30.90	\$38.63
40' to under 50'	\$64.75	\$87.43	\$58.38	\$78.83	\$77.63	\$104.80	\$69.88	\$94.35	\$88.88	\$120.00	\$80.00	\$108.00	\$38.63	\$48.30
50' to under 60'	\$77.70	\$104.90	\$70.05	\$94.58	\$93.15	\$125.78	\$83.85	\$113.20	\$106.65	\$144.00	\$96.00	\$129.60	\$46.35	\$57.95
60' to under 70'	\$90.65	\$122.40	\$81.73	\$110.35	\$108.50	\$146.73	\$97.83	\$131.20	\$124.43	\$177.98	\$112.00	\$151.20	\$54.08	\$67.60
70' to under 80'	\$103.60	\$139.88	\$93.40	\$126.10	\$124.20	\$167.68	\$111.80	\$150.95	\$142.20	\$191.98	\$128.00	\$172.80	\$61.80	\$77.10
Cost per ft. Over 80'	\$1.30	\$1.75	\$1.18	\$1.58	\$1.58	\$2.10	\$1.40	\$1.90		\$2.40	\$1.60	\$2.18		
# of fares	210													

* Passenger fares collected one-way ** Vehicle fares collected round trip *** Books sold at half of price shown in San Juans with 10 instead of 20 rides.

** Vehicle fares collected round trip

*** Books sold at half of price shown in the San Juans with 10 instead of 20 rides

APPENDIX B

Tariff Route Equity Program



Tariff Route Equity

Tariff Route Equity is the relationship of fares among routes

- ▶ Fare relationships and route groups have been based on the historical fare structure WSF inherited from the Black Ball system in 1951.
- ▶ There is no policy rationale for the current relationship among fares and routes.
- ▶ Long-standing customer concern and confusion has existed about the relationship of fares among routes.

The Tariff Policy Committee's challenge

- ▶ The Washington State Transportation Commission directed the Tariff Policy Committee to develop a policy rationale to relate routes and fares.
- ▶ The Committee has worked since 1998 to develop a methodology.
- ▶ The result is the logical next step of the Tariff Policy Committee's work since the early 1990's when **the cube logic** was introduced.
- ▶ The first building block, **the cube logic**, was developed to relate fares to the space riders use on the boat.
- ▶ The second building block, **tariff route equity**, has been developed to relate fares to the time riders utilize the system.

Current Route Groups

Cross Sound

Edmonds - Kingston
Seattle - Bremerton
Seattle - Bainbridge
Fauntleroy - Southworth
Keystone - Port Townsend

Fares are
common within
the route group

Short Routes

Southworth - Vashon
Fauntleroy - Vashon
Point Defiance - Tahlequah
Mukilteo - Clinton

San Juan Islands

Anacortes - Lopez
Anacortes - Orcas
Anacortes - Shaw
Anacortes - Friday Harbor

Fares differ by
route

International

Anacortes - Sidney
Islands - Sidney

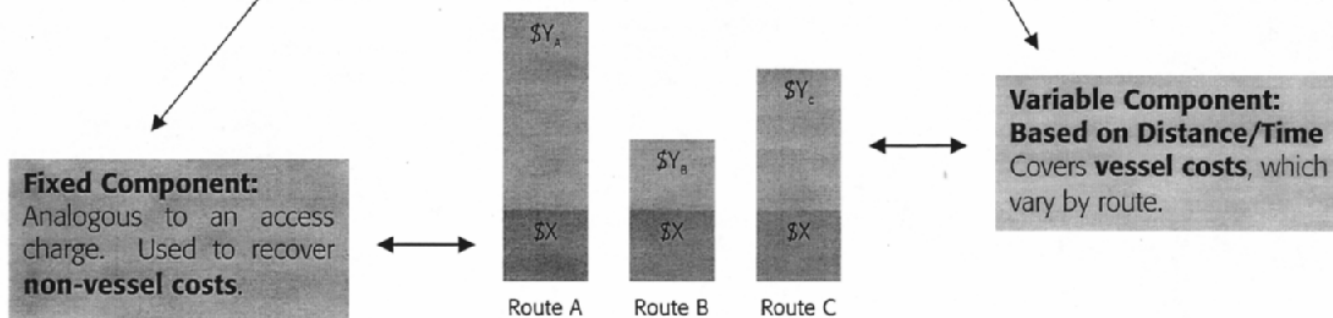


Tariff Route Equity Principles

Tariffs need to recover both fixed and variable costs

Tariff Route Equity is based on two principles.

1. All riders contribute **equally** to the fixed costs of the ferry system.
2. Each rider contributes **proportionally** for the space used and the time occupying space on the vessel.



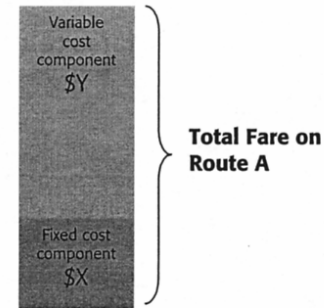


Tariff Route Equity Three-Step Process

Step 1 of 3

Estimate standard travel time for all routes

- ▶ Step 1 sets up the time relationship among routes.
- ▶ The fixed component of service (X) is a 15-minute standard of "terminal time" and 5 minutes of acceleration/deceleration time as a proxy for non-vessel costs across the whole system.
- ▶ The variable component of service (Y) is the non-stop direct distance of the route using a "standard" vessel traveling an average speed (16.5 knots).
- ▶ The distance of the route will vary from the printed schedule because "non-stop direct distance" is used (eliminating stops, such as in the San Juan Islands).
- ▶ All routes "pivot" around the base fare of a route set as the backbone of the system.
- ▶ The Seattle-Bainbridge route was chosen as the "pivot" route because it has the highest ridership, generates the most revenue, and is "central" in the system in terms of time.



Step 1: Standardized Times and "Pivot" Route

	One-Way Travel Time (minutes)	Relation to Bainbridge
Anacortes - Sidney	146.2	3.10
Anacortes - Lopez	54.2	1.15
Anacortes - Orcas	65.2	1.38
Anacortes - Shaw	65.2	1.38
Anacortes - Friday Harbor	77.6	1.64
Edmonds - Kingston	36.5	0.77
Seattle - Bremerton	69.0	1.46
Seattle - Bainbridge	47.2	1.00
Fauntleroy - Southworth	36.1	0.76
Keystone - Port Townsend	35.5	0.75
Southworth - Vashon	25.7	0.54
Fauntleroy - Vashon	30.1	0.64
Point Defiance - Tahlequah	25.4	0.54
Mukilteo - Clinton	27.9	0.59



Tariff Route Equity Three-Step Process

Step 2 of 3

Relate travel time to fares to calculate an unadjusted distance-based fare

- ▶ The starting point for Tariff Route Equity uses the time relationship created in Step 1 to arrive at an unadjusted distance-based fare.
- ▶ The "Step 2" column uses the "Relation to Bainbridge" column to calculate an unadjusted fare based on the time factor.
- ▶ Fares are rounded to the nearest quarter – the same as fares are currently calculated.
- ▶ For example, Keystone-Port Townsend's travel time is 75% of Bainbridge travel time, so $0.75 \times \$6.50 = \4.87 , rounded to the next quarter = \$5.00.
- ▶ Without any other fare considerations, these would be the fares using Tariff Route Equity principles.

Step 2: Calculate Unadjusted Base Fare

Route	Step 1		Current One-Way Fare	Step 2 Calculate Unadjusted Base Fare
	One-Way Travel Time (minutes)	Relation to Bainbridge		
Anacortes - Sidney	146.2	3.10	\$24.75	\$20.25
Anacortes - Lopez	54.2	1.15	\$6.63	\$7.50
Anacortes - Orcas	65.2	1.38	\$7.88	\$9.00
Anacortes - Shaw	65.2	1.38	\$7.88	\$9.00
Anacortes - Friday Harbor	77.6	1.64	\$8.88	\$10.75
Edmonds - Kingston	36.5	0.77	\$6.50	\$5.25
Seattle - Bremerton	69.0	1.46	\$6.50	\$9.75
Seattle - Bainbridge	47.2	1.00	\$6.50	\$6.50
Fauntleroy - Southworth	36.1	0.76	\$6.50	\$5.00
Keystone - Port Townsend	35.5	0.75	\$6.50	\$5.00
Southworth - Vashon	25.7	0.54	\$4.50	\$3.75
Fauntleroy - Vashon	30.1	0.64	\$4.50	\$4.25
Point Defiance - Tahlequah	25.4	0.54	\$4.50	\$3.50
Mukilteo - Clinton	27.9	0.59	\$4.50	\$4.00



Tariff Route Equity Three-Step Process

Step 3 of 3

Adjust Step 2 fares for travel shed considerations

- ▶ Part of Washington State Ferries' mission is to ensure that traffic is reasonably balanced across the system.
- ▶ Step 3 recognizes that riders would substitute travel on one route if fares on nearby, comparable routes cost more or less than another. These areas are defined as travel sheds.
- ▶ Two travel sheds with more than one route serving them were identified; fares will be the same within these travel sheds.
 - Central Sound
 - Vashon Island
- ▶ All other routes are treated independently.

Proposed Route Groupings Based on Travel Sheds	
Central Sound Travel Shed	Independent Travel Shed
Edmonds - Kingston	Fauntleroy - Southworth
Seattle - Bremerton	Keystone - Port Townsend
Seattle - Bainbridge	Mukilteo - Clinton
	Anacortes - Lopez
	Anacortes - Orcas
	Anacortes - Shaw
	Anacortes - Friday Harbor
	Anacortes - Sidney
	Islands-Sidney
Vashon Island Travel Shed	
Southworth - Vashon	
Fauntleroy - Vashon	
Point Defiance - Tahlequah	

Proposed Fares as a Result of Tariff Route Equity

Route	Step 1		Current One-Way Fare	Step 2 Distance-Based Fare	Step 3 Adjust for Travel Sheds
	One-Way Travel Time (in minutes)	Relation to Bainbridge			
Anacortes - Sidney	146.20	3.10	\$24.75	\$20.25	\$20.25
Anacortes - Lopez	54.20	1.15	\$6.63	\$7.50	\$7.50
Anacortes - Orcas	65.20	1.38	\$7.88	\$9.00	\$9.00
Anacortes - Shaw	65.20	1.38	\$7.88	\$9.00	\$9.00
Anacortes - Friday Harbor	77.60	1.64	\$8.88	\$10.75	\$10.75
Edmonds - Kingston	36.50	0.77	\$6.50	\$5.25	\$6.50
Seattle - Bremerton	69.00	1.46	\$6.50	\$9.75	\$6.50
Seattle - Bainbridge	47.20	1.00	\$6.50	\$6.50	\$6.50
Fauntleroy - Southworth	36.10	0.76	\$6.50	\$5.00	\$5.00
Keystone - Port Townsend	35.50	0.75	\$6.50	\$5.00	\$5.00
Southworth - Vashon	25.70	0.54	\$4.50	\$3.75	\$4.25
Fauntleroy - Vashon	30.10	0.64	\$4.50	\$4.25	\$4.25
Point Defiance - Tahlequah	25.40	0.54	\$4.50	\$3.50	\$4.25
Mukilteo - Clinton	27.90	0.59	\$4.50	\$4.00	\$4.00

APPENDIX C

WSF Operating Labor Costs

(\$000's)

	SFY94	SFY95	SFY96	SFY97	SFY98	SFY99	SFY00	SFY01	SFY02	SFY03	SFY04	SFY05	SFY06
<u>VESSEL</u>													
regular	46,322	46,044	49,156	49,256	51,450	55,551	58,461	59,964	60,350	59,934	58,310	58,426	62,755
over-time	3,599	3,529	3,539	4,258	5,443	5,583	5,892	5,864	5,650	5,260	4,653	5,115	5,316
penalty pay	665	580	561	597	663	785	886	981	994	1,034	986	977	1,016
travel time	1,411	1,365	1,403	1,708	2,149	2,189	2,278	2,484	2,631	2,681	2,542	2,456	2,794
total	51,997	51,518	54,658	55,818	59,705	64,109	67,517	69,293	69,624	68,909	66,490	66,974	71,881
over-time as a % of total vessel	7%	7%	6%	8%	9%	9%	9%	8%	8%	8%	7%	8%	7%
penalty pay as a % of total vessel	1%	1%	1%	1%	1%	1%	1%	1%	1%	2%	1%	1%	1%
travel time as a % of total vessel	3%	3%	3%	3%	4%	3%	3%	4%	4%	4%	4%	4%	4%
	11%	11%	10%	12%	14%	13%	13%	13%	13%	13%	12%	13%	13%
"other" pay as a % of total WSF	7%	7%	7%	8%	9%	9%	9%	9%	9%	9%	8%	8%	8%
"regular" pay as a % of regular WSF	68%	67%	67%	67%	66%	67%	67%	66%	66%	66%	65%	64%	65%
"other" pay as a % of "other" WSF	71%	72%	69%	72%	75%	78%	78%	76%	74%	77%	74%	75%	75%
<u>MAINTENANCE</u>													
regular	7,192	7,476	8,335	7,871	10,324	9,896	10,650	11,232	11,867	11,361	11,299	11,776	12,052
over-time	898	829	1,005	1,048	1,265	1,003	1,214	1,496	1,670	1,355	1,549	1,439	1,576
penalty pay	206	188	205	212	214	212	247	324	411	241	285	343	383
travel time	158	168	208	184	215	179	202	210	170	133	141	153	252
total	8,454	8,660	9,753	9,315	12,018	11,290	12,313	13,261	14,119	13,089	13,273	13,711	14,262
over-time as a % of total maintenance	11%	10%	10%	11%	11%	9%	10%	11%	12%	10%	12%	10%	11%
penalty pay as a % of total maintenance	2%	2%	2%	2%	2%	2%	2%	2%	3%	2%	2%	3%	3%
travel time as a % of total maintenance	2%	2%	2%	2%	2%	2%	2%	2%	1%	1%	1%	1%	2%
	15%	14%	15%	16%	14%	12%	14%	15%	16%	13%	15%	14%	15%
"other" pay as a % of total WSF	2%	2%	2%	2%	2%	1%	2%	2%	2%	2%	2%	2%	2%
"regular" pay as a % of regular WSF	10%	11%	11%	11%	13%	12%	12%	12%	13%	12%	13%	13%	13%
"other" pay as a % of "other" WSF	16%	15%	18%	16%	15%	13%	14%	16%	18%	15%	18%	17%	18%

	SFY94	SFY95	SFY96	SFY97	SFY98	SFY99	SFY00	SFY01	SFY02	SFY03	SFY04	SFY05	SFY06
TERMINAL													
regular	11,694	11,728	12,675	12,879	13,780	15,288	15,507	16,392	16,336	15,893	15,904	16,231	17,227
over-time	884	827	897	897	814	788	695	681	701	616	669	635	640
penalty pay	2	2	2	2	2	2	2	3	3	3	4	3	2
travel time	102	104	116	118	120	121	115	140	141	130	117	117	118
total	12,682	12,661	13,690	13,895	14,717	16,200	16,319	17,217	17,181	16,642	16,694	16,986	17,987
over-time as a % of total terminal	7%	7%	7%	6%	6%	5%	4%	4%	4%	4%	4%	4%	4%
penalty pay as a % of total terminal	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
travel time as a % of total terminal	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
	8%	7%	7%	7%	6%	6%	5%	5%	5%	5%	5%	4%	4%
"other" pay as a % of total WSF	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
"regular" pay as a % of regular WSF	17%	17%	17%	18%	18%	18%	18%	18%	18%	17%	18%	18%	18%
"other" pay as a % of "other" WSF	12%	12%	13%	11%	9%	8%	7%	7%	7%	6%	7%	7%	6%

ADMINISTRATION

regular	3,396	3,418	3,017	3,192	2,542	2,360	2,794	3,155	3,197	4,294	4,552	5,053	4,041
over-time	52	52	57	92	49	76	128	130	131	147	141	165	112
travel time	3	1	0	0	0	0	0	0	0	0	0	0	1
total	3,450	3,471	3,074	3,284	2,591	2,436	2,922	3,286	3,329	4,441	4,693	5,218	4,155
over-time as a % of total administration	1%	2%	2%	3%	2%	3%	4%	4%	4%	3%	3%	3%	3%
travel time as a % of total administration	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	2%	2%	2%	3%	2%	3%	4%	4%	4%	3%	3%	3%	3%
"other" pay as a % of total WSF	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
"regular" pay as a % of regular WSF	5%	5%	4%	4%	3%	3%	3%	3%	3%	5%	5%	6%	4%
"other" pay as a % of "other" WSF	1%	1%	1%	1%	0%	1%	1%	1%	1%	1%	1%	1%	1%

VESSEL

	SFY94	SFY95	SFY96	SFY97	SFY98	SFY99	SFY00	SFY01	SFY02	SFY03	SFY04	SFY05	SFY06
DECK													
regular	28,412	28,300	29,847	29,841	31,664	33,865	35,974	35,862	37,188	36,739	35,845	35,924	37,634
over-time	2,287	2,191	2,182	2,530	3,149	3,066	3,390	2,740	2,802	2,717	2,266	2,518	2,875
penalty pay	99	73	71	75	78	87	129	156	175	206	166	97	49
travel time	555	523	551	679	932	1,073	1,147	1,230	1,358	1,373	1,374	1,268	1,492
	31,353	31,088	32,651	33,125	35,822	38,091	40,640	39,988	41,524	41,034	39,651	39,806	42,051
over-time as a % of total deck	7%	7%	7%	8%	9%	8%	8%	7%	7%	7%	6%	6%	7%
penalty pay as a % of total deck	0%	0%	0%	0%	0%	0%	0%	0%	0%	1%	0%	0%	0%
travel time as a % of total deck	2%	2%	2%	2%	3%	3%	3%	3%	3%	3%	3%	3%	4%
	9%	9%	9%	10%	12%	11%	11%	10%	10%	10%	10%	10%	11%
"regular" pay as a % of regular WSF	41%	41%	41%	41%	41%	41%	41%	40%	41%	40%	40%	39%	39%
"other" pay as a % of "other" WSF	37%	36%	35%	36%	38%	39%	40%	34%	35%	37%	34%	34%	36%