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Washington State Ferries Financing Study

Final Report

Prepared For:
Joint Transportation Committee
Washington State Legislature

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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 lead 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.

Step 2. Level of Service Standard

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.

Proposed Step 3. Operational and Pricing Strategies

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.

Step 5. Terminal and Repair Facility Plans

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.
Level of Service Standard	10. Require a review of the level of service standard for vehicles.
	11. Conduct an independent review of the proposed level of service standard for vehicles.
Pricing and Operations	12. Require a review of operational and pricing strategies.

Reviews	13. Conduct an independent review of proposed operating and pricing strategies.
Vessel Acquisition and Deployment	14. Tie vessel acquisition decisions to ridership.
Terminal and Repair Facility Plans	15. Clarify capital project definitions. 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. 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. 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. 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 • 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 • Actual boat wait by travel shed/route for vehicles
Stewardship	Operating Financial Plan	Farebox Recovery Measures • 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 • Costs and revenues per rider per route and travel shed
Stewardship	Capital Financial Plan	Capital Project Measures • Percent of projects on-time and on-schedule
Preservation	Terminal &Repair Facility Plan	Condition Rating Measures • Condition rating (i.e., percentage in good, fair, poor, or substandard condition)

FERRY FINANCE DECISION MODEL: KEY FINDINGS

Demand

Key Findings

- 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

Level-of-Service Standard (LOS)

Key Findings

- LOS set in 1994
  - 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

Operational and Pricing Strategies

Key Findings

- 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

Vessel Acquisition & Deployment

Key Findings

- 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

Terminals/ Repair Facility Plans

Key Findings

- Little review in prior studies
- Area of legislative concern
- Definitions of project categories (i.e. , preservation and improvement) overlap and create confusion

Preservation Projects:

- Life-cycle ratings key justification
- 58% of the 2005-07 preservation budget affects rating
- Life-cycle cost model needs improvement
  - 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

Improvement Projects:

- 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
  - 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

Operating Finance Plan

Key Findings

Finances:

- 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

Farebox Revenue:

- 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

Farebox Recovery:

- 2005 – 76 %
- Labor agreements not in 2005 recovery rate
- Need to set by travel shed/route

WSF Expenses:

- Labor is 60% of total costs
- 92% of staff is union
- Labor agreements drive extra costs, including:
  - 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

Impact of Cost Changes:

- 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

Capital Finance Plan

Key Findings

Finances (2005-21):

- Dedicated revenues – 12% of funding
- Nickel & TPA – 18%
- Discretionary Motor Vehicle Fund – 26 %
- Transfer from operating – 19%

Shortfall:

- Shortfall in capital funding
- Size of shortfall cannot be determined

Prioritization:

- Need for clearer prioritization process

FERRY FINANCE DECISION MODEL: RECOMMENDATIONS

Overarching Recommendations

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.

Demand

Recommendations

6. Require reconciliation of short and long-term ridership projections.

7. Conduct independent review of revised ridership projection.

8. In the interim, use econometric model projects of ridership for capital decisions.

9. Require a market survey of recreation users and vehicle drivers.

Performance Measures

- Ridership actuals against projections from the econometric and travel demand models
- Ridership by travel shed and route – actual vs. projected

Level-of-Service Standard (LOS)

Recommendations

10. Require a review of the level of service standard for vehicles.

11. Conduct an independent review of the proposed level of service standard for vehicles.

Performance Measures

Actual boat wait by travel shed/route for vehicles

Operational and Pricing Strategies

Recommendations

12. Require a review of operating and pricing strategies.

13. Conduct an independent review of proposed operating and pricing strategies.

Performance Measures

- ➢ Peak and non-peak ridership trends
- ➢ Impact of pricing and operational changes

Vessel Acquisition & Deployment

Recommendation

14. Tie vessel acquisition decisions to ridership.

Performance Measures

- ➢ Relationship of ridership to vessel acquisition plan

Terminals/ Repair Facility Plans

Recommendations
Capital definitions:

15. Clarify capital project definitions
    - 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

Preservation Projects

16. Revise terminal preservation program
    - Require development of terminal condition rating system.
    - Ensure expenses are properly allocated to terminal preservation.

Recommendations
Improvement Projects

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.

Performance Measures

- ➢ Condition rating -(i.e. % in good, fair, poor or substandard condition)
- ➢ Relationship of ridership to terminal improvement projects

Operating Finance Plan

Recommendations

Finances:

21. Revise operating fund policies
    - 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

Fares

22. Revise tariff setting directions and policies
    - 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

Performance Measures

- 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

Capital Finance Plan

Recommendations

23. Recognize likely shortfall in capital funding.
    - 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.

Performance Measures

- 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.

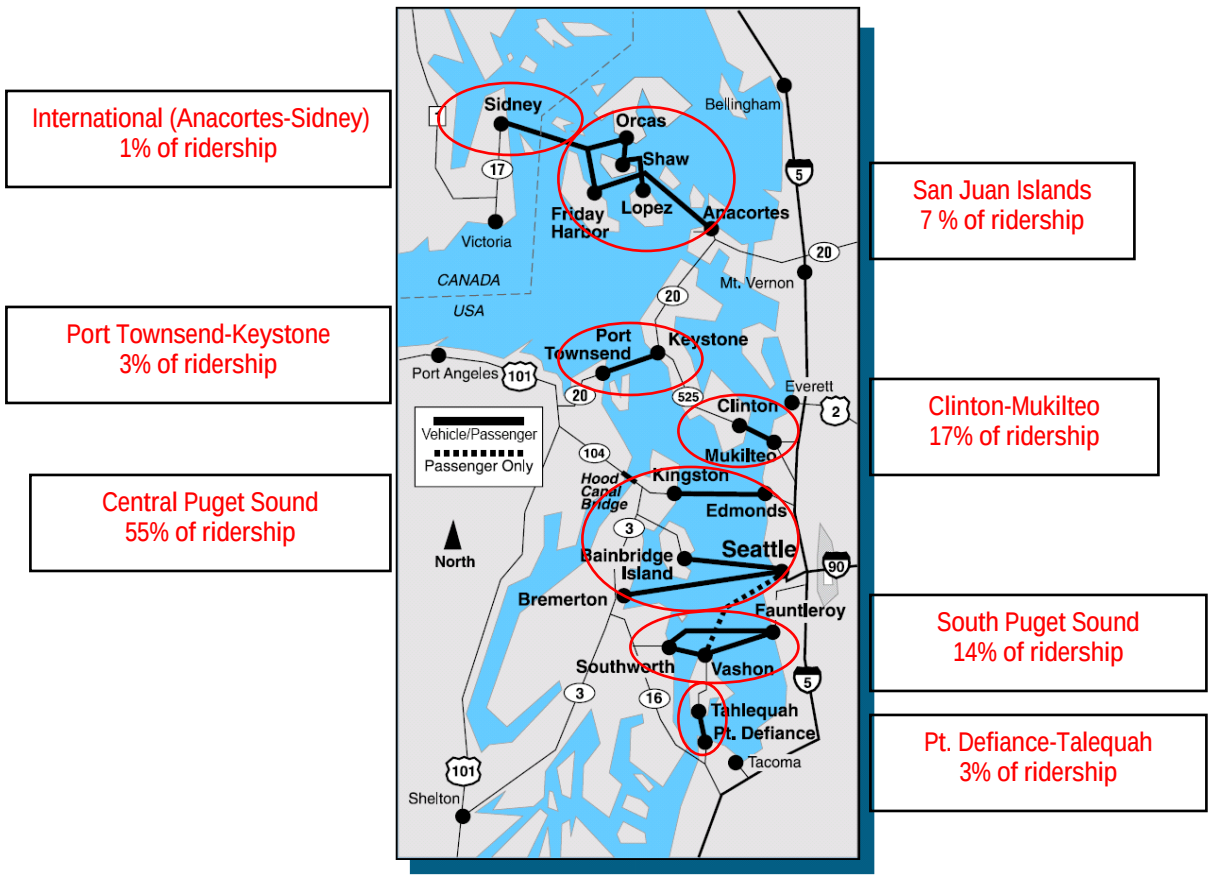
Section One
Ferry System Overview

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.

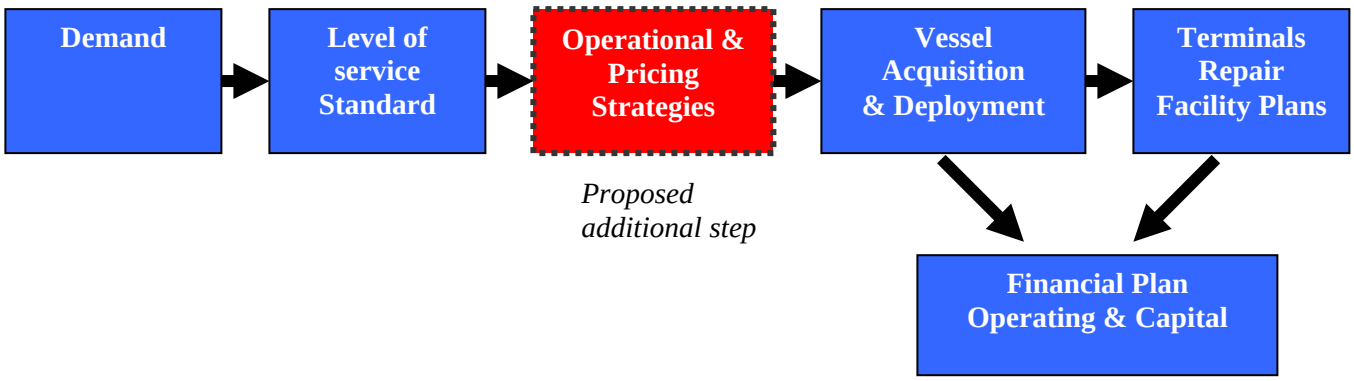
The consultants have found this decision model to be valid, with the addition of a review of operational and pricing strategies as discussed below.

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	• 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	• 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	• Forthcoming fiscal year and current budgeting and short-range service planning • Revenue estimates for the Transportation Revenue Forecast Council for statewide	• 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 • 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 • Providing data for other major transportation projects such as the Alaskan Way Viaduct • Guiding terminal design
Accuracy	• Tracked by WSF – quite accurate	• Not tracked by WSF
Data	• WSF ridership & fares • WSDOT and OFM economic and demographic projections • Global Insight economic database	• 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					
	2003	2004	2005	2006	Total	% (03-06)
# 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	• Address damage and/or unanticipated regulatory requirements
Preservation	• 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	• 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%
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	

> ½ budget

*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.

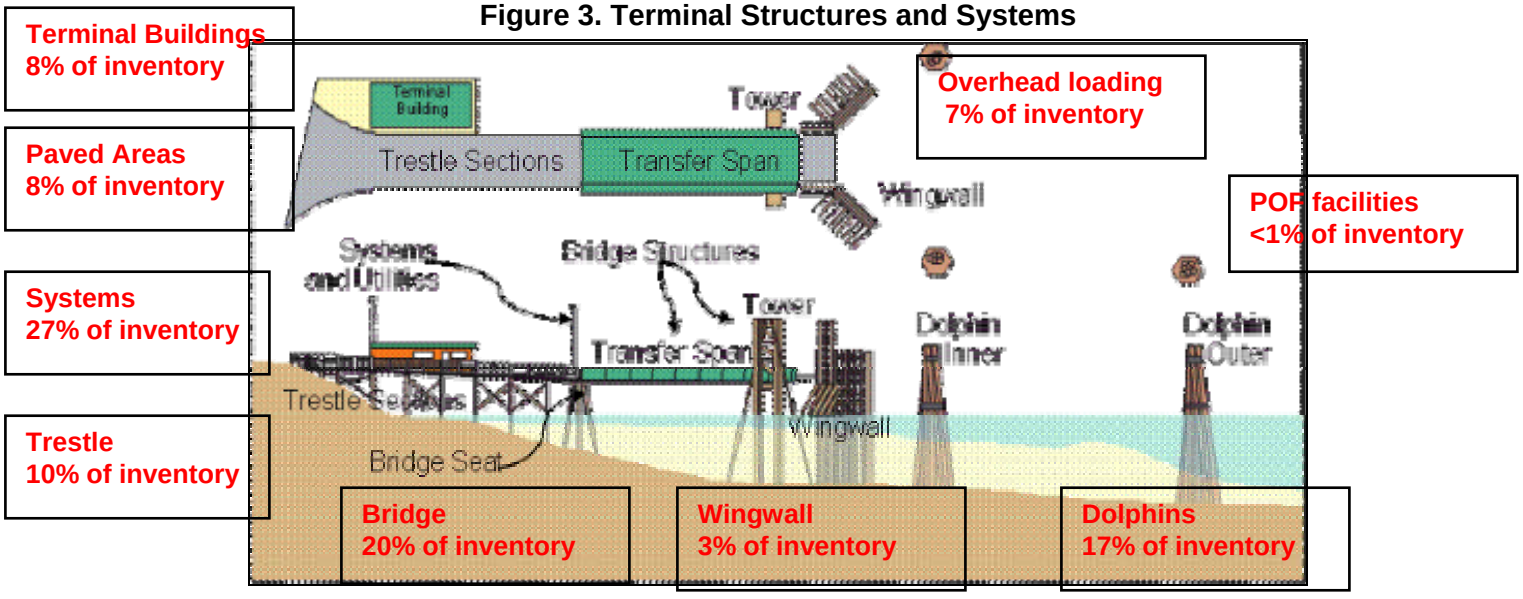
2. Life-Cycle Cost Model

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
Total Upland			*$8,000*

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%	*391.0*	100%	*429.0*	108%	*460.1*	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%	3.7
Motor Vehicle Account	-	-	-	-	38.3	31.3	4%	31.0	8%	-		-	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%	-
	-	*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 tip 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

Table 11. Ferry Capital 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	%	2005-21	%
FERRY CAPITAL RESOURCES AVAILABLE																										
Puget Sound Capital Construction Account (Account 099) Revenues:																										
Motor Vehicle Exise Tax	90.9	103.3	119.7	28.8	(0.0)	(0.0)	25%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%
Motor Vehicle Fuel Tax**	29.0	31.4	33.3	34.2	34.7	35.4	14%	36.0	13%	38.4	7%	40.8	9%	42.2	14%	43.3	12%	44.2	17%	45.1	15%	46.2	18%	337.3	12%
Federal Revenues*	13.7	4.4	21.5	40.5	-	57.7	10%	73.6	26%	47.9	9%	31.0	7%	31.0	11%	31.0	9%	31.0	12%	31.0	10%	31.0	12%	308.4	11%
Miscellaneous	7.0	2.4	4.9	1.1	0.5	1.9	1%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%
Bond Proceeds *	-	124.9	73.2	27.2	50.0	29.4	22%	41.0	14%	106.1	20%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	147.3	5%
	140.6	*266.4*	*252.6*	*131.7*	*85.2*	*124.4*	73%	*150.5*	53%	*192.3*	37%	*71.8*	15%	*73.2*	25%	*74.3*	21%	*75.2*	29%	*76.1*	25%	*77.2*	29%	*793.0*	29%
Committed Transfers & Direct Appropriations:																										
Multi-Modal Transportation Account *		-	-	-	-	9.3	1%	13.2	5%	60.7	12%	71.3	15%	-	0%	-	0%	-	0%	-	0%	-	0%	145.5	5%
Transportation 2003 Account *		-	-	-	-	5.7	0%	35.0	12%	108.3	21%	27.4	6%	3.9	1%	-	0%	-	0%	-	0%	-	0%	175.0	6%
2005 Transportation Partnership Accoun		-	-	-	-	-	0%	-	0%	1.9	0%	79.8	17%	6.0	2%	48.6	13%	28.4	11%	13.2	4%	7.5	3%	185.9	7%
Passenger Ferry Account		1.2	0.6	0.2	0.1	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%
Motor Vehicle Account - debt service*		-	-	14.5	9.5	9.2	2%	12.0	4%	22.1	4%	32.7	7%	32.6	11%	32.6	9%	32.1	12%	32.7	11%	32.7	12%	230.1	8%
		1.2	*0.6*	*14.8*	*9.6*	*24.2*	3%	*60.2*	21%	*193.1*	37%	*211.1*	45%	*42.5*	14%	*81.2*	23%	*60.5*	23%	*45.8*	15%	*40.2*	15%	*736.6*	27%
Other Transfers & Direct Appropriations:																										
Motor Vehicle Account*	-	-	-	15.5	158.8	61.3	17%	73.0	26%	132.5	26%	152.5	33%	125.0	42%	130.0	36%	27.0	10%	63.0	21%	-	0%	704.9	26%
PS Ferry Operations Account*	-	-	-	67.0	-	22.0	6%	-	0%	1.0	0%	30.0	6%	54.0	18%	75.0	21%	95.0	37%	117.0	39%	146.0	55%	519.8	19%
	-	-	-	*82.5*	*158.8*	*83.3*	24%	*73.0*	26%	*133.5*	26%	*182.5*	39%	*179.0*	61%	*205.0*	57%	*122.0*	47%	*180.0*	60%	*146.0*	55%	*1,224.7*	44%
TOTAL CAPITAL RESOUR(	140.6	267.6	253.2	229.0	253.5	231.9		283.7		518.9		465.4		294.7		360.5		257.7		302.0		263.5		2,754.3	
FERRY CAPITAL COSTS																										
Debt Service *	27.0	32.5	50.1	49.0	36.6	34.6	17%	37.0	13%	41.4	9%	33.1	7%	32.6	11%	32.4	9%	31.7	11%	31.7	11%	29.1	11%	269.6	10%
Debt Service - absorbed by M\	-	-	-	14.5	9.5	9.2	3%	12.0	4%	22.1	5%	32.7	6%	32.6	11%	32.6	9%	32.1	11%	32.7	11%	32.7	12%	230.1	8%
Ferry Capital Plan *	134.5	207.3	209.4	158.0	158.9	173.2	79%	244.2	83%	404.6	86%	441.9	87%	222.9	77%	278.2	81%	215.9	77%	231.5	78%	201.3	77%	2,246.9	82%
WSDOT Administration	1.9	5.4	7.1	3.9	-	0.0	1%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%	-	0%
TOTAL FERRY CAPITAL C	163.3	245.3	266.5	225.5	205.0	217.0		293.1		468.1		507.6		288.0		343.2		279.6		295.8		263.1		2,746.6	
Estimated PSCCA Balance at end of Biennium								6.3		57.1		14.8		21.5		38.8		16.8		23.0		23.4			

* 2006 Legislative Plan

** June 2006 Forecast

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 • Ridership actuals against projects 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 • Actual boat wait by travel shed/route for vehicles •

Stewardship	Operating Financial Plan	Farebox Recovery Measures • 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 • Costs and revenues per passenger per route and travel shed
Stewardship	Capital Financial Plan	Capital Project Measures • Percent of projects on-time and on-schedule
Preservation	Terminal & Repair Facility Plan	Condition Rating Measures • 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

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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.

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[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 plans[8] 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 start 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.

<u>Programming for the Capital Upkeep of the Terminals</u>

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 terminals[10]), 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

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[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 they 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 Bernsten, 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.

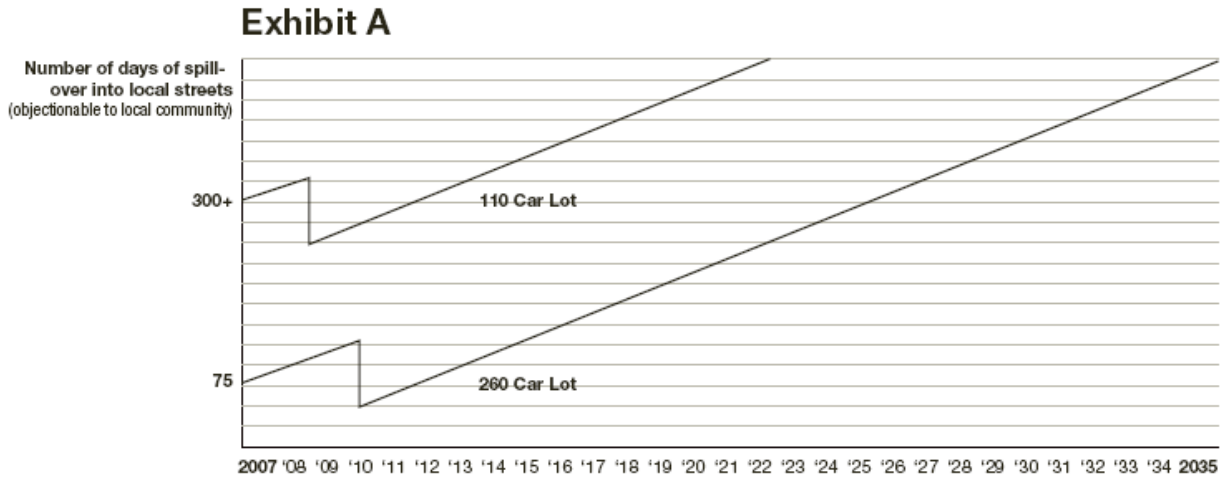

Exhibit B

PIN:	Title	Project Cost	Construction Biennium

902019V Anacortes Terminal Preservation **$300,000** **2007-2009**
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.

910413N Edmonds Terminal Preservation **$500,000** **2011-2013**
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.

900005L Fauntleroy Terminal Preservation **$500,000** **2007-2009**
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.

900026L Orcas Terminal Preservation **$400,000** **2005-2007**
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.

900001F Point Defiance Terminal Preservation **$268,000** **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 2023. This preservation project is part of a WSF safety initiative to standardize transfer span systems.

900010A Seattle Terminal Preservation **$1,000,000** **2007-2009**
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.

916008N Southworth Terminal Preservation **$1,554,000** **2005-2007**
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.

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 that 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

Comments from: Robert S. Distler, Member
Washington State Transportation Commission

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